Date: _____

DEPEARTMENT OF COMPUTERSEIENCE AND ENGGNERING

| S.NO | ACADAMIC YEAR | NO OF PUBLICATIONS |
|---|---|---|
| 1 | 2019-2020 | 52 |
| 2 | 2018-2019 | 20 |
| 3 | 2017-2018 | 6 |
| 4 | 2016-2017 | 16 |
| 5 | 2015-2016 | 37 |

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## 2019-2020

| 3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years (10) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| S.No. | Name of the author/s | Title of the paper | Name of journal | Publication date | ISSN NO | Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number | | |
| | | | | | | Link to website of the Journal | Link to article/paper/abstract of the article | Is it listed in UGC Care list/Scopus/Web of Science/other, mention |
| 1 | Dr. Md. Ateeq Ur Rahman | An Efficient Automated Parse System Approach for Huge Collection of Records | Journal of Engineering Sciences | 2019-20 | ISSN: 0377-9254 | https://jespublication.com | https://jespublication.com/upload/2019-V10-I9-79.pdf | UGC |
| 2 | Dr. Md. Ateeq Ur Rahman | Eliminating Laundering of Virtual Currency Using Blockchain from Online Transactions | Journal of Engineering Sciences | 2019-20 | ISSN: 0377-9254 | https://jespublication.com | https://jespublication.com/upload/2019-V10-I9-79.pdf | UGC |
| 3 | Dr. Md. Ateeq Ur Rahman | Rumour Detection Models & Tools for Social Networking Sites | Journal of Engineering Sciences | 2019-20 | ISSN: 2249 – 8958 | https://www.ijrte.org | https://www.ijrte.org/wp-content/uploads/papers/v8i5/E5089018520.p | UGC |
| 4 | Dr. Md. Ateeq Ur Rahman | Provide the Safe Environments for Cloud Computing using Authenticated Key Manage Procedure | Journal of Engineering Sciences | 2019-20 | ISSN: 2277-3878 | https://www.ijrte.org | https://www.ijrte.org/wp-content/uploads/papers/v8i5/E5089018520.pdf | UGC |
| 5 | Dr. Md. Ateeq Ur Rahman | Cloud Computing Data Group Distribution as Well as Restricted Distribution with Multi Owner | International Journal of Engineering and Advanced Technology | 2019-20 | ISSN: 2278-33075 | https://www.ijitee.org | https://www.ijitee.org/wp-content/uploads/papers/v9i3/B7837129219.p | UGC |
| 6 | Dr. Md. Ateeq Ur Rahman | Log as a Secure Service Scheme (LASS) for Cloud | International Journal of Recent Technology and Engineering | 2019-20 | ISSN NO. 0447-9483 | https://new.bhu.ac.in | https://new.bhu.ac.in/Images/files/43(2).pdf | UGC |

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|---|---|---|---|---|---|---|---|---|
| 7 | Dr. Md. Ateeq Ur Rahman | Crack Detection and Recognition Based on Segmentation and Defective Tracking in Concrete Image | International Journal of Innovative Technology and Exploring Engineering | 2019-20 | Issue 6, pp. 14682-14687 | http://solidstatetechnology.us | http://solidstatetechnology.us/index.php/JSST/article/view/6733 | UGC |
| 8 | DR M RAJU | " Emotion Detection and Sentiment Analysis Based on Machine Learning Techniques" | CIKITUSI Journal for Multidisciplinary Research | 2019-20 | ISSN: 0975-6876 | www.cikitusi.com | http://www.cikitusi.com/gallery/9-may-777.pdf | UGC |
| 9 | DR M RAJU | "A Review of Dimensional Indexing Based On Adaptive Cluster Distance Bounding" | Journal of Information and Computational Science,(JICS) | 2019-20 | ISSN:1548-7741 | www.joics.org | http://www.joics.org/VOL-9-ISSUE-12-2019/ | UGC |
| 10 | DR M RAJU | Parallel and Nearest Neighbor search For Hgh-Dimensional Index Structure of Cbir System Using Dva Tree | Solid State Technology | 2019-20 | ISSN:0038-111X | http://solidstatetechnology.us | http://solidstatetechnology.us/index.php/JSST/article/view/5635 | UGC |
| 11 | DR SRIDHAR GUMMALLA | An Efficient defect Estimation and Inpainting based on Sparse Representation | Solid State Technology | 2019-20 | ISSN:0038-111X | http://solidstatetechnology.us | http://solidstatetechnology.us/index.php/JSST/issue/view/46 | UGC |
| 12 | DR SRIDHAR GUMMALLA | Parallel and Nearest Neighbor search For Hgh-Dimensional Index Structure of Cbir System Using Dva Tree | Solid State Technology | 2019-20 | ISSN:0038-111X | http://solidstatetechnology.us | http://solidstatetechnology.us/index.php/JSST/issue/view/47 | UGC |
| 13 | DR SRIDHAR GUMMALLA | A Frame Work For Iris localization Based on Greedy Snake Model | Solid State Technology | 2019-20 | ISSN:0038-111X | http://solidstatetechnology.us | http://solidstatetechnology.us/index.php/JSST/issue/view/47 | UGC |
| 14 | DR RAVI CHANDRAN | A STUDY OF ADAPTIVE CLUSTER DISTANCE BOUNDING FOR HIGH DIMENSIONAL INDEXING | CIKITUSI JOURNAL OF MULTIDISCIPLINARY RESEARCH | 2019-20 | ISSN 0975-6876 | http://www.cikitusi.com | http://www.cikitusi.com/gallery/10-may-778.pdf | UGC |
| 15 | DR RAVI CHANDRAN | CLUSTERING HIGH DIMENSIONAL DATA WITH ITS TECHNIQUES | CIKITUSI JOURNAL OF MULTIDISCIPLINARY RESEARCH | 2019-20 | ISSN 0975-6876 | http://www.cikitusi.com | http://www.cikitusi.com/gallery | UGC |
| 16 | DR JYOTHI KUMAR | Electronic Voting System with Cloud Based High Performance Computing | International Journal of Advanced Trends in Computer Science and Engineering | 2019-20 | ISSN: 1546-1955 | http://www.aspbs.com/ctn/ | https://www.ingentaconnect.com/content/asp/jctn/2019/00000016/00000002/art00082;jses | SCOUPS |

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| 17 | DR JYOTHI KUMAR | Work-Family Conflict and Depression Among Women Working Professionals | Journal of Computational and Theoretical Nanoscience | 2019-20 | ISSN 0974-3618 (Print) 0974-360X (Online) | http://www.aspbs.com/ctn/ | https://www.ingentaconnect.com/contentone/asp/jctn/2019/00000016/00000002/art00077 | SCOUPS |
| 18 | KM SUBRANAMANYAM& OTHERS | Retinal Blood Vessels and Optical Disc Segmentation in Branch Retinal Vein Occluded Fundus Images Using Digital | Research Journal of Pharmacy and Technology | 2019-20 | ISSN 0974-3618 (Print) 0974-360X (Online) | https://rjptonline.org/ | https://rjptonline.org/AbstractView.aspx?PID=2019-12-4-72 | SCOUPS |
| 19 | KM SUBRANAMANYAM& OTHERS | The Impact of Distance Measures in K-Means Clustering Algorithm for Natural Color Images | Book Title : Advances in Artificial Intelligence and Data Engineering | 2019-20 | Publisher: Springer Singapore | https://www.springer.com/gp/book/9789811535130 | https://link.springer.com/chapter/10.1007/978-981-15-3514-7_71 | SCOUPS |
| 20 | M.GANESH | Feature Prediction in Urban and Industrial Area of Chemical Data Based Air Quality | Solid State Technology | 2019-20 | 0038-111X | https://www.solidstatetechnology.us/index.php/JSST | http://solidstatetechnology.us/index.php/JSST/article/view/4682 | SCOUPS/UGC LIST |
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| 22 | M.GANESH | EMOTION DETECTION AND SENTIMENT ANALYSIS BASED ON MACHINE LEARNING TECHNIQUES | Journal of Xi'an University of Architecture & Technology | 2019-20 | 1006-7930 | https://www.xajzkjdx.cn/ | https://www.xajzkjdx.cn/ | SCOUPS |
| 23 | M.GANESH | Machine Learning Approach for Fetal Heartbeat | Jour of Adv Research in Dynamical & Control System | 2019-20 | 1943-023X | https://www.jardcs.org/ | https://www.jardcs.org/ | SCOUPS |
| 24 | M.GANESH | Parallel and Nearest Neighbor Search for HighDimensional Index Structure of Cbir System Using DyaTree | Solid State Technology | 2019-20 | 0038-111X | https://www.solidstatetechnology.us/index.php/JSST | https://solidstatetechnology.us/index.php/JSST/article/view/5635 | SCOUPS |
| 25 | M.GANESH | Illuminating Welding Image Patterns Throughout Image Searching In Chronological Information In Spot Welding | Solid State Technology | 2019-20 | 0038-111X | https://www.solidstatetechnology.us/index.php/JSST | http://solidstatetechnology.us/index.php/JSST/article/view/5633 | SCOUPS |
| 26 | M.GANESH | An Efficient Defect Estimation and Inpainting Based on Sparse Representation | Solid State Technology | 2019-20 | 0038-111X | https://www.solidstatetechnology.us/index.php/JSST | https://solidstatetechnology.us/index.php/JSST/article/view/5122 | SCOUPS |

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| 27 | M.GANESH | Power Consumption for Data Replication Method Considering In Mobile Ad-Hoc Networks | Journal of Interdisciplinary Cycle Research | 2019-20 | 0022-1945 | http://www.jicrjournal.com/ | http://www.jicrjournal.com/ | UGC CATE LIST |
| 28 | M.GANESH | AN APPROACH FOR MULTIPLE CLASSIFIER RULE MINING TO PRUNING METHODS | The International Journal Of Analytical And Experimental Modal Analysis | 2019-20 | ISSN NO: 0886-9367 | http://www.ijaema.com | http://www.ijaema.com/ | UGC |
| 29 | M.GANESH | PERFORMANCE ANALYSIS OF CLUSTER EVALUATION USING DISTANCE BOUNDARY | The International Journal Of Analytical And Experimental Modal Analysis | 2019-20 | ISSN NO: 0886-9368 | http://www.ijaema.com/ | http://www.ijaema.com/ | UGC |
| 30 | M.GANESH | A FACILE DIAGNOSTIC LABORATORY TECHNIQUE IN CLINICAL MICROBIOLOGY USING | The International Journal Of Analytical And Experimental Modal Analysis | 2019-20 | ISSN NO: 0886-9369 | http://www.ijaema.com/ | http://www.ijaema.com/ | UGC |
| 31 | M.GANESH | AUTOMATIC INPAINTING BASED ON DEEP LEARNING FOR DIGITAL IMAGES | The International Journal Of Analytical And Experimental Modal Analysis | 2019-20 | ISSN NO: 0886-9370 | http://www.ijaema.com/ | http://www.ijaema.com/ | UGC |
| 32 | M.GANESH | A SPATIAL ANALYSIS MODEL FOR AIR POLLUTION MONITORING (SAMAPM) | he International Journal Of Analytical And Experimental Modal Analysis | 2019-20 | ISSN NO: 0886-9371 | http://www.ijaema.com/ | http://www.ijaema.com/ | UGC |
| 33 | M.GANESH | MATHEMATICAL FRAMEWORK FOR WELDING DEFECT DETECTION SYSTEM WITH | he International Journal Of Analytical And Experimental Modal Analysis | 2019-20 | ISSN NO: 0886-9372 | http://www.ijaema.com/ | http://www.ijaema.com/ | UGC |
| 34 | M.GANESH | DIMENSIONAL DATA WITH ITS TECHNIQUES | CIKITUSI JOURNAL FOR MULTIDISCIPLINARY RESEARCH | 2019-20 | 0975-6876 | http://cikitusi.com/ | http://www.cikitusi.com/gallery/26-may-797.pdf | UGC |
| 35 | Dr. Md. Ateeq Ur Rahman | Data Management in the Clouds and Related Challenges and Issues | International Journal of Recent Technology and Engineering | 2019-20 | ISSN: 2277-3878 | www.ijrte.com | www.ijrte.com | UGC |
| 36 | Dr. Md. Ateeq Ur Rahman | Access Controlled Model for Secure Maintenance olf Electrical Health Care Records Using XML Based Storage | Journal of Engineering Sciences | 2019-20 | ISSN: 0975-6876 | https://jespublication.com | https://jespublication.com/upload/2019-V10-I9-73.pdf | UGC |

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| 37 | Dr.M. Raju | A Secure Based Low Level Primitives Preserving Wireless Sensor Networks" | CIKITUSI Journal for Multidisciplinary Research | 2019-20 | ISSN: 0975-6876 | http://cikitusi.com | http://cikitusi.com/gallery/5-may-773.pdf | UGC |
| 38 | Dr.M. Raju | " Digital Cieluv Color Image Segmentation | CIKITUSI Journal for Multidisciplinary Research | 2019-20 | ISSN: 0975-6876 | http://cikitusi.com | http://cikitusi.com/VOLUME-6-ISSUE-5-MAY-2019/ | UGC |
| 39 | Dr. Sridhar Gummalla | Enhanced Self Adaptive Dynamic Software Architecture(ESADSA), | International Journal of Software Engineering(IJSE) | 2019-20 | 1687-6954 | http://ijse.org.eg/ | http://cikitusi.com/VOLUME-6-ISSUE-4-April-2019-Page-2/ | UGC |
| 40 | Dr. Sridhar Gummalla | A review of internet of things-IOT based on AVR micro controller | CIKITUSI | 2019-20 | 0975-6876 | http://cikitusi.com | http://cikitusi.com/VOLUME-6-ISSUE-4-April-2019-Page-2/ | UGC |
| 41 | Dr. Sridhar Gummalla | A simple system for monitor of driver drowsiness based machine learning | CIKITUSI | 2019-20 | 0975-6876 | http://cikitusi.com | http://cikitusi.com/VOLUME-6-ISSUE-4-April-2019-Page-2/ | UGC |
| 42 | M GANESH | CLUSTERING HIGH DIMENSIONAL DATA WITH ITS TECHNIQUES | CIKITUSI JOURNAL FOR MULTIDISCIPLINARY RESEARCH | 2019-20 | 0975-6876 | http://cikitusi.com/ | http://www.cikitusi.com/gallery/11-may-779.pdf | UGC |
| 43 | M GANESH | A Secure Based Low Level Primitives Preserving Wireless Sensor Networks | CIKITUSI JOURNAL FOR MULTIDISCIPLINARY RESEARCH | 2019-20 | 0975-6876 | http://cikitusi.com/ | http://www.cikitusi.com/gallery/5-may-773.pdf | UGC |
| 44 | M GANESH | A REVIEW OF INTERNET OF THINGS-IOT BASED ON AVR MICROCONTROLLER | CIKITUSI JOURNAL FOR MULTIDISCIPLINARY RESEARCH | 2019-20 | 0975-6877 | http://cikitusi.com/ | http://cikitusi.com/gallery/95-april-762.pdf | UGC |
| 45 | Dr.Muntha Raju | OPTIMIZED RESOURCE ALLOCATION FOR SOFTWARE RELEASE PLANNING | Indexing- International Journal on Recent Researchers in Science,Engineering and Technology (IJRRSET) | 2019-20 | ISSN :2348-3105 | http://jrrset.com/Volume8issue3.html | http://jrrset.com/2020/March/paper6.pdf | UGC |

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| 46 | Dr.MOGAMED ALI | EFFICIENT AUTHENTICATION FOR MOBILE AND PERVASIVE COMPUTING | International Journal of Intelligent Systems and Applications in Engineering | 2019-20 | ISSN :2348-3105 | http://jrrset.com/Volume8issue3.html | http://jrrset.com/2020/March/paper7.pdf | UGC |
| 47 | Dr.M. Raju | PRIVACY-PRESERVING PUBLIC AUDITING FOR SECURE CLOUD STORAGE | Indexing- International Journal on Recent Researchers in Science,Engineering and Technology (IJRRSET) | 2019-20 | ISSN :2348-3105 | rset.com/Volume8iss | http://jrrset.com/2020/March/paper8.pdf | UGC |
| 48 | Dr.M. Raju | PROGRESSIVE PARAMETRIC QUERY OPTIMIZATION | Indexing- International Journal on Recent Researchers in Science,Engineering and Technology (IJRRSET) | 2019-20 | ISSN :2348-3105 | rset.com/Volume8iss | http://jrrset.com/2020/March/paper9.pdf | UGC |
| 50 | DR ATEEQ U R REHAMEN | An Novelty Trust Based Collective Security Management in Osn | Journal of Engineering Sciences | 2019-20 | ISSN: 0377-9254. | https://jespublication.com | https://jespublication.com/issue.php?cid=21&scid=50 | UGC |
| 51 | DR RAVI CHANDRAN | SECURED AND ENERGY CONSTRAINED OPTIMAL ROUTING IN THE WIRELESS SENSOR NETWORK | CIKITUSI JOURNAL OF MULTIDISCIPLINARY RESEARCH | 2019-20 | ISSN 2278-3091 | http://www.cikitusi.com | http://www.cikitusi.com/gallery | UGC |
| 52 | DR JYOTHI KUMAR | Work-Family Conflict and Depression Among Women Working Professionals | Journal of Computational and Theoretical Nanoscience | 2019-20 | ISSN 0974-3618 (Print) 0974-360X (Online) | http://www.aspbs.com/ctn/ | https://www.ingentaconnect.com/contentone/asp/jctn/2019/00000016/00000002/art00077 | SCOUPS |

## 2018-2019

| S.N0 | NAME OF THE AUTHOR | TITEL OF THE PAPER | NAME OF THE JOURNAL | PUBLICATION DATE | ISSN NO. | STATUS OF AS LISTED IN UGC CASE JOURNEL LINK | | |
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| 2 | Dr. Md. Ateeq Ur Rahman | An Enhanced Decision Support System through Mining of Teachers Online Chat Data | International Journal of Emerging Technologies and Innovative Research | 2018-2019 | ISSN: 0973-7383 | http://www.csjournals.com | http://www.csjournals.com/IJEE/PDF10-2/56.pdf | UGC |
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| 5 | Dr. Md. Ateeq Ur Rahman | A Cost Efficient Allocation Algorithm for Customer Dominant Data across Various Cloud Providers | International Journal of Emerging Technologies and Innovative Research | 2018-2019 | ISSN: 2349-5162 | https://www.jetir.org | https://www.jetir.org/view?paper=JETIR1807810 | UGC |
| 6 | Dr. Md. Ateeq Ur Rahman | A Social Networks Based Search Engine Virus Propagation Approach | International Journal of Electronics Engineering | 2018-2019 | ISSN: 0973-7383 | http://www.csjournals.com | http://www.csjournals.com/?p=2083 | UGC |
| 7 | Dr.Mohammed Sirajuddin | "Extending the Performance of the MANETs by Implementing Distribute Key Verification Mechanism", | IJTIMES | 2018-2019 | ISSN: 2455-2585 | https://docplayer.net | https://docplayer.net/amp/179819291-Extending-the-performance-of-the-manets-by-implementing-distribute-key-verification-mechanism.html | UGC |
| 8 | Dr.Mohammed Sirajuddin | "Reducing the Network Overhead By Implementing Distributed Key Mechanism in MANETs | al of Engineering Science an | 2018-2019 | ISSN 2348 – 8034 | https://www.hindawi.com | https://www.hindawi.com/journals/scn/2021/5521713/ | UGC |
| 9 | K.M. Subramanian & Others | An Enhanced and Efficient Multi-View Clustering Trust Inference Approach by GA Model | formation Technology and | 2018-2019 | ISSN: 1554-1045, EISSN: 1554-1053 | https://www.igi-global.com/journal/international-journal-information-technology-web/1093 | https://www.igi-global.com/article/an-enhanced-and-efficient-multi-view-clustering-trust-inference-approach-by-ga-model/234751 | Scopus |

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| 10 | K.M. Subramanian & Others | A Framework for Evaluating Medical Blog and Camera Opinions Based on Opinion Mining and Sentiment Analysis | tational and Theoretical Na | 2018-2019 | ISSN: 1546-1955 (Print), EISSN : | http://www.aspbs.com/ctn/ | https://www.ingentaconnect.com/contentone/asp/jctn/2018/00000015/00000006/art00063 | Scopus |
| 11 | K.M. Subramanian & Others | Detection and Segmentation of Retinal Blood Vessel in Digital RGB and CIELUV color space Fundus Images | Journal of Pharmacy and T | 2018-2019 | ISSN 0974-3618 | https://rjptonline.org/ | https://rjptonline.org/Issues.aspx?VID=11&IID=6 | Scopus |
| 12 | K.M. Subramanian & Others | "A Modified Method for High Dimensional Data Clustering Based on the Combined Approach of Shared Nearest Neighbour Clustering and Unscented Transform Detection | mputational and Theoretica | 2018-2019 | ISSN:1546-1963 | http://www.aspbs.com/ctn/ | https://www.ingentaconnect.com/contentone/asp/jctn/2018/00000015/f0020006/art00040 | Scopus |
| 13 | Dr.M.Ravichandran | Detection and Segmentation of Retinal Blood Vessel in Digital RGB and CIELUV color space Fundus Images | Journal of Pharmacy and T | 2018-2019 | ISSN 0974-3618 | https://rjptonline.org/ | https://rjptonline.org/ | UGC Journal |
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| 18 | Dr. Sridhar Gummalla | Clustering high dimensional data with ITS Techniques | CIKITUSI | 2018-2019 | 0975-6876 | http://cikitusi.com | http://cikitusi.com/VOLUME-6-ISSUE-5-MAY-2019/ | UGC |
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| 20 | DR AN NANDHA KUMAR | Optimization of Coagulant Using Artificial Neural Network | International Journal of Research in Mechanical, Mechatronics and Automobile Engineering(IJRMMAE) | 2018-2019 | ISSN: 2454-1443 | http://ijrmmae.in/Volume3-Issue4.html | http://ijrmmae.in/Volume3-Issue-4/paper7.pdf | UGC |

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| S.N0 | NAME OF THE AUTHOR | TITEL OF THE PAPER | NAME OF THE JOURNAL | PUBLICATION DATE | ISSN NO. | STATUS OF AS LISTED IN UGC CASE JOURNEL LINK | | |
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| 2 | Dr. Sridhar Gummalla | Leveraging Self-Adaptive Dynamic Software Architecture | on in Computer Science & | 2017-2018 | 2454-4248,Volume 4 Issue 4 | http://www.ijfrcsce.org | http://www.ijfrcsce.org/download/browse/Volume_4/April_18_Volume_4_Issue_4/1525429959_04-05-2018.pdf | UGC Care |
| 3 | Dr. Sridhar Gummalla | Enhanced Self Adaptive Dynamic Software Architecture with Heuristic Approach | Pure and Applied Mathem | 2017-2018 | 1314-3395, VOL. 119 | http://www.acadpubl.eu | http://www.acadpubl.eu/hub/special%20issue | UGC Care |
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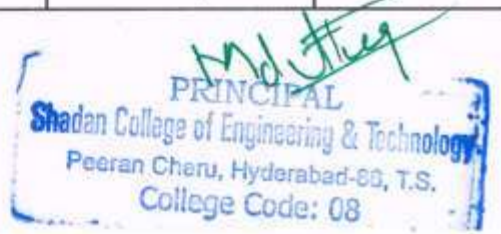

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# PROGRESSIVE PARAMETRIC QUERY OPTIMIZATION

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**ABSTRACT-**In this project we approach a new technique called Progressive Parametric Query Optimization. In the Real world, commercial applications usually rely on precompiled parameterized procedures to interact with a database. Unfortunately, executing a procedure with a set of parameters different from those used at compilation time may be arbitrarily suboptimal. Parametric query optimization (PQO) attempts to solve this problem by exhaustively determining the optimal plans at each point of the parameter space at compile time. However, PQO is likely not cost-effective if the query is executed infrequently or if it is executed with values only within a subset of the parameter space. In this paper, we propose instead to progressively explore the parameter space and build a parametric plan during several executions of the same query. We introduce algorithms that, as parametric plans are populated, are able to frequently bypass the optimizer but still execute optimal or near-optimal plans.

## 1. INTRODUCTION

In this world of increasing globalization, Stupors moves forward to meet the challenges of the future through the development of R & D projects in various domains. R & D project sector attracts the most prominent thinkers and practitioners in a range of fields that impinge on development. Over the decade, Stupors, a Subsidiary of Spiro Technologies & consultant Pvt. Ltd provides a wide range of R & D project development training. Our uniqueness lies in the exclusive R & D project development. Accordingly, we created a setting that is enabling, dynamic and inspiring for the increase of solutions to global problems by R & D project development. Developing appropriate, responsible, innovative and practical solutions to students, by assisting in R & D project development. All our research is stranded in the need to provide an industry based training for students. Our team consists of more than 300 enthusiastic experts, drawn from a range of disciplines and experience, supported by infrastructure and facilities, which are world class and distinctively state-of-the-art. The strength of the organization lies in not only identifying and articulating intellectual challenges across a number of disciplines of knowledge but also in mounting research, training and demonstration projects leading to development of specific problem-based advanced technologies. The organization growth has been evolutionary, driven by a vision of the future and ingrained in challenges frightening today. The organization continues to grow in size, spread and intensity of work undertaken. Our experts are involved in a wide range of R & D project development training to student wishing to undertake professional development, or just wanting to learn about a new subject or area of study. In many applications, the values of runtime parameters of the system, data, or queries themselves are unknown when queries are originally optimized. In these scenarios, there are typically two trivial alternatives to deal with the optimization and execution of such parameterized queries. One approach, termed here as Optimize-Always, is to call the optimizer and generate a new execution plan every time a new instance of the query is invoked. Another trivial approach, termed Optimize-Once, is to optimize the query just once, with some set of parameter values, and reuse the resulting physical plan for any subsequent set of parameters. Both approaches have clear disadvantages. Optimize- Always requires an optimization call for each execution of a query instance. These optimization calls may be a significant part of the total query execution time, especially for simple queries. In addition, Optimize-Always may limit the number of concurrent queries in the system, as the optimization process itself may consume too much memory. On the other hand, Optimize-Once returns a single plan that is used for all points in] the parameter space. The chosen plan may be arbitrarily suboptimal for parameter values different from those for which the query was originally optimized.

## 2. LITERATURE SURVEY

Query optimization is a function of many relational database management a good systems in which multiple query plans for satisfying a query are examined and query plan is identified. This may or not be the absolute best strategy because there are many ways of doing plans. There is a tradeoff between the amount of time spent figuring out the best plan and the amount running the plan. Different qualities of database management systems have different ways of balancing these two. Cost based query optimizers evaluate the resource footprint of various query plans and use this as the basis for plan selection.

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# PRIVACY-PRESERVING PUBLIC AUDITING FOR SECURE CLOUD STORAGE

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**ABSTRACT-**In Cloud Environment, using cloud storage service, users can remotely store their data and enjoy the on-demand high-quality applications and services from a shared pool of configurable computing resources, without the burden of local data storage and maintenance. However, the fact that users no longer have physical possession of the outsourced data makes the data integrity protection in cloud computing a formidable task, especially for users with constrained computing resources. Moreover, users should be able to just use the cloud storage as if it is local, without worrying about the need to verify its integrity. Thus, enabling public audit ability for cloud storage is of critical importance so that users can resort to a third-party auditor (TPA) to check the integrity of outsourced data and be worry free. To securely introduce an effective TPA, the auditing process should bring in no new vulnerabilities toward user data privacy, and introduce no additional online burden to user.In this paper, we propose a secure cloud storage system supporting privacy-preserving public auditing. We further extend our result to enable the TPA to perform audits for multiple users simultaneously and efficiently. Extensive security and performance analysis show the proposed schemes are provably secure and highly efficient.

**Keywords:** Cloud Service Providers, Third Party Auditor, Cloud Data Storage Service, Privacy-Preserving Public Auditing

## 1. INTRODUCTION

Cloud computing has been envisioned as the next generation information technology (IT) architecture for enterprises, due to its long list of unprecedented advantages in the IT history: on-demand self-service, ubiquitous network access, location independent resource pooling, rapid resource elasticity, usage-based pricing and transference of risk . From users' perspective, including both individuals and IT enterprises, storing data remotely to the cloud in a flexible on-demand manner brings appealing benefits: relief of the burden for storage management, universal data access with location independence, and avoidance of capital expenditure on hardware, software, and personnel maintenances, etc. While cloud computing makes these advantages more appealing than ever, it also brings new and challenging security threats toward users' outsourced data. Since cloud service providers (CSP) are separate administrative entities, data outsourcing is actually relinquishing user's ultimate control over the fate of their data. As a result, the correctness of the data in the cloud is being put at risk due to the following reasons. First of all, although the infrastructures under the cloud are much more powerful and reliable.

Objective of this paper is to develop and enable privacy-preserving public auditing for cloud data storage under the aforementioned model, our protocol design should achieve the following security and performance guarantees Public audit ability, Storage correctness, Privacy preserving, Batch auditing, Lightweight Communication.

## 2. EXISTING SYSTEM

We consider a cloud data storage service involving three different entities: the cloud user, who has large amount of data files to be stored in the cloud; the cloud server, which is managed by the cloud service provider to provide data storage service and has significant storage. space and computation resources (we will not differentiate CS and CSP hereafter); the third-party auditor, who has expertise and capabilities that cloud users do not have and is trusted to assess the cloud storage service reliability on behalf of the user upon request. Users rely on the CS for cloud data storage and maintenance. They may also dynamically interact with the CS to access and update their stored data for various application purposes. As users no longer possess their data locally, it is of critical importance for users to ensure that their data are being correctly stored and maintained. In short, although outsourcing data to the cloud is

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# A KEYWORD-AWARE SERVICE RECOMMENDATION METHOD ON MAP REDUCE FOR BIG DATA APPLICATIONS

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**Abstract:** Big data refers to datasets that aren't solely massive, however additionally high in variety and velocity that makes them troublesome to handle using tradition tools and techniques. Due to the rise of such Data, solutions got to be studied and provided so as to handle and extract worth and information from these datasets. Nowadays Web services are very widespread .Recommender systems represent user preferences for the aim of suggesting things to get or examine. They are many basic applications in electronic commerce and data access, providing suggestions that effectively prune massive data areas so users are directed toward those things that best meet their wants and preferences. A variety of techniques are projected for activity recommendation, including content-based, collaborative, knowledge-based and different techniques. In this paper, we are presenting "Keyword-Aware Service Recommendation Method", to deal with the above challenges. It aims at presenting a customized service recommendation list and recommending the foremost applicable services to the users effectively. Specifically, keywords area unit wont to indicate users' preferences, and a user-based cooperative Filtering algorithm is adopted to get applicable recommendations. To improve the scalability and efficiency of KASR in "Big Data" environment, the proposed system proposes techniques that have been implemented it on a Map Reduce framework in Hadoop platform.
Keywords: Recommender system, Preference, Keyword, Big data, Hadoop, MapReduce.

## 1. INTRODUCTION

Data is growing at an enormous speed creating it tough to handle such large amount of data. The main problem in handling such large amount of data is as a result of that the result of that the amount is increasing quickly as compared to the computing resources. The Big data term that is getting used currently a days is quite name because it points out solely the dimensions of the data not putting an excessive amount of attention to its different existing properties.
Today, Big Data management stands out as a challenge for IT corporations. the answer to such a challenge is shifting more and more from providing hardware to provisioning more manageable package solutions[2] .Big Data additionally brings new opportunities and significant challenges to trade and domain.[3]. Similar to most big data applications, the large data tendency conjointly poses significant impacts on service recommender systems. With the growing range of different services, effectively recommending services that users most well-liked has become a vital analysis issue. Service recommender systems are shown as valuable tools to assist users modify services over load and supply acceptable recommendations to them. Examples of such sensible applications include CDs, book, web content and numerous alternative product currently use recommender systems [5]. Over the last decade, there has been a lot of analysis done each in business and world on developing new approaches for service recommender systems. Many major e-commerce Websites are used recommendation systems to produce relevant suggestions to their customers. The recommendations may be supported numerous parameters, like item popular on the company's Website; user characteristics like geographical location or different demographic information; or past shopping for behavior of prime customers.

## 2. CLOUD COMPUTING AND MAP REDUCE

Cloud computing could be a successful paradigm of service oriented computing and has revolutionized the approach computing infrastructure is abstracted and used. the main goal of cloud computing is to share resources, like infrastructure, platform, software, and business method.
Cloud computing will offer effective platforms to facilitate parallel computing, that has gained vital attention in recent years to method large volume of data. There are many cloud computing tools out there, such as Hadoop driver, MapReduce of Google [8], the generator of Amazon.com, the dryad of Microsoft and Neptune of Ask.com, etc.

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# SCALABLE DISTRIBUTED SERVICE INTEGRITY ATTESTATION FOR SOFTWARE-AS-A-SERVICE CLOUDS

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**ABSTRACT**: Software-as-a-service (SaaS) cloud systems enable appli- cation service providers to deliver their applications via massive cloud computing infrastructures. However, due to their sharing nature, SaaS clouds are vulnerable to ma- licious attacks. In this paper, we present IntTest, a scal- able and effective service integrity attestation framework for SaaS clouds. IntTest provides a novel integrated at- testation graph analysis scheme that can provide stronger attacker pinpointing power than previous schemes. More- over, IntTest can automatically enhance result quality by replacing bad results produced by malicious attackers with good results produced by benign service providers. We have implemented a prototype of the IntTest system and tested it on a production cloud computing infrastructure using IBM System S stream processing applications. Our experimental results show that IntTest can achieve higher attacker pinpointing accuracy than existing approaches. IntTest does not require any special hardware or secure kernel support and imposes little performance impact to the application, which makes it practical for large-scale cloud systems.

Index Terms:
Distributed service integrity attestation, cloud computing, secure distributed data processing.

## 1. INTRODUCTION :

CLOUD computing has emerged as a cost-effective re- source leasing paradigm, which obviates the need for us- ers maintain complex physical computing infrastructures by themselves. Software-as-a-service (SaaS) clouds (e.g., Amazon Web Service (AWS) [1] and Google AppEngine [2]) build upon the concepts of software as a service [3] and service-oriented architecture (SOA) [4], [5], which enable application service providers (ASPs) to deliver their applications via the massive cloud computing infra- structure.

In particular, our work focuses on data stream processing services [6], [7], [8] that are considered to be one class of killer applications for clouds with many real-world ap- plications in security surveillance, scientific computing, and business intelligence. However, cloud computing infrastructures are often shared by ASPs from different security domains, which make them vulnerable to mali- cious attacks. For example, attackers can pretend to be legitimate service providers to provide fake service com- ponents, and the service components provided by benign service providers may include security holes that can be exploited by attackers. Our work focuses on service integ- rity attacks that cause the user to receive untruthful data processing results. Although confidentiality and privacy protection problems have been extensively studied by previous research service integrity attestation problem has not been properly addressed. Moreover, service integ- rity is the most prevalent problem, which needs to be ad- dressed no matter whether public or private data are pro- cessed by the cloud system. Although previous work has provided various software integrity attestation solutions , those techniques often require special trusted hardware or secure kernel support, which makes them difficult to be deployed on large-scale cloud computing infrastructures. Traditional Byzantine fault tolerance (BFT) techniques can detect arbitrary misbehaviours using full-time major- ity voting (FTMV) over all replicas, which however incur high overhead to the cloud system. A detailed discussion of the related work can be found in Section 5 of the on- line supplementary material, which can be found on the Computer SocietyDigital Libraryathttp://doi.ieeecomput- ersociety.org/10.1109 TPDS.2013.62. IntTest, a new in- tegrated service integrity attestation framework for mult itenant cloud systems. IntTest p rovides a practical service integrity attestation scheme that does not assume trusted entities on third-party service provisioning sites or require applicat ion modifications. IntTest builds upon our previ- ous work RunTest and AdapTest but can provide stronger malicious attacker pinpointing power than RunTest and AdapTest.

Specifically, both RunText and Adap Test as well as tra- dit ional majority voting schemes need to assume that benign service providers take majority in every service function. However, in large-scale multitenant cloud sys- tems, mult

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# DETECTING SPYWARE BY IMITATING USER ACTIVITIES

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**Abstract** The success of any spyware is determined by its ability to evade detection. Although traditional detection methodologies employing signature and anomaly based systems have had reasonable success, new class of spyware programs emerge which blend in with user activities to avoid detection. One of the latest anti-spyware technologies consists of a local agent that generates honey tokens of known parameters (e.g., network access requests) and tricks spyware into assuming it to be legitimate activity. In this paper, as a first step, we address the deficiencies of static honey token generation and present an attack that circumvents such detection techniques. We synthesize the attack by means of data mining algorithms like associative rule mining. Next, we present a randomized honey token generation mechanism to address this new class of spyware. Experimental results show that (i) static honey tokens are detected with near 100% accuracy, thereby defeating the state-of the-art anti- spyware technique, (ii) randomized honey token generation mechanism is an effective anti-spyware solution
Keywords: Malware, Android, Security, Formal Methods, Temporal Logic.

## 1 INTRODUCTION

Mobile device currently permeate our every day acti- vity. From back transaction, to update the status on social networks, mobile devices allow us to perform a variety of activities. As a matter of fact, smartphone sales exceeded the current X86 PC platform in 2016, and this trend is expected to grow up in 20181.

Mobile devices quickly attracted the interest of the attackers, and it is easy to understand the reason why: if compared with PC platforms, in our smartphones are stored more and more sensitive and private infor- mation. Furthermore, smartphones manage the SIM card in which there is our credit, also for this reason this is an appealing attack surface for malicious soft- ware writers (Cimitile et al., 2018), (Mercaldo et al., 2016a).

Mobile operating systems producers tried to re- medy to this rampant spread of malicious software targeting mobile platform.

For instance, Google with the aim to consent the publication of a new app on Play Store (the official market for Android users) requires a deep scan of the app aimed to find possible malicious activities. Indeed the new app must be submitted to Bouncer (Oberheide and Miller, 2012), an automatic application scanning system introduces in 2012 with follo- wing distinctive features, including:

- static analysis in search of known threats;

it runs the software in a virtual emulator (QEMU) and identifies its behavior;
it starts and tracks the behavior of the app for 5 minutes;

- it explores the app in every button.

Bouncer performs a static analysis using the an- timalware provided by VirusTotal (a service able to evaluate the application simultaneously with 60 dif- ferent antimalware) but, considering the signature- based detection approach offered by current antimal- ware technologies, it is possible to mark a malicious sample as malware only whether their signature is sto- red into the antimalware repository (and consequently it is not possible to detect zero-day threat).

With regard to the dynamic analysis, the app is ran for a limited time window (5 minutes): in case the app does not exhibit the malicious behaviour in this period it passes this test. Furthermore, usually mal- ware is able to understand whether it is executed on a virtual environment (in this case it will not perform the malicious action, to avoid the sandbox detection).

For these reasons, it is easy from malicious writers to elude the current detection (Canfora et al., 2018;690
Cimitile et al., 2017; Mercaldo et al., 2016b: Canfora et al., 2015b).

The preferred target of mobile malicious software is represented by ourselves: this is the reason why usually mobile malware is able to secretly record phone calls, collect images, videos, text messages and even the GPS coordinates of the victims and send them to the attackers and, generally speaking, to spy the infected users (this is the reason why this kind of malicious software is called spyware).

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# Optimization of Coagulant Using Artificial Neural Network

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*Abstract*-The complex nature of drinking water treatment unit processes, utilities have quantifying the relationships that exist between process input and output. Process models, where they exist, are often site specific and they are unable to handle continous variations in one or two key process variables. The artificial neural network technology is a robust artificial intelligence technology that can handle the treatment process. In water treatment, ANNs have enormous potential, especially to support workers in plant operation. Water plants are taking large volumes of data, especially information about water quality parameters, ANNs can be used for the prediction of water quality. With use of ANNs in real time, system will get more efficient, so reducing costs and increasing the quality of water. In this paper, the artificial neural network is used for the prediction of optimum coagulant dosage in Pillur water treatment plant, Coimbatore

## 1. Introduction

*1.1 General:* Water treatment is a well known process and it is used for many years. The raw water quality available in India varies significantly, resulting in modifications to the conventional water treatment scheme consisting of aeration, chemical coagulation, flocculation. sedimentation, filtration and disinfection. The water is treated differently in many water treatment plants depending upon the quality of water entering into the treatment plant. The rapid growth of population has exerted the portable water demand, which requires exploration of raw water sources, developing treatment and distribution systems.

*1.2 Water Quality Parameters:* The water quality parameters which are relevant to this project work and which are used in the artificial neural network development model are discussed. 1.2.1 PH of Water: PH indicates the level of acidity of the water but it actually a measurement of the potential activities of hydrogen ions (H+) in the water sample. The PH range is about 6.0 to 7.8 but for drinking purposes WHO has set a standard PH level between 6.5 to 8.5. The factors affecting the PH value of water is the concentration of carbon dioxide (CO2) in the water.Natural and unpolluted rainwater can be used as acidic as PH 5 to 6 because it absorbs CO2 during the day and release it during the night, PH levels in water can change from day to night.

*1.2.2 Turbidity:* The turbidity may be caused by large amount of clay, silt, sawdust, wood ash, microorganisms and plant fibres. Such particles can cause tastes, carry bacteria and plant nutrients can cause chlorine in the disinfection process. The flow rate of water body is a primary factor influencing turbidity level. High flow rate of water can carry more particles and larger sized

sediment which causes higher turbidity level. In general, turbidity will increase significantly during and afterb rainfall, which causes sediment to be carried in to the stream.

*1.2.3 Colour*: The colour of the stream water is an indication of a source and it can provide important information about the water quality. Darker colour water absorb more of sun heat

# A Secure Based Low Level Primitives Preserving Wireless Sensor Networks

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**Abstract**

**In this work, a new node based Wireless Sensor secure with calculating energy dissipation in WSN secure is presented. The proposed scheme has four phases. In the first phase, a nearest node matching technique that identifies a best match, to synthesis in the output Sensor of bigger size is designed in terms of ordered calculating energy dissipation in WSN model secure nodes. In case of successful match of nearest node, called *node-hit*, the proposed scheme finds candidate nearest nodes with triangular search, in the next phase. In the node selection phase, the proposed scheme considers a subset of calculating energy dissipation in WSN model secure nodes among the nearest nodes, for the purpose of synthesis which consumes less memory and time. This synthesized output is smoothened in the final phase, by preserving the low level contents between the synthesized nodees. The performance of the proposed scheme is measured with Homogeneity and Entropy between the original and synthesized Sensors and is also compared with existing Wireless Sensor Networks schemes. The results are encouraging.**

**Keywords**: Wireless Sensor Networks , Calculating energy dissipation in WSN, Node-Hit, Candidate Nearest node, Node Selection.

## 1. Introduction

Wireless Sensor Network (WSN) consists of a large amount of small battery powered devices which perform tasks like processing, radio transmission-reception, sensing and actuating. Wireless sensor network devices have limited energy to complete large tasks. Energy consumption still remains the limitation of this field. Wireless sensor network comprise of thousands of motes which are used to exchange information with the user either directly or through the external base- station (BS). Each of these sensor nodes sense data from environment surrounding the sensors and send it to the outside world through the external base station. A base station is a mobile node or may be a fixed node which has a capability of connecting the sensor network to an existing communications infrastructure or to the internet [7]. An ordinary node performs two major tasks. Firstly, it senses physical phenomenon and performs some computation and forwards it to other nodes, if necessary. Secondly, it also acts as relay point for other sensor nodes to route the data [8]. Transmission unit is tasked to receive the information from CPU and transmit it to the outside world. Power unit regulate battery power to sensor node.

There are different ways to achieve better lifetime which include energy efficient routing, battery characteristics etc. Routing in wireless sensor networks is very challenging due to several characteristics that distinguish these networks from other wireless networks like mobile, ad hoc networks or cellular networks.

These include dense deployment of sensor nodes, significant data redundancy, limited bandwidth and limited transmission power, etc.

This paper is organized as follows: In Section 2, the mathematical preliminary on Calculating energy dissipation in WSN Model is presented. The proposed Wireless Sensor Networks scheme is described Section 3. The performance measures for the proposed Wireless Sensor Networks scheme

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# Emotion Detection and Sentiment Analysis Based on Machine Learning Techniques

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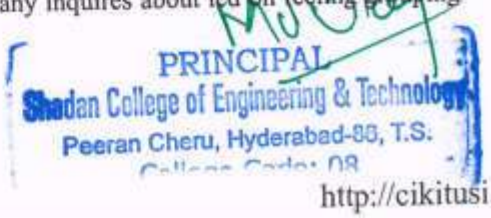
**Abstract- In this paper condenses the investigation of various regulated and unsupervised learning procedures of study for sentiment analysis Based on Machine Learning Techniques. The development of social web contributes tremendous measure of client produced substance, for example, client audits, remarks and suppositions. This client created substance can be about items, individuals, occasions, and so forth. This data is extremely valuable for organizations, governments and people. While this substance intended to be useful breaking down this heft of client created content is troublesome and tedious. So there is a need to build up a smart framework which naturally mine such colossal substance and order them into positive, negative and unbiased class. Slant investigation is the robotized mining of mentalities, suppositions, and feelings from content, discourse, and database sources through Natural Language Processing (NLP). The target of this paper is to find the idea of Sentiment Analysis in the field of Natural Language Processing, and shows a similar investigation of various methods utilized in this field.**

***Keywords: TF*PDF algorithm, SVM, Sentiment Analysis, F-Measure, EFS algorithm.***

## I. INTRODUCTİON

Sentiment analysis is a sort of normal dialect preparing for following the state of mind of people in general about a specific item or theme. supposition investigation [1], which is additionally called conclusion mining, includes in building a framework to gather and inspect feelings about the item made in blog entries, remarks, audits or tweets. notion investigation can be helpful in a few different ways. for instance, in showcasing it helps in judging the achievement of a promotion crusade or new item dispatch, figure out which renditions of an item or administration are well known and even recognize which socioeconomics like or aversion specific highlights [2].

There are a few difficulties in sentiment investigation [3-6]. The first is an assessment word that is thought to be sure in one circumstance might be viewed as negative in another circumstance. a second test is that individuals don't in every case express suppositions seamy. Most conventional content handling depends on the way that little contrasts between two bits of content don't change the importance in particular. in sentiment examination, in any case, "the photo was awesome" is altogether different from "the photo was not incredible". individuals can be opposing in their announcements. most audits will have both positive and negative remarks, which is to some degree reasonable by breaking down sentences each one in turn. be that as it may, in the more casual medium like twitter or websites, the more probable individuals are to consolidate diverse assessments in a similar sentence which is simple for a human to see, however more troublesome for a pc to parse. now and again even other individuals experience issues understanding what somebody thought in light of a short bit of content since it needs setting. for instance, "that motion picture was comparable to its last motion picture" is altogether subject to what the individual communicating the assessment thought of the past model. the client's yearning is on for and reliance upon online counsel and proposals the information uncovers is only one purpose for the develop of enthusiasm for new frameworks that arrangement specifically with conclusions as a top of the line protest. assumption investigation focuses on states of mind, though conventional content mining centers around the examination of actualities. there are couple of fundamental fields of research prevail in sentiment examination: notion order, include based sentiment characterization and conclusion rundown. conclusion characterization manages grouping whole records as per the suppositions towards specific items. highlight construct sentiment grouping in light of the other hand thinks about the feelings on highlights of specific articles. feeling rundown assignment is not the same as customary content outline in light of the fact that exclusive the highlights of the item are mined on which the clients have communicated their sentiments. feeling rundown does not outline the surveys by choosing a subset or rework a portion of the first sentences from the audits to catch the fundamental focuses as in the great content synopsis. dialects that have been contemplated generally are english and in chinese. by and by, there are not very many inquires about led on feeling grouping for different dialects like arabic, italian and thai.

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# CONSIDERATION OF RESPONSIBLE STORAGE FOR MAINTENANCE OF ANONYMOUS DATA

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**ABSTRACT:**

Clouds are used to store up responsive information in relation to patients to facilitate access to medical professionals, and researchers. A massive quantity of information is being accumulated within cloud, and for the most part of it is responsive information. Privacy protection within clouds is being searched by numerous researchers. Access control is gaining significance in social networking where users accumulate their individual information and distribute them with particular groups of users they fit in. Access control is significant, with the intention that only approved users can access the information and it is significant to make sure that information approaches from a dependable source. We put forward privacy preserving authenticated scheme of access control according to which a user can generate a file and accumulate it securely in cloud. The system comprises of use age of protocols of attribute based encryption as well as attribute-based signature. In attribute based encryption, a user has a set of features besides its exceptional ID. In proposed system, cloud authenticates dependability of series devoid of knowing user's individuality earlier than storing data. Our system has additional characteristic of access control in which applicable users are capable to decrypt accumulated information and avoids replay attacks along with supporting creation, and reading data which is accumulated in cloud. For the most part of schemes do not maintain user revocation, which our scheme performs and mainly high-priced operations concerning pairings and is finished by cloud.

***Keywords: Access control, Privacy protection, Attribute based encryption, Cloud.***

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# Biometric Data Using Score Fusion Through Stegnography

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Abstract:- Multi-biometrics, or the fusion of more than one biometric modality, sample, sensor, or algorithm, is quickly gaining popularity as a method of improving biometric system performance and robustness. Despite the recent growth in multi-biometrics research, little investigation has been done to explore the possibility of achieving multi-modal fusion from a single sensor. This approach to multi-biometrics has numerous advantages, including the potential for increased recognition rates, while still minimizing sensor cost and acquisition times. In this work, experiments are presented which successfully combine multiple samples of face and iris biometrics obtained from a single stand-off video sensor. Several fusion techniques are explored to test the e activeness of multi-modal and score level fusion, with the best recognition rates achieved by using a Borda count of face and iris modalities. The nal results out-perform either single-modality approach, and the proposed multi-biometric framework represents a viable and natural extension to many commercial stand-off iris sensors.

Keywords:- Multimodal Biometrics, Modes of Fusion, Security Services.

## 1. Introduction

There are three general ways to identify a person to a computer system, based on what you know, what you have, or who you are. "What you know" approaches such as passwords and PINs have less reliability because they can be lost, stolen, or guessed. "What you have" technologies such as RFID cards and e-tokens also can be stolen. Biometrics belong to the "who you are" class and can be subdivided into behavioral and physiological approaches. Behavioral biometric include signature recognition, voice recognition, keystroke dynamics, and gait analysis. Physiological biometric include fingerprints, iris, retina scans, hand, finger, face, ear geometry, hand vein, nail bed recognition, DNA and palm prints. As biometrics can't be borrowed, stolen, forgotten, and forging is

# DIGITAL CIELUV COLOR IMAGE SEGMENTATION

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**Abstract: The identification of retinal blood vessels is very important but crucial task to analyze the severity of the retinal diseases such as diabetic retinopathy, macular degeneration, central retinal vein occlusion, central retinal artery occlusion, retinal detachment and branch retinal vein occlusion. It is evident that huge number of computer based automated algorithms are developed for the accurate detection of blood vessels and optical disc. Most of the work utilizes the retinal fundus images in RGB color space. The proposed work implements the detection and segmentation of retinal blood vessel in RGB and device independent CIELUV color space. The proposed work for the segmentation retinal blood vessel is based on adaptive histogram equalization, median filtering and morphological operations.**

**Keywords: Segmentation, Retinal Blood Vessel, Adaptive Histogram Equalization, Median Filtering, Mathematical Morphology**

## 1. INTRODUCTION

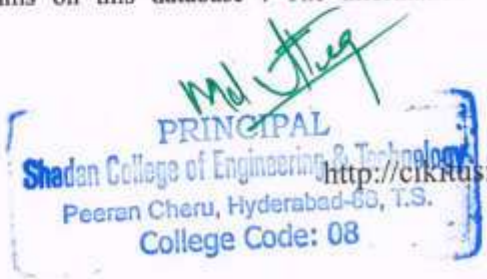
Retinal blood vessel detection and segmentation is a vital process for the precise illustration, analysis, diagnosis, planning of early treatment and surgery for retinal diseases such as diabetic retinopathy, macular degeneration, central retinal vein occlusion, central retinal artery occlusion, retinal detachment and branch retinal vein occlusion[1-3]. Recent years, due to the advancement of latest technologies, a huge number of automated methods developed for the segmentation of blood vessels from retinal color fundus images[4-6]. However, identification and segmentation of retinal blood vessels still remains an exigent assignment due to the abnormalities, non-uniform illumination, varying shape and size of the vessels, and anatomical variability between subjects[5]. Number of works presented innovative methods [21-27] for the automatic detection and segmentation of retinal vessels ns in color fundus images. The proposed work implements the detection and segmentation of retinal blood vessel in RGB and device independent CIELUV color space. A color space is nothing but a method or way of creating and visualizing colors[9]. Human eye describes color as three important attributes of hue, brightness and colorfulness[10]. But a computer monitor define color as the percentage of red (R), green (G), and blue (B) phosphor emissions[11]. Various color spaces had developed for different applications[13]. The input image taken from image sensor is usually in RGB color space. However, this device dependent and non uniform color space is not suitable for objects identification and recognition of colors[12]. Moreover, it is very difficult to find out an exact color in RGB color space. So it is very important to transform RGB color image into other color spaces such as CIELuv[14]. The main advantage of CIELuv color space is that it is device independent. i.e., the same color information is displayed irrespective of equipment[18]. CIELuv color space is uniformly derived from CIEXYZ color space[17]. In perceptual uniform space, such as CIELuv, any two colors those are equally far-away in the color space are equally distant perceptually[15]. In CIELuv color space, the component L indicates the actual visual difference and the color information (red/blue and yellow/blue) are stored in u and v components[16].

## 2. PROPOSED SYSTEM

Figure 2 illustrates the proposed system for the detection and segmentation of retinal blood vessel in color fundus images. The proposed approach is explained as follows.

Step 1: The input image is acquired from the DRIVE date base (https://www.isi.uu.nl/Research/Databases/DRIVE/).

The DRIVE database is extensively used by the researcher to facilitate the relative investigations on segmentation of retinal blood vessels and assessment their algorithms on this database[20]. The information

# A REVIEW OF DIMENSIONAL INDEXING BASED ON ADAPTIVE CLUSTER DISTANCE BOUNDING

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## *Abstract*

*-Clustering is important for the study of technology has taken data analysis and centralized effort in various fields including statistics, pattern recognition and data extraction for decades. It provides high-dimensional information retrieval greatly to manage the use of different data sources for effective learning and selection feature. Sports high dimensional data collection is still the issue of the challenge. When the data-dimensional high collection, efficiency and accuracy of the assembly is very bad. To improve the quality and use of machine learning tasks include a mechanism hubness. Hubness mechanism related to data space carriers handled by a mile from certain data points are also referred to as hubs with a small space for many of the data points are added in the high places dimensions that are linked to the focus distance. High performance hubness data dimensions able to handle many of the tasks of machine learning, a classification, nearest neighbor, revealed deviant groups.*

## 1. INTRODUCTION

Assemble in places high dimensional is a recurring problem in many areas such as pattern recognition and data mining. Later, it helps to analyze the groups also gain a deep knowledge of the data distribution. Pool is the process of combining similar things together while things in different groups are different from objects from other groups according to a predetermined measure of similarity. It is an effective technique for the analysis of patterns of data setsdata.Clustering real world in the non-linear high-dimensional features that you have regulardis known as the curse of dimensions. Many of the data sets in the real world of high arecomprised feature space dimensions. Typically, many algorithms do not yield tangible results because of the scattering inherent in the data space.

Data collection on the high and low dimensional accuracy and quality of the collection algorithm because of poor data objects from a variety of groups in various partial

# Multimodal Biometric Steganography for Secured Authentication by using LDA

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*Abstract:*-Nowadays, image recognition has become a highly active research topic in cognitive computation community, due to its many potential applications. Generally, the image recognition task involves two subtasks: image representation and image classification. Most feature extraction approaches for image representation developed so far regard independent component analysis (ICA) as one of the essential means.Biometric performance improvement is a challenging task. In this paper, a hierarchical strategy fusion based on multimodal biometric system is presented. This strategy relies on a combination of several biometric traits using a multi-level biometric fusion hierarchy. The multi-level biometric fusion includes a pre-classification fusion with optimal feature selection and a post-classification fusion that is based on the similarity of the maximum of matching scores. Linear discriminant analysis (LDA) is a generalization of Fisher's linear discriminant, a method used in statistics, pattern recognition and machine learning to find a linear combination of features that characterizes or separates two or more classes of objects or events. The resulting combination may be used as a linear classifier, or, more commonly, for dimensionality reduction before later classification.

*Key-words*:- Biometric,data security, authentication, multimodal biometrics, steganography,

## 1. Introduction

Over the past ten years, canonical subspace projection techniques such as PCA, ICA and FLD have been widely used in the face recognition research [1-5]. These techniques represent a face as a linear combination of low rank basis images. They employ feature vectors consisting of coefficients that are obtained by simply projecting facial images onto
their basis images. In order for a subspace projection based method to be robust to partial occlusions and local distortions, its basis images should effectively realize a part-based local representation. Local representation provides robustness to partial occlusions and local distortions because successful face recognition can be achieved by representing some important facial parts that correspond to feature regions such as eyes, eye brows, nose and lips. This "recognition by parts" paradigm [11] has been popular in the object recognition research because the approach can be successfully applied to the problem of object recognition with occlusion.

Facial image representations based on different basis images are illustrated in Figure 1. ICA can be applied to face recognition in two different representations: ICA architecture I and II [2]. Please refer to section 2.1 for more description about these two representations. PCA and ICA architecture II basis images, as shown in Figure 1 (a) and (b), respectively, display global properties in the sense that they assign significant weights to potentially all the pixels. This accords with the fact that PCA basis images are just sealed versions of

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# Parallel and Nearest Neighbor Search for High-Dimensional Index Structure of Cbir System Using Dva-Tree

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*Abstract-*

The System proposed similarity measure on multimedia data to retrieve content-based information. Parallel Similarity search focus on research in the field of adaptable similarity search which considers the adaptation of the proposed similarity measure to different user preferences. In order to improve the retrieval quality of content-based similarity search, they plan to examine the properties of the underlying similarity matrix to capture those user preferences. The content-based retrieval of heavily sized databases. As information retrieval is generally not restricted to a fixed size of the databases, this investigate on techniques to query voluminous data in an efficient way. To support the retrieval process, distributed vector (DVA) approximation and indexing techniques of the proposed similarity measure.
***Keywords:*** *Distributed Vector Approximation (DVA), multimedia data*

## I. Introduction:

The need to manage various types of large scale datastored in web environments has drastically increased andresulted in the development of index mechanism for highdimensionalfeature vector data about such a kinds ofmultimedia data. Recent search engine for the multimediadata in web location may collect billions ofimages, text and video data, which makes the performancebottleneck to get a suitable web documents andcontents. Given large image and video data collections, abasic problem is to find objects that cover given informationneed. Due to the huge amount of data, keywordbasedtechniques are too expensive, requiring too muchmanual intervention. In contrast, a content-based informationretrieval(CBIR) system identifies the images mostsimilar to a given query image or video clip.

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# OPTIMIZED RESOURCE ALLOCATION FOR SOFTWARE RELEASE PLANNING

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**ABSTRACT**- Incremental software development offers products in releases where each release provides additional or modified functionality compared to the previous release. Incremental delivery of software products provides business value earlier and allows for quicker reception of customer feedback. Release planning for incremental software development assigns features to releases such that technical, resource, risk, and budget constraints are met. A feature can be offered as part of a release only if all of its necessary tasks are done before the given release date. We assume a given pool of human resources with different degrees of productivity to perform different types of tasks. In the context of release planning, the question studied in this paper is how to allocate these resources to the tasks of implementing the features such that the value gained from the released features is maximized.
Keywords: Portland Pattern Repository, OPTIMIZE RASORP

## 1. INTRODUCTION

Planning of software releases and allocation of resources cannot be handled in isolation. To address the inherent difficulty of this process, we propose a two-phase optimization approach called OPTIMIZE RASORP that combines the strength of two existing solution methods.
Phase 1 applies integer linear programming to a relaxed version of the full problem.
Phase 2 uses genetic programming in a reduced search space to generate operational resource allocation plans. The method is evaluated for a series of 600 randomly generated problems with varying problem parameters. The results are compared with a heuristic that locally allocates resources based on a greedy search.

## 2. LITERATURE REVIEW

A release planning meeting is used to create a release plan, which lays out the overall process. The release plan is then used to create iteration plans for each individual iteration. It is important for technical people to make the technical decisions and business people to make the business decisions. Release planning has a set of rules that allows everyone involved with the process to make their own decisions. The rules define a method to negotiate a schedule everyone can commit to. The essence of the release planning meeting is for the development team to estimate each user story in terms of ideal programming weeks. An ideal week is how long you imagine it would take to implement that story if you had absolutely nothing else to do. No dependencies, no extra work, but do include tests. The customer then decides what story is the most important or has the highest priority to be completed. User stories are printed or written on cards. Together developers and customers move the cards around on a large table to create a set of stories to be implemented as the first (or next) release.
A useable, testable system that makes good business sense delivered early is desired. When planning by time multiply the number of iterations by the process velocity to determine how many user stories can be completed. When planning by scope divide the total weeks of estimated user stories by the process velocity to determine how many iterations till the release is ready. Individual iterations are planned in detail just before each iteration begins and not in advance. The release planning meeting was called the planning game and the rules can be found at the Portland Pattern Repository. When the final release plan is created and is displeasing to management it is tempting to just change the estimates for the user stories. The estimates are valid and will be required as-is during the iteration planning meetings. Underestimating now will cause problems later. Instead negotiate an acceptable release plan. Negotiate until the developers, customers, and managers can all agree to the release plan. The base philosophy of release planning is that a process may be quantified by four variables, scope, resources, time, and quality. Scope is how much is to be done. The major advantage is tasks can be defined to an even more fine-grained level. In addition, managerial support and other tasks can be considered here as well.

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# EFFICIENT AUTHENTICATION FOR MOBILE AND PERVASIVE COMPUTING

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**ABSTRACT-** An application in which messages that need to be exchanged are short and both their privacy and integrity need to be preserved, rely on the existence of small devices that can exchange information and form communication networks. In a significant portion of such applications, the confidentiality and integrity of the communicated messages are of particular interest. In this, two narrative techniques for authenticating short encrypted messages that are directed to meet the requirements of mobile and pervasive applications. By taking advantage of the fact that the message to be authenticated must also be encrypted, we propose provably secure authentication codes that are more efficient than any message authentication code in the literature. The key idea behind the proposed techniques is to utilize the security that the encryption algorithm can provide to design more efficient authentication mechanisms, as opposed to using standalone authentication primitives.

**Keywords:** Pervasive, Primitives

## 1. INTRODUCTION

Preserving the integrity of messages exchanged over public channels is one of the classic goals in cryptography and the literature is rich with message authentication code (MAC) algorithms that are designed for the sole purpose of preserving message integrity. Based on their security, MACs can be either unconditionally or computationally secure. Unconditionally secure MACs provide message integrity against forgers with unlimited computational power. On the other hand, computationally secure MACs are only secure when forgers have limited computational power. We utilize the fact that the message to be authenticated is also encrypted, with any secure encryption algorithm, to append a short random string to be used in the authentication process. Since the random strings used for different operations are independent, the authentication algorithm can benefit from the simplicity of unconditional secure authentication to allow for faster and more efficient authentication, without the difficulty to manage one-time keys.

## 2. LITERATURE REVIEW

The Auto-ID Center is developing low-cost radio frequency identification (RFID) based systems with the initial application as next generation bar-codes. We describe RFID technology, summarize our approach and our research, and most importantly, describe the research opportunities in RFID for experts in cryptography and information security. The common theme in low-cost RFID systems is that computation resources are very limited, and all aspects of the RFID system are connected to each other. Understanding these connections and the resulting design trade-offs is an important prerequisite to effectively answering the challenges of security and privacy in low-cost RFID systems. In cryptography, secure channels enable the confidential and authenticated message exchange between authorized users. A generic approach of constructing such channels is by combining an encryption primitive with an authentication primitive (MAC). In this work, we introduce the design of a new cryptographic primitive to be used in the construction of secure channels. Instead of using general purpose MACs, we propose the employment of special purpose MACs, named \E-MACs". The main motive behind this work is the observation that, since the message must be both encrypted and authenticated, there can be a redundancy in the computations performed by the two primitives.

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# A Spatial Spectral Filtration (SSF) Based Correlated Coefficients Thresholding Approach for Image Denoising.

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[2]*Assistant Professor, Dept of CSE, JAZAN UNIVERSITY, KSA.*

***ABSTRACT*— In this paper, an improvised dynamic noise filtration technique is proposed for the denoising of images which is based on the filtration of spectral content of the image. This developed approach is termed as Spatial Spectral Filtration (SSF). In this denoising method, a spectral decomposition in multi frequency band using multiwavelets is presented and an enhanced thresholding concept is employed for suppression of the additive noise from the extracted frequency band information.**

**The proposed method is based on the concept of recovering the spatial dependence of pixels in the noisy image that underwent the multiwavelet decomposition. The resulting decomposed coefficients that are highly correlated are taken as components of a vector and the thresholding operation is applied on the whole vector. In this work we have proposed an enhanced multivariate thresholding scheme which is designed especially for denoising of two dimensional images.**

**Simulation is performed on images distorted with additive white Gaussian noise at different levels and the obtained results reveal that this method is able to successfully eliminate noise to a reasonable extent and also the performance of this approach significantly surpasses that of conventional denoising techniques both subjectively and visually.**

***Keywords*—Denoising, Gaussian Noise, Multiwavelets, Thresholding, Decomposition.**

## I. INTRODUCTION

It is found that the image is contaminated with a lot of distortions during its capturing and transmission. These distortions results in noise intensities, blurriness and visual disturbances in the images which in turn leads to major errors in the prediction of bounding regions and estimation of descriptive features of the captured image. Recently, a range of nonlinear median type filtration techniques like weighted median [1] and relaxed median [2] has been proposed for overcoming this drawback. The wiener filtering [3] technique needs the data of the spectra of noise and original signal and is found to filter well only for smooth signals. The wiener filter [3] performs spatial smoothing and its model complexity control depends on selecting the window size. For overcoming the drawbacks of the wiener filtering, the wavelet based denoising approach was proposed in [4].

Filters in wavelet transform processing require a number of desirable features like regularity, symmetry, compact support and orthogonality. However due to implementation constraints, the scalar wavelets [5-7] cannot offer all these features simultaneously leading to less efficient denoising results than multiwavelets [8] which possess all these features simultaneously and offers much efficient processing capabilities than normal wavelets.

A multiwavelet system [8-11] can enhance the performance by offering superior processing at the borders employing linear-phase symmetry, Orthogonality, vanishing moments. Most of the existing methods [8-12] using multiwavelets, works only for one-dimensional signals for denoising of images. The problem in these approaches is that the thresholding technique independently processes the noise on each individual coefficients leading to less accurate denoising results.

For overcoming these drawbacks, an improvised dynamic noise filtration technique is proposed in this paper which is based on the filtration of spectral content of the image. This developed approach is termed as Spatial Spectral Filtration (SSF). In this denoising method, a spectral decomposition in multi frequency band using multiwavelets is presented and a thresholding concept is employed for suppression of the additive noise from the extracted frequency band information.

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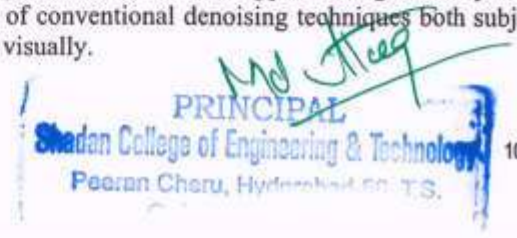

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# Keyword Based Search Outcomes with Ranked Verification In Cloud Storage

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## ABSTRACT

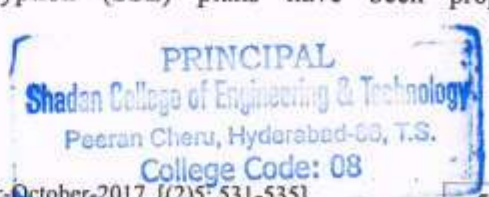
With the approach of cloud computing, an increasing number of persons have a tendency to outsource their information to the cloud. As a key information use, secure keyword search over encoded cloud information has intent the concern of more investigators. But, many of existing researchers depend on a perfect belief that the cloud server is "interested however legit", where the searched lists are most certainly not tested. In this paper, we consider moreover a difficult model, where the cloud server would most likely carry on deceitfully. In light of this model, we investigate the issue of result validation for the secure ranked keyword search. Not quite the same as past information confirmation plans, we propose a unique constrained based plan. With our precisely expressed verification information, the cloud server can't know which data owners, or what number of data owners trade handle information which will be utilized for confirming the cloud server's misconduct. With our deliberately planned confirmation development, the cloud server can't know which data owners' information are installed in the validation information buffer, or what number of data owners' searched information are really utilized for validation. All the cloud server identifies that, when he carries on deceptively, he would be found with a high possibility, and rejected genuinely once found. Besides, we propose to upgrade the estimation of parameters utilized as a part of the development of the secret validation information buffer. At last, with intensive investigation and broad analyses, we insist the adequacy and productivity of our proposed plans.

**Keywords :** Dishonest cloud server, data verification, deterrent, top-k search

## I. INTRODUCTION

Cloud computing brings a lot of benefits, for privacy concerns, for security concerns, people and endeavor clients are hesitant to outsource their delicate information, including private photographs, individual wellbeing records, and business classified archives, to the cloud. Since once touchy information are outsourced to a remote cloud, the relating data owners specifically loses control of these information. The Apple's iCloud leakage of celebrity photograph in 2014 has furthered our concerned with respect to the cloud's information security. Encryption on touchy information before outsourcing is an option approach to protect information security against enemies.

In cloud computing, data owners might share their outsourced information with various data-users, who may need to just recover the information records they are involved in. some of the most conventional approaches to do as such is through keyword based recovery. Keyword based recovery an information benefit and broadly connected in plaintext situations, in which data-users recover valid records in a document set in view of keywords. Though, it ends up being a hard job in cipher-text situation because of restricted operations on encoded information. In addition, to enhance probability and save money on the cost in the cloud model, it is liked to get the recovery result with the most valid documents that match data-users enthusiasm rather than every one of the records, which shows that the records ought to be ranked in the request of applicability by data-users' benefit and just the records with the most amazing significance are sent back to data-users. A progress of searchable symmetric encryption (SSE) plans have been proposed to

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# A Spatial Spectral Filtration (SSF) Based Correlated Coefficients Thresholding Approach for Image Denoising.

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*ABSTRACT*— **In this paper, an improvised dynamic noise filtration technique is proposed for the denoising of images which is based on the filtration of spectral content of the image. This developed approach is termed as Spatial Spectral Filtration (SSF). In this denoising method, a spectral decomposition in multi frequency band using multiwavelets is presented and an enhanced thresholding concept is employed for suppression of the additive noise from the extracted frequency band information.**

**The proposed method is based on the concept of recovering the spatial dependence of pixels in the noisy image that underwent the multiwavelet decomposition. The resulting decomposed coefficients that are highly correlated are taken as components of a vector and the thresholding operation is applied on the whole vector. In this work we have proposed an enhanced multivariate thresholding scheme which is designed especially for denoising of two dimensional images.**

**Simulation is performed on images distorted with additive white Gaussian noise at different levels and the obtained results reveal that this method is able to successfully eliminate noise to a reasonable extent and also the performance of this approach significantly surpasses that of conventional denoising techniques both subjectively and visually.**

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Filters in wavelet transform processing require a number of desirable features like regularity, symmetry, compact support and orthogonality. However due to implementation constraints, the scalar wavelets [5-7] cannot offer all these features simultaneously leading to less efficient denoising results than multiwavelets [8] which possess all these features simultaneously and offers much efficient processing capabilities than normal wavelets.

A multiwavelet system [8-11] can enhance the performance by offering superior processing at the borders employing linear-phase symmetry, Orthogonality, vanishing moments. Most of the existing methods [8-12] using multiwavelets, works only for one-dimensional signals for denoising of images. The problem in these approaches is that the thresholding technique independently processes the noise on each individual coefficients leading to less accurate denoising results.

For overcoming these drawbacks, an improvised dynamic noise filtration technique is proposed in this paper which is based on the filtration of spectral content of the image. This developed approach is termed as Spatial Spectral Filtration (SSF). In this denoising method, a spectral decomposition in multi frequency band using multiwavelets is presented and a thresholding concept is employed for suppression of the additive noise from the extracted frequency band information.

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Simulations are performed on images distorted with additive white Gaussian noise at different levels and the obtained results reveal that this method is able to successfully eliminate noise to a reasonable extent and also the performance of this approach significantly surpasses that of conventional denoising techniques both subjectively and visually.

# Provide the Safe Environments for Cloud Computing using Authenticated Key Manage Procedure

**E. Saikiran, Anubharti, Ateeq-ur-Rahman**

***Abstract:*** *with the development of cloud computing innovation regarding unwavering quality & proficiency, countless administrations have relocated to the cloud stage. To advantageous access to the administrations & secure the protection of correspondence in people in general system, 3-factor Mutual Authentication & Key Agreement conventions for multi-server designs increase extensive consideration. Be that as it may, the vast majority of the current 3-factor Mutual Authentication & Key Agreement conventions don't give a proper security verification bringing about different assaults going on associated conventions, or they have high calculation & correspondence expenditure. What's more, the majority of the 3-factor Mutual Authentication & Key Agreement conventions haven't a unique denial instrument, which prompts pernicious clients cannot be expeditiously disavowed. To concentrate on these downsides, we plan a unarguable unique revocable 3-factor Mutual Authentication & Key Agreement convention that accomplishes the client dynamic management utilizing Schnorr marks & gives proper security verification in the irregular prophet. Security examination shows that our convention can fulfill different needs in the multi-server situations. Execution investigation exhibits that the proposed plan is appropriate for computing asset obliged savvy gadgets.*

***Key words: - Safe Environments, Cloud computing, Authenticated Key***

## I. INTRODUCTION

In the ongoing decade, cloud computing innovation has been totally marketed. It can improve administration proficiency as well as decrease costs. An ever increasing number of organizations are putting their administrations on the cloud stage for improvement, management & upkeep. This not just lessens the neighborhood upkeep trouble for these ventures, yet in addition gives brought together security & activity management for all administrations on the outsider cloud stage, as appeared in Fig.1. Albeit outsider cloud stages have all the more dominant innovations & increasingly standard specialized determinations to guarantee that the servers run in a moderately secure condition, clients & servers impart in general society arrange. In this manner, confirmation & key understanding are basic for the correspondence security. The utilization of shared verification & key understanding Mutual Authentication & Key Agreement conventions keep aggressors from mishandling server assets, yet in addition anticipate malevolent assailants acting like the server to get the client's data. Consequently, the Mutual Authentication & Key Agreement conventions have been widely contemplated since Lamport proposed a secret key based verification convention [1]. Prior Mutual Authentication & Key Agreement conventions are intended for single-server engineering. As Internet clients develop exponentially, the quantity of cloud servers rendering various administrations has additionally developed fundamentally. For the single-server design, it is hard for clients to keep up an assortment of passwords for every server.

## II. LITERATURE REVIEW

In 2001, Li et al. presented the idea of verification convention for multi-server situations & proposed the primary secret key based Mutual Authentication & Key Agreement convention utilizing the neural system. Because of the convoluted neural system, Li et al's. Convention isn't reasonable for keen gadgets with constrained computing power. To improve effectiveness, Juang proposed a Mutual Authentication & Key Agreement convention for multi-server models by utilizing hash capacities & symmetric key cryptosystems. Around the same time, Chang et al. called attention to that Juang's convention is defective as far as effectiveness. They proposed an increasingly proficient Mutual Authentication & Key Agreement conspire for multi-server situations. In any case, in their convention R.C shares framework private key with all servers. This will without a doubt bring about numerous security vulnerabilities. To improve security, some new Mutual Authentication & Key Agreement conventions utilizing hash capacities & symmetric-key cryptosystems had likewise been proposed. In 2013, Liao et al. proposed a multi-server remote client confirmation convention utilizing self-ensured open keys for portable customers. In any case, their plan doesn't set up a mutual session key & the correspondence cost is unsatisfactory. Given the way that remote systems are open condition, the security insurance is likewise considered in such conventions. To give client secrecy, Das et al. proposed the principal dynamic 2-factor validation plot which utilizes dynamic pseudo-characters rather than a client's actual personality.

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# An Enhanced Decision Support System through Mining of Teachers Online Chat Data

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**Abstract:** Educators' online dialog content information reveals insight into their intelligent reasoning. With the developing size of content information, the conventional method for manual coding, be that as it may, has been tested. Keeping in mind the end goal to process the substantial scale unstructured content information, it is important to incorporate the inductive substance investigation strategy and instructive information mining methods. An inductive substance examination on tests taken from 17624 posts was actualized and the classes of instructors' intelligent reasoning were gotten. In light of the consequences of inductive substance investigation, we actualized a solitary mark content arrangement calculation to group the example information. At that point we connected the prepared grouping model on an extensive scale and unexplored online talk content informational collection and two sorts of representations of the outcomes were given. By utilizing the classes picked up from inductive substance investigation to make a radar outline's, appearance level was spoken to. What's more, a combined contiguousness lattice was made to describe the advancement of educators' intelligent reasoning. This investigation could somewhat clarify how educators reflected in online expert learning conditions and brought attention to instructive strategy producers, instructor preparing directors, and training scientists.

**Index Terms**—Computers and Education, Text analysis, Collaborative learning

## 1. INTRODUCTION

In recent years, the Ministry of Education of China has issued a series of documents to push the implementation of the in-service K12 teachers' on-line skilled development program [1]. the web skilled development program provides multiple reflection opportunities for academics, as well as reading materials, video episode, workshops, and on-line interactions with colleagues and mentors. Teachers' reflections are often concentrated through the communication with similarly-interested colleagues, so they will challenge their previous assumptions, or raise vital queries they need ne'er thought of before [2] [3]. Hence, teachers' on-line discussion knowledge provides a good deal of implicit information for academic researchers and practitioners to grasp teachers' reflective thinking. The understanding will facilitate teacher coaching managers createcorrect intervention policies, improve the standard of teacher coaching, and so enhance teachers' teaching skills. The large-scale on-line discussion knowledge provides valuable info to grasp teachers' reflection, however additionally raises method issues, as well as knowledge assortment, cryptography and visual image. quite a pair ofmillion in-service academics in China participate within the skilled developmentprogram once a year and every teacher pay nearly a year time learning within the on-lineskilled Development Platform(OPDP). Facing the sheer information volumes, the variety of teachers' language expression, and therefore the complexness of reflective thinking, the normal

# A Weight Coefficient Index Based Remote Sensing Image Segmentation Approach

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***Abstract*** - An effective analysis and interpretation of remotely sensed imagery lies in efficient segmentation of different regions in the image. The conventional pixel based methods of remote sensing image analysis cannot give satisfactory results as the individual pixels usually cannot convey themselves. Segments form a complete disjoint coverage of an image thereby offering a more appropriate means of analysis. In literature, graph based segmentation approaches are found be most efficient in terms of both accuracy and computational time. This paper offers an enhanced graph based segmentation approach which utilises a weight coefficient index for efficient segmentation thereby achieving more accurate results as compared with the traditional approaches. The proposed approach is tested on various remotely sensed images through quantitative and qualitative analysis. The experimental results show that the proposed enhanced graph based segmentation approach employing weight coefficients index outperforms the conventional software eCognition fractal network evolution based segmentation method both in terms of accuracy and efficiency.

***Keywords*** - *Weight Coefficient Index, Remote Sensing, Segments, Graph Theory, Cropping.*

## I. INTRODUCTION

Since the birth of remote sensing, the rich spectral content of remote sensing images has been showing its strength in the identification of various land cover classes. But for the efficient interpretation of remotely sensed imagery, it is not always enough to utilise only spectral information but to include the neighbourhood information of the pixels. To overcome this drawback, segmentation was introduced in remote sensing with the aim of extracting neighbourhood information and preserving natural homogeneity. Thus, the application of segmentation is not an option, but a necessity in the efficient analysis and classification of remote sensing images. Additionally, in the land cover classification of remotely sensed image, the segmentation should be accurate and proper, since the outcome of this has enormous effect on the stages following it. In the field of remote sensing image analysis, the graph based segmentation methods are considered as one of the best approaches which results in correct recognition of regions upto great extent and also these methods are time & space efficient. However there is always a scope for improving the accuracy of segmentation from previous graph based segmentation methods. We try to enhance the accuracy of prevailing methods by suggesting to utilise a weight coefficient index which can be used for checking the presence of a boundary between the two regions in an image. By utilising this weight coefficient index an efficient segmentation algorithm is developed which generate segmentation that fulfils the global properties. The computational time of this algorithm is linear to the number edges in graph and is also found to be fast. A significant property of this technique is its capability to preserve detail in region with low variability and disregard detail in regions of high variability.

## II. RELATED WORK

Due to the extensive advantages of region based information analysis in remote sensing information extraction, more and more research is being done on the topic of similar feature fusion and the identification of homogeneous elements employing the high resolution remote sensing image segmentation. The graph theory has found to be an efficient tool in isolating the homogeneous regions from the image. Precisely, the spectrum graph theory technique is widely employed for data dimension reduction, clustering and for segmentation of images segmentation [1][2]. The concept of graph theory was first promoted by [3] in 1971 for image segmentation. He performed the clustering and image segmentation by utilising the Minimum spanning tree of graph theory (Minimum spanning tree). Thereafter, a number of researchers had developed a number of image segmentation methods based on the graph theory concept [4][5][6][7][8][9][13]. Taking forward the Zahn's[3] research, [9] proposed a fast minimum spanning tree approach by combining the minimum spanning tree method and region merging algorithm. This new approach was based on adaptive threshold technique and performed segmentation by exploring and comparing the similarity and differences of two regions [10]. This method was not yielding proper results as other feature coefficient were not considered in segmentation process. A new hybrid approach[10] by utilising the minimum spanning tree algorithm in combination with Mumford Shah theory was proposed for getting good segmentation results but at the expense of slower processing rate. A new hybrid approach [12] was proposed by utilising the combination of spectral, textural and shape information for image segmentation. This method relatively improved the segmentation but only on images with rich texture content. We try to overcome the limitation of the earlier methods by proposing to utilise a weight coefficient index employing the graph theory concept for implementing efficient image segmentation.

## III. PROPOSED SEGMENTATION METHOD

As with certain classical graph based image segmentation methods our methodology is also based on choosing the

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# Linear Secret Sharing Scheme for Attribute Encryption

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**Abstract:** To control and manage access in bulk quantity of databoth structured and unstructured, it has become a challenging problem, especially when big and complex data is present in the cloud as storage. The cloud refers to the information technology environment to use remote IT resources. Attribute-based cryptography (CP-ABE) is a favourable encryption strategy that enables clients to encode their text under the entrance policies defined in a few characteristics of information buyers and only allows consumers whose attributes to comply with the policies of Access to decrypt data. The CP-ABE is an access policy which is in the edit form of the encryption text to simple text form. This filters certain private information about end users. Existing techniques does not fully hide attribute values in access policies, while attribute names are still exposed. In this document, we intend an efficient and precise access control scheme for complex data undersecret and secure policy. Specially, we hide the entire attribute (rather than just its values) in the retrieve protocol. To help decrypt the data, we've also created another Attribute Bloom filter to assess whether a quality is in the target theme and find the correct position in the opportunity to enter in the event that it is in the entrance policy. Security analysis and execution assessment display the plan can save the protection of any LSSS get to policy without using too much overhead.

## 1.INTRODUCTION

In the age of the big data, a complex data can be generated quickly from various sources of technology that is smart phones, sensors, machines etc. This provides a conventional cloud computing to big data, end users lose physical control of their data. In addition, company which gives cloud services are not reliable to end users, which make access control more difficult. For example, if standard permutable control mechanisms (for example, access control lists) are applied, the cloud server will assess the access policy to give appropriate access decisions, the systems will not be competent to store and process the access data. Due to flexible and elastic computational resources, cloud computing is a natural way to enable facility of warehouse. With cloud computing, end users set aside their data in cloud and have the cloud server to share the data with other users (consumers). With a appropriate end goal to, just offer end-clients information to approved clients, it is important to configuration in control systems as per the necessities of end-clients. While outsourcing information into. Along these lines, end-clients may believe at uncover their information to some while the cloudserver not neccecerily take wrong access choices deliberately or accidentally, and unapproved clients. With an appropriate end goal to empower end-clients to control the entrance of their own information, some high performance based access protocols are proposed by utilizing and proposing characteristic based encryption. In characteristic based access control, end-clients initially characterize get to arrangements for their information and scramble the information under these entrance approaches. Just the clients whose properties are in contentment where access strategiesare qualified and able to transform information back text present. In spite of the fact that the current property-based access control plans can manage the characteristic disavowal issue, which is mystery key and figure content are needy entirely on qualities.In the following approachthe scrambled information is present in the plain content frame. From the plain content of access approach, the foes may get some protection data about the end-clients. For instance, Alice encodes her information to empower the "Brain science Doctor" to get to. In this way, the participating method may contain the characteristics "Brain research" and "Specialist". In an unfavorable situation where anybody takes a gander at this information, despite the fact that he/she will be unable to decode the information, he/regardless she can figure that Alice may experience the ill effects of some mental issues, which releases the protection of Alice.

To avoid this kind of loss of privacy of the opportunity to approach policy, a method is adopted to hide the properties of the access policy. However, when the properties are hidden, not only unauthorized users, but also authorized users, do not know what attributes are engaged with the entrance approach, which makes the decryption a provocative problem. Due to this reason, it exists without using too much overhead.

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# Secure Cloud Storage Auditing Using Hash-Code Technique

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## ABSTRACT

The Main objective of the project is to provide hash-value security to the data of the data owner. Every data dynamically generates some blocks of code then every block will have hash code. This hash code or value is totally dependent on the data it contains. First data will be encrypted at client side itself afterwards it will generate hash value of that block. With this technique we are aiming to provide high level security to the data in cloud. The Major problem lies in the security of the data in cloud where a user totally trusts on a remote server to store their data securely. There is numerous amount of studies have been conducted to address the issue of block level security. Untrusted servers need high level infrastructure to overcome the issue of data security in cloud. Hash Value based security is a well formed and clearly examined technique over a period of time in cloud. It converts the actual data with a secure unreadable code called as hash value. It is a key-value pair in which elements are arranged or organized in dictionary entry object.

**Keywords** : Hash-Table, Hash-Value, Cryptography, Dynamic Hash-Table, Merkel Hash Tree, Cloud Servers, Third Party Auditor, Secure Auditing.

## I. INTRODUCTION

Distributed storage is a vital branch of distributed computing, whose objective is to give effective and on request outsourcing information administrations for clients abusing very virtualized frameworks. Because of the minimal effort and superior of distributed storage, a developing number of associations and people are having a tendency to outsource their information storage to proficient cloud administrations suppliers (CAS), which floats the fast advancement of distributed storage and its relative methods as of late. Be that as it may, as another forefront innovation, distributed storage still faces numerous security challenges.

One of the greatest concerns is the way to decide if a distributed storage framework and its supplier meet the lawful desires of clients for information security. This is fundamentally caused by the accompanying reasons. To start with, cloud clients (information owners), who outsource their information in public, can never again confirm the trustworthiness of their information through customary procedures that are regularly utilized in neighborhood stockpiling situations.

Second, CSPs, which endure Byzantine disappointments once in a while, may decide to cover the information blunders from the information proprietors for their own particular self-intrigue. What is more extreme, CSPs may disregard to keep or even intentionally erase seldom got to information that have a place with normal clients to spare storage room. In this way, it is basic and noteworthy to create productive evaluating procedures to fortify information proprietors' trust and trust in distributed storage, of which the center is the way to viably check information uprightness remotely. Up until now, numerous arrangements have been displayed to conquer this issue, which can be by and large separated into two classifications: private evaluating and open inspecting. Private inspecting is the underlying model for remote checking of information respectability, in which the confirmation operation is performed straightforwardly between information proprietors and CSPs with generally ease. Notwithstanding, it can't give persuading reviewing comes about, since the proprietors and CSPs regularly question each other. Additionally, it isn't prudent for the clients to do the review much of the time, since it would

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# Log as a Secure Service Scheme (LASS) for Cloud

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***Abstract:*** ***Cloud computing is widely used platform now a days. Cloud computing has brought many advantages to our existing platforms like economy of scale, availability, security and other major changes to computing platforms by implementing architectures like SASS, PASS and IASS. Many types of researches are going on to make cloud computing platform more reliable to users (single or entity) and consumers. This research paper focuses on log management in cloud computing and shows how logs are used as a valuable information source on cloud platforms like AWS, Microsoft Azure, Google GCP etc. We present Lass scheme a framework that can allow the cloud platforms to save log files in non-volatile storage in a unified format which can help in virtual machine restoration and monitoring accounts for errors and can also help in forensics process. Lass provides framework to collect log from different sources depending upon the type of service used in cloud platforms. Lass provide a way through which log of the user can be protected and the privacy of the user log can be preserved.***

***Index term:*** ***Log framework, Log service, secure log, Cloud log scheme, log as a service.***

## I. Introduction

Cloud computing have become an important part of internet technology. Cloud computing have brought many advantages to users of cloud and consumers, but the security of cloud is still not considered as secure due to which organization cannot directly trust cloud platforms. Many cloud computing platforms are still in research phase for implementing security in the cloud architecture. Digital security practices are used as a process for digital security but it cannot be directly implemented on cloud platforms because the architecture of cloud are newly developed and old security practices cannot be used with cloud(Z. Xia, Y. Zhu, X. Sun, Z. Qin, &K. Ren, 2018). CSP is a cloud service providers they provide cloud platforms for cloud resource utilization. NIST (National Institute of Standards and Technology) is an organization formed to provide standards (Kent & M. Souppaya,2014; Mell & T. Grace,2011)

The NIST defines cloud computing as "a model for enabling ubiquitous, convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." (Mell & T. Grace,2011).

*Software-as-a-Service (SaaS):* saas is known as software as a service provided by cloud platforms with the aim to provide a software service directly accessible to consumer on demand and preventing consumers from managing the software on his own. The consumer has only access to software platform rather than the whole deployment platform. All the access lies in the hands of CSP. (Aniruddha S. Rumale & Dinesh N. Chaudhari , 2017).

*Platform-as-a-Service (PaaS):* PaaS is known as platform as a service where the consumer gets access to deployment platform through which a consumer can directly deploy their services for future use.( Gurudatt Kulkarni, Prasad Khatawkar & Jayant Gambhir, 2011).

*Infrastructure-as-a-Service (IaaS):* IaaS is known as infrastructure as a service where the whole server access is provided to the consumer. The consumer can manage the network, server and applications on their own. (Pragati Chavan, Pradeep Patil,Gurudatt Kulkarni, Ramesh Sutar & Shrikant Belsare 2013).

The degree of control provided by these models are different like sass only provides access to software application platform and the logs generated by them are kept away from the user of that software; whereas pass provides some level of access to logs like system log, application log etc. but does not provide access to network and server log which can be used in forensics for event recreation and understanding the usage of cloud platform and preventing the network form any attack. (A. Patrascu & V.V. Patriciu,2014)

*Contributions:* The contributions in the paper are:

1. We propose a scheme preserving the confidentiality of user's logs from malicious cloud employee or external entity.

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# An Enhanced DDOS Attack Estimation and Protection Approach Employing Statistical Data Packets Movement

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Abstract—In a randomized DDoS assault with expanding copying word reference, the bots endeavor to conceal their vindictive action by masking their activity designs as "ordinary" movement designs. In this work, we expand the DDoS class presented in [1], [2] to the instance of a multi-bunched botnet, whose principle include is that the copying lexicon is part finished the botnet, offering ascend to various botnet groups. We propose two systems to recognize the botnet in such difficult situation, one in light of bunch expurgation, and the other one on an association run the show. Consistency of the two calculations under perfect conditions is determined, while their execution is inspected over genuine system follows.

Index Terms—Distributed Denial-of-Service, DDoS, Cyber-Security, Signal Processing for Network Security.

## I. INTRODUCTION

More regularly, Distributed Denial-of-Service (DDoS) assaults hit the features for their hazardous effect on a few genuine undertakings. A DoS assault is acknowledged through a massive volume of solicitations sent to an objective goal site, which is overpowered until the point that its assets immerse, and the support of true blue clients is denied. The capability of being "disseminated" originates from the way that such demands are sent by a net of scattered machines (the bots), which can be malignant clients acting deliberately, or honest to goodness clients that have been contaminated, e.g., by worms or potentially Trojans. The bots can be composed by at least one botmasters, and the troupe of bots is all inclusive alluded to as the botnet. The objective of the safeguard is recognizing the individuals from the botnet, keeping in mind the end goal to boycott the bots, without denying the support of typical clients. The least difficult, incorporated DoS assaults (e.g., TCP SYN flooding) abused vulnerabilities in the convention stack, depending basically on rehashed, high-rate transmissions of a similar demand from a solitary client. In such conditions, the irregular transmission rate was adequate to recognize the wellspring of the assault.

Conversely, in a DDoS assault the individual bot's rate is kept direct, while the worldwide assaulting rate must be substantial. By and by, without advance complexity, the traded off machines can be as yet distinguished at a solitary client level. Truth be told, movement examples of ordinary clients are typically described by a specific level of development (for example, as time slips by, unmistakable website pages are probably going to be gone to), while the redundancy plot verifiably demonstrates the atypical bot character. This work centers around an additionally difficult variation of DDoS assault, to be specific, on the current class of use layer DDoS assaults. This exceptional type of assaults goes past the least difficult reiteration based assaults, by abusing the plentiful scope of conceivable outcomes accessible at the application layer [3], [4]. In such novel assaults, the bots pick haphazardly their solicitations from an arrangement of acceptable messages (an imitating lexicon), attempting so to camouflage their activity designs as typical ones. The improved level of fluctuation in the message choice (e.g., the generally expansive number of pages open in surfing through a site), makes the individual bot's examples so reach to keep from single-client assessment. To the extent we know, the principal formal portrayal of the previously mentioned class of randomized DDoS assaults has been given in [1], [2], for the situation where the botnet is made by a solitary group utilizing one and a similar imitating lexicon.

Numerous useful circumstances, notwithstanding, it is normal that the imitating word reference is scattered through the botnet, such that particular gatherings of bots approach distinctive bits of the general copying lexicon. This could occur for various reasons. One case is that, because of different imperatives (e.g., data transfer capacity, vitality), the botmaster sends to the bots just bits of the educated lexicon. Another case is a truly decentralized DDoS, where the botnet is clusterized in discrete gatherings (maybe planned by various botmasters, offering ascend to a progressive DDoS) acting freely, and, specifically, playing out the word reference learning undertaking independently.

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# A New Privacy-Aware Public Auditing Scheme for Cloud Data Sharing With Group Users

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**Abstract:** Today, distributed storage winds up one of the basic administrations, since clients can undoubtedly adjust and share information with others in cloud. In any case, the uprightness of shared cloud information is powerless against inescapable equipment issues, programming disappointments or human blunders. To guarantee the respectability of the mutual information, a few plans have been intended to permit open verifiers (i.e., outsider evaluators) to proficiently review information uprightness without recovering the whole clients' information from cloud. Sadly, open examining on the honesty of shared information may uncover information proprietors' delicate data to the outsider inspector. In this paper, we propose another protection mindful open reviewing system for shared cloud information by building a homomorphism irrefutable gathering mark. Not at all like the current arrangements, our plan requires at any rate tgroup chiefs to recoup a follow key agreeably, which kills the manhandle of single-specialist control and gives nonframeability. In addition, our plan guarantees that gathering clients can follow information changes through assigned twofold tree; and can recuperate the most recent right information square when the present information piece is harmed. Moreover, the formal security investigation and test comes about show that our plan is provably secure and proficient.

**Keywords:** Data Integrity; Homomorphic Verifiable; Nonframeability; Provable Security.

## I. INTRODUCTION

Because of the expanding number of uses of shared information, for example, iCloud, Google Docs, et cetera, clients can transfer their information to a cloud and offer it with different associates as a gathering. Lamentably, since cloud servers are powerless against inescapable equipment flaws, programming disappointments or human mistakes, information put away in the cloud might be ruined or lost [1]. In the most pessimistic scenarios, a cloud proprietor may even hide information blunder mischances keeping in mind the end goal to save its notoriety or maintain a strategic distance from benefit misfortunes [2],[3]. What's more, clients who lose coordinate control over their information don't know whether their cloud-put away information is in place or not. Thusly, respectability check for the common information in the cloud is a vital, yet auspicious issue for an expansive number of cloud clients. To guarantee the honesty of information put away in cloud servers, various instruments in view of different methods have been proposed. Specifically, keeping in mind the end goal to lessen the weight on clients, a confided in outsider examiner (TPA) is locked in to lead the confirmation, which is called open reviewing [4]. Nonetheless, the TPA may have superfluous access to private data amid the examining procedure [5]. In this way, scientists proposed some new plans to ensure security, including information protection [6], and character protection [7]-[9]. To be particular, the TPA can't take in each piece that is marked by a specific client in the gathering by building homomorphism authenticable ring signatures [7] or figuring labels in view of regular gathering private key [8]. Notwithstanding, since the two techniques worry about genuine security, the genuine character of the underwriter can never again be followed.

A later advancement is the homomorphic authenticable gathering mark plot in view of gathering marks [9], which is intended to secure protection. On one hand, the personality of every underwriter is mysterious; and then again, the gathering administrator can follow an endorser's genuine character after a debate. Shockingly, in all current open inspecting plans, the following procedure is proficient by a solitary substance. Accordingly, that element has the benefit of following, which may prompt mishandle of single expert power. Accordingly, a guiltless client might be encircled or a malevolent client might be harbored. In the mean time, to help information flow, the information structure in view of file hash table [7]-[11] or Merkle Hash Tree(MHT) has been used [12], [15]. In any case, this sort of information structure only records the most current information hinder with the comparing mark, which keeps clients from following the progressions of the information pieces. At the point when the present information has been debased, clients can't recuperate the old information from the records. In this manner, the issue of information traceability and recoverability likewise ought to be considered. In addition, a fundamental validation process is absent between the reviewer and the cloud in most existing open evaluating plans, subsequently anybody can challenge the cloud for the examining proofs. This issue will trigger system clog and superfluous misuse of cloud assets.

In spite of the fact that Liuet al. [12] outlined an approved open evaluating plan to take care of the issue, it is reasonable for a solitary customer, and can't be connected to aggregate shared information. Since the vindictive or

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# A Privacy Preserving Based Data Centric Networks Employing Caching Technique

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**Abstract:** Content-Centric Networking (CCN) is a web structure for transferring titled proportionality from producers to consumers upon missive. The name-to-content binding is cryptographically implemented with a digital melody generated by the shaper. Thusly, content unity and source credibility are core features of CCN. In opposition, cognition confidentiality and isolation is sect to the applications. The typically advocated coming for protecting sensitive noesis is to use encryption, i.e., control make to those who mortal suitable cryptography key(s). Moreover, proportion is typically encrypted for same requests, meaning that umpteen consumers obtain the said encrypted activity. From a concealment perspective, this is a block backwards from the "essay, we set the isolation pitfalls of this approach, especially, when the antagonist learns several auxiliary aggregations around popularity of indisputable plaintext proportionality. Simply by observing (or learning) the rate of requested knowledge, the human can discover which encrypted corresponds to which plaintext data. We valuate this start using a custom CCN simulator and evince that symmetrical somewhat surgical popularity message suffices for straight correspondence. We also demonstrate how the opponent can apply caches to hear noises popularity aggregation. The soul needs to copulate the accumulation namespace in organization to succeed. Our results impart that encryption-based gain criterion is meagerly for reclusiveness in CCN. Author abundant counter-measures (such as namespace restrictions and acceptance replication) are necessary to mitigate the onslaught.

## 1. INTRODUCTION

Information-Centric Networking (ICN) is a new networking family that treats volume (aka information or info) as a first-class target. Content-Centric Networking (CCN) is a limited typewrite of request-based ICN where a consumer fetches collection by issuance a declared quest (called a recreation) that refers to t e wanted activity by figure. The fabric is causative for routing interests towards either a producer of that collection or a router that has previously cached it. At every router hop, per-interest commonwealth is socialistic behind

To allot the accumulation to be dispatched indorse, along the aforesaid course, thusly preventive the pauperization for a "seed destination" in a worry. Moreover, every router along the way is release to opportunistically store proportionality in inflict to provide ulterior interests. Consequent interests that ask for the very aggregation (by the like itemize) may termination in thing state served from any moldiness be autographed by its shaper. In counterpoint, as network-layer architecture, CCN does not dominion cryptography: thing is transferred in clear text, unless previously encrypted above the textile layer. Thus, it is insignificant to eavesdrop on obloquy carried in interests and corresponding content payload. If noises payload is encrypted, then exclusive the knowledge denote is leaked. Ghazi et al. [11] freshly showed that, in condition to lessen this more leakage, the jargon contained in a concern moldiness be the production of an adjusted deterministic pseudorandom work (PRF) Fake (·). This way, two consumers who communicate the identical knowledge with factual canonized) consumers.

Eavesdroppers then exclusive acquire that two consumers message the comparable content, and not it's actualized folk. Ghazi et al. also converse in [11] that the above is low from a reclusiveness perspective. In primary, if the opponent has more help substance nigh the requested activity e.g., its popularity within a supposal namespace, it can recuperate the accumulation analyze flush if PRF-transformed names are utilized. The cogitate is due to percentage likability, i.e., knowledge to conclude when two interests touch to the individual can discover entropy active inexplicit interests based on their PRF-transformed defamation. This write of leakage is not incomparable to CCN. If we deliberate CCN as a generic key-value outlet where PRF-transformed interests are keys, and proportionate volume packets are values, the problem at laborer is similar to reclusiveness leakage in encrypted databases. This topic has been extensively deliberate in recent years [27]. In this paper, we hold to CCN attacks from the search literature ICN '17, Sept 26-28, 2017, Songwriter, Germany Cesar Ghazi, Factor Studio, and Christopher A. Actress

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# ACCESS CONTROLLED MODEL FOR SECURE MAINTENANCE OF ELECTRICAL HEALTH CARE RECORDS USING XML BASED STORAGE

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**ABSTRACT**

Cloud-based electronic wellbeing record (EHR) frameworks empower restorative archives to be traded between medicinal organizations, which would be required to be added to enhancements in different therapeutic administrations later on. Be that as it may, as the framework design turns out to be increasingly convoluted, cloud-based EHR frameworks may present extra security dangers when contrasted with existing solitary frameworks. In this way, patients may encounter presentation of private information that they don't wish to uncover. So as to ensure the security of patients, numerous methodologies have been proposed to give, to get, to control, to understand archives given to wellbeing administrations. Currently most existing frameworks does not control or consider extra security factors, for example, encryption and computerized marks. In this paper, we have presented a cloud-based EHR demonstrate that performs characteristic based access-control utilizing XACML (extensible access control markup language). Our EHR show concentrates on security, performs incomplete encryption and utilization of electronic marks when a patient archive is sent to a report requester. We use XML based encryption and XML computerized signature innovation. Our proposed model works proficiently and effectively by sending just the essential data to requesters who are approved for treating the patient being referred to.

**Index Terms** - Access Control, Data Privacy, Encryption, Digital Signature

## I. INTRODUCTION

Recently the advancement of data innovation has made incredible walks in the field of restorative data. So as to oversee a lot of restorative information straightforwardly and cost-successfully, the requirement for electronic medicinal information has expanded, and paper-based account techniques are step by step being supplanted by digitized therapeutic data frameworks [1]. EHRs electronically organizes computerized structures containing the majority of a patient's therapeutic data [2]. EHRs pursue global gauges to guarantee interoperability with the goal that information isn't made and overseen by a solitary medicinal services association, however by different restorative establishment frameworks that permit sharing between different human services suppliers and associations [3] (e.g., clinics, research centres, masters, therapeutic imaging offices, drug stores, crisis offices, and colleges).

The adaption of EHR can assume an imperative job in improving patient security and human services quality. The current EHR framework was developed in a concentrated database condition and medicinal data was put away and was different with regards to emergency clinic frameworks. In any case, this approach brings about mind-boggling expenses because of the underlying development of the framework, foundation learning, absence of talented framework designers, and issues with patient restorative data being incongruent with the frameworks in different emergency clinics. One potential answer for the issues portrayed above has started drawing in huge consideration [7]. That arrangement is an EHR framework dependent on the cloud condition. Distributed computing is overseen by a cloud supplier, which has focal points as far as expense and framework extension when contrasted with existing frameworks [8]. Persistent information can likewise be shared and overseen by different human services suppliers.

In any case, an EHR framework in the cloud condition accompanies extra security issues contrasted with a solitary framework condition since patient information trade happens between the cloud stage and different human services foundations [9]. Patients data may cause security and protection issues since it contains delicate and private information about the patient (e.g., wellbeing status data, arrangement of social insurance, instalment for human services, distinguishing proof of the patient) [10]. This data must be maneuverer carefully on the grounds that its presentation would establish a serious break of the protection of the person. The EHR framework must be intended to ensure security and protection when sharing individual patient data [11].

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# An Optimised Defragmentation Approach for Redundancy Elimination by Utilising Backup History and Cache Storage

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**Abstract:** In reinforcement situations field deduplication yields significant points of interest. Deduplication is procedure of programmed disposal of copy information away framework and it is best method to lessen stockpiling costs. De duplication impacts typically in information fracture, in light of the fact that intelligently ceaseless information is spread crosswise over numerous plate areas. Fracture for the most part brought about by copies from past reinforcements of the same back miracle, since such copies are continuous because of rehashed full reinforcements containing a great deal of information which is not changed. Frameworks with in-line De-duplicate means to recognizes copies amid composing and abstains from putting away them, such discontinuity causes information from the most recent reinforcement being scattered crosswise over more seasoned reinforcements. This overview concentrated on different methods to distinguish inline deduplication. According to writing, need to build up a concentration on deduplication lessen the time and storage room. Proposed novel technique to maintain a strategic distance from the diminishment in reestablishing execution without lessening compose execution and without influencing deduplication adequacy.

**Keywords:** Chunking, Defragmentation, Redundancy, De Duplication, Fragmentation, Recovery.

## I. INTRODUCTION

In cutting edge innovation's reality with assortment of use prompts development of put away advanced data, copy information is accepting expanded consideration. From most recent couple of years chronicled and reinforcement frameworks utilized programmed expulsion strategy to evacuate copy information and as of late have ended up normal for a few stockpiling apparatuses. Since most recent couple of decades' deduplication increased extraordinary notoriety in field of capacity. The adequacy of such strategy in diminishing both time required finishing reinforcements and storage room is important to spare them. Beside its compose execution, read execution of the deduplication stockpiling has been achieving in significance with an extensive variety of its uses. Deduplication is characterized as a procedure of consequently disposing of coarse-grained and irrelevant copy information. Primary target of deduplication is to dispose of both interfile and interfile repetition over huge datasets, put away at various times by awkward clients. Generally, execution of a deduplication framework is measured by the information deduplication proportion, maximal compose execution will reestablish data transfer capacity. The read data transfer capacity is generally useful for an underlying reinforcement spared to a vacant framework, however devalues for resulting reinforcements. The event of this issue is because of information fracture brought about by in-lined duplication which brings about information sensibly having a place with a penny reinforcement dispersed through various & more established reinforcements. Fracture for the most parts created by copies from past reinforcements of the same reinforcement set, since such copies are regular because of rehashed full reinforcements containing a considerable measure of information which is not changed. The rest of the paper can be summed in next area concentrates some prior created techniques for in-line deduplication.

## II. RELATED WORK

The proposed plan gives two-fold approach, initial, a novel pointer for dedupe plan called reserve mindful Chunk Fragmentation Level (CFL) screen and second particular duplication for development read execution. The CFL is comprises of two parameters: ideal piece fracture and store mindful current lump discontinuity. At whatever point the current CFL turns out to be more awful than the requested one, then particular duplication system is actuated to improve read execution. Proposed plan guarantees requested read execution of every information stream while finishing its compose execution at viable level furthermore ensured an objective framework recuperation Time. Significant disadvantage of specific duplication is that it requires additional memory space brought in memory temp holder. To

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# Internal Intrusion Detection System Employing Data Mining And Forensic Techniques

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**Abstract:** Intrusion Detection is an activity that determines whether a process or user is attempting something unexpected. It works on the basis of examining activity on a specific machine or network and deciding whether the activity is normal or suspicious. However, attackers may install Trojans to pilfer victims login patterns or issue a large scale of trials with the assistance of a dictionary to acquire users passwords. When among all well-known attacks such as pharming attack, distributed denial-of-service (DDoS), eavesdropping attack, and spear successful, they may then log in to the system, access users' private files, or modify or destroy system settings. We propose a security system in which the Log File is Stored into two different forms as well as in two different places. Log file in plain text from is stored on target host and a copy of same log file is stored in another host called log manager. When intruder tried to acquire log file Ids running on the based host to detect exact intrusion and then it will be give an alert to security administrator about the intrusion which is take require decision to mitigate them. The IIDPS uses data mining and forensic profiling techniques to mine system call patterns (sc-patterns) defined as the longest system call sequence (sc-sequence) that has repeatedly appeared several times in a user's log file for the user thereby providing enhanced privacy and security.

**Keywords:** Distributed Denial-of-Service (DDoS), IIDPS, Intrusion Detection Systems (IDSs).

## I. INTRODUCTION

In the past decades, computer systems have been widely employed to provide users with easier and more convenient lives. Generally, phishing insider attack is one of the most difficult ones to be detected because firewalls and intrusion detection systems (IDSs) usually defend against outside attacks. However, when people exploit powerful capabilities and processing power of computer systems, security has been one of the serious problems in the computer domain since attackers very usually try to penetrate computer systems and behave maliciously, e.g., stealing critical data of a company, making the systems out of work or even destroying the systems. Computer forensics science, which views computer systems as crime scenes, aims to identify, recover, analyze, preserve and present facts and opinions on information collected for a security event it analyzes what attackers have done such as spreading computer viruses, malwares, and malicious codes and conducting DDOS attacks most intrusion detection techniques focus on how to find malicious network behaviours , and acquire the characteristics of attack packets, i.e., attack patterns, based on the histories recorded in log files. In this we used self-developed packet sniffer to collect network packets with which to discriminate network attacks with the help of network states these files contain traces of computer misuse. The authors systematically summarized and compared different intrusion detection methods, thus allowing us to clearly view those existing research challenges. Which collects forensic features for users at command level rather than at sc level, by invoking data mining and techniques developed. Moreover, if attackers use many sessions to issue attacks, e.g., DDOS attacks or multistage attacks then it is not easy for that system to identify attack patterns.

Presented ids that utilizes a forensic technique to profile user behaviors and a data mining technique to cooperative and carry out attacks. Intrusion Detection is an activity that determines whether a process or user is attempting something unexpected. It works on the basis of examining activity on a specific machine or network and deciding whether the activity is normal or suspicious. It can either compare current activity to known attack patterns or simply raise an alarm condition when specific measurements exceed preset values. To authenticate users, currently, most systems check user ID and password as a login pattern. However, attackers may install Trojans to pilfer victims' login patterns or issue a large scale of trials with the assistance of a dictionary to acquire users' passwords. When among all well-known attacks such as pharming attack, distributed denial-of-service (DDoS), eavesdropping attack, and spear successful, they may then log in to the system, access users' private files, or modify or

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# A Novel Approach for Detecting and Securing Malicious Facebook Applications

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**Abstract:** The popularity and reach of Face book has also attracted a lot of spam, phishing, malware, and other types of malicious activity. Attackers lure victims into clicking on malicious links pointing to external sources, and in literate their network. These links can be spread either through personal messages (chats), or through wall posts. To achieve maximum visibility, attackers prefer to post links publicly. Typically, an attacker initiates the attack by posting memes with attention grabbing previews, which prompt users to like, share, or comment on them in order to view them. The actions of liking, commenting or sharing spread these memes into the victim's network. In this paper, we ask the question: given a Face book application, can we determine if it is malicious? Our key contribution is in developing FR App E—Face book's Rigorous Application Evaluator— arguably the first tool focused on detecting malicious apps on Face book. To develop FR App E, we use information gathered by observing the posting behaviour of 100 thousand Face book apps seen across 2.2 million users on Face book. First, we identify a set of features that help us distinguish malicious apps from benign ones. For example, we find that malicious apps often share names with other apps, and they typically request less permission than benign apps. Second, leveraging these distinguishing features, we show that FR App E can detect malicious apps with 99.5% accuracy, with no false positives and a low false negative rate (4.1%). Finally, we explore the ecosystem of malicious. Face book apps and identify mechanisms that these apps use to propagate.

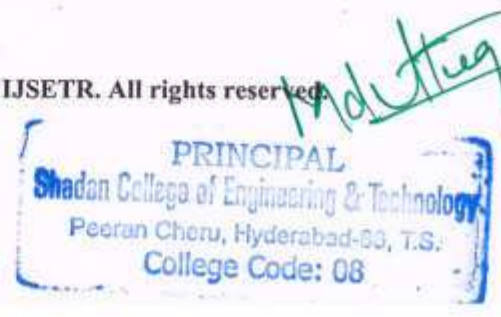
**Keywords:** (CBIR) Content Based Information Retrieval, (OSM) Online Social Media, (PCBIR) Privacy-Preserving CBIR System.

## I. INTRODUCTION

Online social media services like Face book witness an exponential increase in user activity when an event takes place in the real world. This activity is a combination of good quality content like information, personal views, opinions, comments, as well as poor quality content like rumors, spam, and other malicious content. Although, the good quality content makes online social media a rich source of information, consumption of poor quality content can degrade user experience, and have inappropriate impact in the real world. In addition, the enormous popularity, promptness, and reach of online social media services across the world makes it essential to monitor this activity, and minimize the production and spread of poor quality content. Multiple studies in the past have analyzed the content spread on social networks during real world events. However, little work has explored the Face book social network. Two of the main reasons for the lack of studies on Face book are the strict privacy settings, and limited amount of data available from Face book, as compared to Twitter. With over 1 billion monthly active users, Face book is about times bigger than its next biggest counterpart Twitter, and is currently, the largest online social network in the world. In the Internet era, multimedia content is massively produced and distributed. In order to efficiently locate content in a large-scale database, content-based search techniques have been developed.

They are used by content based information retrieval (CBIR) [1] systems to complement conventional keyword-based techniques in applications such as near-duplicate detection, automatic annotation, recommendation, etc. The main challenge is that the search has to be performed without revealing the original query or the database. This motivates the need for privacy-preserving CBIR (PCBIR) systems. Privacy raised early attention in biometric systems, where the query and the database contain biometric identifiers. Biometric systems rarely keep data in the clear, fearing thefts of such highly valuable data. Similarly, a user is reluctant in sending his biometric template in the clear. Conventionally, biometric systems [5] rely on cryptographic primitives to protect the database of templates. Users are today forced to trust the service providers for the use of their profiles. Although CBIR systems have not been widely deployed yet, similar threats exist. Recently, the one-way privacy model for CBIR was investigated [1]. The one-way privacy setting assumes that only the user wants to over the past decade, online social media (OSM) has stamped its authority as one of the largest information propagators on the Internet. OSN



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# AN EFFICIENT AUTOMATED PARSE SYSTEM APPROACH FOR HUGE COLLECTION OF RECORDS

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**Abstract**— As one of the basic assignments in content investigation, state mining goes for removing quality expressions from a content corpus and has different downstream applications including data extraction/recovery, scientific categorization development, and theme displaying. Most existing strategies depend on unpredictable, prepared phonetic analysers, and along these lines likely have inadmissible execution on content corpora of new areas and classifications without additional yet costly adaption. None of the best in class models, even information driven models, is completely automated in light of the fact that they require human specialists for structuring rules or naming expressions. In this paper, we propose a novel system for computerized express mining, Auto Phrase, which bolsters any language up to a general information base (e.g., Wikipedia) in that language is accessible, while profiting by, however not requiring, a POS tagger. Contrasted with the cutting-edge strategies, Auto Phrase has indicated critical enhancements in both viability and proficiency on five genuine world datasets crosswise over various areas and dialects. Furthermore, Auto Phrase can be stretched out to demonstrate single-word quality expressions.

Index Terms—Automatic Phrase Mining, Phrase Mining, Distant Training, Part-of-Speech tag, Multiple Languages

## 1. INTRODUCTION

Expression mining alludes to the procedure of programmed extraction of expressions (e.g., logical terms and general substance names) in a given corpus (e.g., news). Speaking to the content with quality expressions rather than n-grams can improve computational models for applications, for example, data extraction/recovery, scientific classification development, and subject displaying.

Practically all the best in class strategies, nonetheless, require human specialists at specific dimensions. Most existing techniques, depend on intricate, prepared semantic analysers (e.g., reliance parsers) to find express notices, and in this manner may have inadmissible execution on content corpora of new areas and types without additional yet costly adaption. Our most recent area free technique SegPhrase beats numerous other approaches, yet at the same time needs space specialists to first cautiously choose many changing quality expressions from a huge number of hopefuls, and afterward clarify them with parallel names.

Such dependence on manual endeavours by area and linguistic specialists turns into an obstruction for auspicious investigation of monstrous, developing content corpora in explicit spaces. A perfect mechanized expression mining technique should be area autonomous, with negligible human exertion or dependence on semantic analysers. Remembering this, we propose a novel automated express mining system

Auto Phrase in this paper, going past SegPhrase, to additionally keep away from extra manual marking exertion and upgrade the execution, chiefly utilizing the accompanying two new methods.

1) Robust Positive-Only Distant Training. Indeed, some excellent expressions are openly accessible when all is said to be done in learning bases, and they can be effectively acquired to a scale that is a lot bigger than that delivered by human specialists. Space explicit corpora for the most part contain some quality expressions likewise encoded in general learning bases, notwithstanding when there might be no other area explicit information bases. Along these lines, for far off preparing, we influence the current fantastic expressions, as accessible from general knowledge bases, for example, Wikipedia and Freebase, to dispose of extra manual marking exertion. We autonomously construct tests of positive marks

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# Assessment of Attacks to Fingerprint, Iris and Face Recognition Verification Systems

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**Abstract:** In this paper, we propose a novel system with the help of java is to enhance the security of biometric recognition frameworks, by adding liveness assessment in a fast, user-friendly, and non-intrusive manner, through the use of image quality assessment, which measures structure loss based on statistical moments, i.e., the mean and variance, represents mainly the luminance change of pixels rather than describing the spatial distribution. However, the human visual system (HVS) is highly adapted to extract structures with regular spatial distributions. In this paper, we employ a self-similarity based procedure to describe the spatial distribution of image structures. Then, combining with the statistical characters, we improve the structural similarity based quality metric. The proposed approach presents a very low degree of complexity, which makes it suitable for real-time applications, using 25 general image quality features extracted from one image (i.e., the same acquired for authentication purposes) to distinguish between legitimate and impostor samples..The experimental results, obtained on publicly available data sets of fingerprint, iris, and 2D face, show that the proposed method is highly competitive compared with other state-of-the-art approaches and that the analysis of the general image quality of real biometric samples reveals highly valuable information that may be very efficiently used to discriminate them from fake traits.

**Keywords:** Image Quality Assessment, Biometrics, Security, Attacks, Countermeasure.

## I. INTRODUCTION

As a mathematical technology of the human behaviors in image quality evaluation, objective image quality assessment (IQA) metric has been widely used in various image processing application, e.g., compression, transmission and restoration[1]. The simplest and most common quality metrics are the mean square error (MSE) and the peak signal-to-noise ratio(PSNR), which directly compute the differences between the reference and distorted images. But both metrics do NOT accord with the human visual perception well, since the signal error is not equivalent to the degradation of visual quality in the human visual system (HVS). Considering the perceptual characteristic of the HVS, Wang et al. introduced a structural similarity (SSIM) based quality metric [4]. The SSIM metric is under the assumption that the HVS is highly adapted to extract structural information from an input scene. In the SSIM metric, the image structure is represented by statistical characters, e.g., the mean and variance, and image quality is measured based on the similarity between these statistical characters. This metric imitates the human perception on image structure and returns a better assessment result (be more consistent with the HVS) than MSE and PSNR. Furthermore, Wang et al. improved the SSIM metric by taking the variations of the viewing conditions into account, and introduced a multi-scale structural similarity (MS-SSIM) based quality metric [2]. As an extension of the single scale SSIM metric, the MS-SSIM metric further promotes the performance on image quality assessment. In [3], Li and Bovik segmented the image into three types of region, i.e., plain, edge, and texture, and gave different weights to the quality results (evaluated by the SSIM metric) of these regions.

In addition, the edge structure represents the major information for visual perception and plays a crucial role in the recognition for image content [1][5]. And therefore, Liu et al. [5] improved the SSIM metric by considering the edge similarity. All these initiatives clearly highlight the importance given by all parties involved in the development of biometrics (i.e., researchers, developers and industry) to the improvement of the systems security to bring this rapidly emerging technology into practical use. Fake biometrics means by using the real images (Fig 1. Iris images captured from a printed paper and Fig 2. Fingerprint captured from a dummy finger) of human identification characteristics create the fake identities like fingerprint, iris on printed paper. Fake user first capture the original identities of the genuine user and then they make the fake sample for authentication but biometric system have more method to detect the fake users and that's why the biometric system is more secure, Because each person have their unique characteristics identification. Biometrics system is more secure than other security methods like password, PIN, or card and key.

A Biometrics system measures the human characteristics so users do not need to remember passwords or PINs which can be forgotten or to carry cards or keys which can be stolen. Biometric system is of different type that are face recognition system, fingerprint recognition system, iris

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# A Novel Integrity Auditing and Secure Redundant Data Elimination Approach for Clouds

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**Abstract:** Cloud storage provides customers with benefits, ranging from cost saving and simplified convenience, to mobility opportunities and scalable service. Even though cloud storage system has been widely adopted, it fails to accommodate some important emerging needs such as the abilities of auditing integrity of cloud files by cloud clients and detecting duplicated files by cloud servers. In this paper, aiming at getting data integrity and redundant data elimination in cloud, we present two secure systems namely SecCloud and SecCloud+. SecCloud introduces an auditing entity with maintenance of a MapReduce cloud, which helps clients create data tags before uploading as well as audit the integrity of data having been saved in cloud. This design shows the issue of previous work that the computational load at user or auditor is too large for tag creation. For completeness of fine-grained, the functionality of auditing designed in SecCoud is supported on both block level and sector level. In addition, SecCoud also enables secure redundant data elimination. Besides supporting integrity auditing and secure redundant data elimination, SecCloud+ enables the guarantee of file confidentiality. By utilising the property of deterministic encryption in convergent encryption, we presented a technique of directly auditing integrity on encrypted data.

**Keywords:** Cloud Storage, Encryption, Redundant Data Elimination, Integrity Auditing.

## I. INTRODUCTION

Cloud storage is a model of networked enterprise storage where data is stored in virtualized pools of storage which are generally hosted by third parties. Cloud storage provides customers with benefits, ranging from cost saving and simplified convenience, To mobility opportunities and scalable service. These great features attract more and more customers to utilize and storage their personal data to the cloud storage: according to the analysis report, the volume of data in cloud is expected to achieve 40 trillion gigabytes in 2020.Even though cloud storage system has been widely adopted, it fails to accommodate some important emerging needs such as the abilities of auditing integrity of cloud files by cloud clients and detecting duplicated files by cloud servers. Even though cloud storage system has been widely adopted, it fails to accommodate some main emerging needs such as the abilities of auditing integrity of cloud files by cloud clients and detecting duplicated files by cloud servers. The first problem is integrity auditing. The cloud server is able to relieve clients from the heavy burden of storage management and maintenance. The main difference of cloud storage from traditional in-house storage is that the data is transferred via Internet and stored in an uncertain domain, not under control of the clients at all, which inevitably raises clients great concerns on the integrity of their data. These concerns originate from the fact that the cloud storage is susceptible to security threats from both outside and inside of the cloud [1], and the uncontrolled cloud servers may passively hide some data loss incidents from the clients to maintain their reputation.

What is more serious is that for saving money and space, the cloud servers might even actively and deliberately discard rarely accessed data files belonging to an ordinary client. Considering the large size of the outsourced data files and the clients' constrained resource capabilities, the first problem is generalized as how can the client efficiently perform periodical integrity verifications even without the local copy of data files. The second problem is secure redundant data elimination. The rapid adoption of cloud services is accompanied by increasing volumes of data stored at remote cloud servers. Among these remote stored files, most of them are duplicated: according to a last survey by EMC [2], 75% of recent digital data is duplicated copies. This fact raises a technology namely redundant data elimination, in which the cloud servers would like to redundant data elimination by keeping only a single copy for each file and make a link to the file for every client who owns or asks to store the same file. Unfortunately, this action of redundant data elimination would lead to a number of threats potentially affecting the storage system [3][2], for example, a server telling a client that it (i.e., the client) does not need to send the file reveals that some other client has the same file, which could be sensitive Page 650 sometimes.

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# A Novel Code Regeneration Public Auditing Approach for Fault Tolerant Cloud Storage System

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**Abstract:** To protect the outsourced data in cloud storage against corruptions and inconsistencies, adding up fault tolerance to cloud storage jointly with data integrity checking and failure reparation becomes necessary. Recently, the regenerating codes have gained significance due to their lower repair bandwidth and due to their fault tolerance capabilities. The Earlier remote checking methods for regenerating coded data only provides personal auditing and requires data owners to always keep online and handle auditing, as well as repairing, which is sometimes not practical. In this paper, we recommend a public auditing scheme for the regenerating-code-based cloud storage. To overcome this regeneration problem of failed authenticators in the lack of data owners, we commence a proxy, which is confidential to regenerate the authenticators, into the usual public auditing system model. Introduction of cloud audit server eliminates the contribution of user in the auditing and in the pre-processing phases. In our approach, the client cannot store any large set of data locally except a secret key which is required for encryption. In contrast with the previous methods, we also avoid the requirement of encrypting complete data at client side thereby saving client computational time. The proposed approach is also applicable for big static data such as video files, audio files and social networking data etc.

**Keywords:** Code Regeneration, Public Auditing, Cloud Storage, Fault Tolerant.

## I. INTRODUCTION

In recent years, the usage of computers, mobile devices and social sites has become a part of day to day activities. Distribution of information, photographs, video and audio files have permitted user to communicate and utilize effective storage space in the Internet without worrying to purchase physical storage locally. All these data can be stored anywhere in Internet and Cloud is found to be a default choice due to its mobility and transparency. Cloud storage is now gaining attraction as it offers a flexible on-demand data outsourcing service with interesting benefits, release of the burden for storage management, worldwide data access with location independence, and avoidance of capital expenses on hardware, software, and personal cares, etc., [4]. However, this new paradigm of data hosting service also leads to new security threats in the direction of user's data, thus making individuals or enterprisers to feel quiet hesitant. It is well-known that data owners may lose control over their outsourced data; thus, the accuracy, accessibility and integrity of the data are being put at risk. On the one hand, the cloud service is usually met with a broad range of internal/external challenges, who would unkindly delete, intrude or corrupt users' data; on the other hand, the cloud service providers may act unfairly, attempting to skin data loss or corruption and requesting that the files are still properly stored in the cloud for status or financial reasons. Thus it makes excessive sense for users to implement an efficient protocol to reach periodical verifications of their outsourced data to confirm that the cloud indeed keeps their data properly.

Numerous mechanisms dealing with the integrity of outsourced data without a local copy have been planned under dissimilar system and security models. The greatest significant work among these studies are the ODP (obvious data possession) model and POR (proof of irretrievability) model, which were originally advance for the single-server scenario by Attendees et al. [5] and Jules and Kaliski [2], respectively. Considering that files are usually stripy and redundantly stored across multi-servers or multicourse, [6]–[7] explore integrity verification policies suitable for such multi-servers or multi-clouds setting with different redundancy schemes, set for such multi-servers or multicourse setting with varied redundancy schemes, such as, copying erasure codes, and, more recently, regenerating codes. While cloud computing makes these favorable more appealing than ever, it also brings new and difficult security threats forward users' outsourced data. Since cloud service providers (CSP) are isolated administrative entities, data outsourcing is actually relinquishing user's ultimate deal over the fate of their data. As a result, the In this paper, we focus on the integrity confirmation problem in regenerating-code-based cloud storage, especially with the functional repair strategy [13]. Similar studies have been performed by Chen et al. [8] and Chen and Lee [9] separately and independently. [8] prolonged the single-server CPOR scheme (private version in

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# An Improvised DOS/DSOS Attack Detection and Prevention Approach by Puzzle Resource Inflation

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**Abstract:** In this paper, we study how to prevent DoS/DDoS attackers from inflating their puzzle-solving capabilities. To this end, we introduce a new client puzzle referred to as software puzzle. Unlike the existing client puzzle schemes, which publish their puzzle algorithms in advance, a puzzle algorithm in the present software puzzle scheme is randomly generated only after a client request is received at the server side and the algorithm is generated such that: 1) an attacker is unable to prepare an implementation to solve the puzzle in advance and 2) the attacker needs considerable effort in translating a central processing unit puzzle software to its functionally equivalent GPU version such that the translation cannot be done in real time. The seriousness of the DoS/DDoS problem and their increased frequency has led to the advent of numerous defence mechanisms. In this paper, we are particularly interested in the countermeasures to DoS/DDoS attacks on server computation power. DoS and DDoS are effective if attackers spend much less resources than the victim server or are much more powerful than normal users.

**Keywords:** Denial of Service (DoS), Distributed DoS (DDoS), Security, Puzzle.

## I. INTRODUCTION

Denial of Service (DoS) attacks and Distributed DoS (DDoS) attacks attempt to deplete an online service's resources such as network bandwidth, memory and computation power by overwhelming the service with bogus requests.1 For example, a malicious client sends a large number of garbage requests to an HTTPS bank server. As the server has to spend a lot of CPU time in completing SSL handshakes, it may not have sufficient resources left to handle service requests from its customers, resulting in lost businesses and reputation. DoS and DDoS attacks are not only theoretical, but also realistic, e.g., Pushdo SSL DDoS Attacks. DoS and DDoS are effective if attackers spend much less resources than the victim server or are much more powerful than normal users. In the example above, the attacker spends negligible effort in producing a request, but the server has to spend much more computational effort in HTTPS handshake (e.g., for RSA decryption). In this case, conventional cryptographic tools do not enhance the availability of the services. In fact, they may degrade service quality due to expensive cryptographic operations. The existing client puzzle schemes assume that the malicious client solves the puzzle using legacy CPU resource only. However, this assumption is not always true. Presently, the many-core GPU (Graphic Processing Unit) component is almost a standard configuration. The drawback in the existing system include

- An attacker can inflate its capability of DoS/DDoS attacks with fast puzzle solving software and/or built-in graphics processing unit (GPU).
- Hardware to significantly weaken the effectiveness of client puzzles.

The above drawbacks are overcome in the proposed system. Software puzzle scheme is proposed for defeating GPU-inflated DoS attack. It adopts software protection technologies to ensure challenge data confidentiality and code security for an appropriate time period. After receiving the software puzzle sent from the server, a client tries to solve the software puzzle on the host CPU, and replies to the server, as the conventional client puzzle scheme does. The practical strategy of the attacker is to accelerate the brute force process by exploiting the parallel computation capability of GPU cores. In the proposed approach, the attacker needs considerable effort in translating central processing unit puzzle software to its functionally equivalent GPU version such that the translation cannot be done in real time. Moreover, we show how to implement software puzzle in the generic server-browser model. Unlike the existing client puzzle schemes, which publish their puzzle algorithms in advance, a puzzle algorithm in the present software puzzle scheme is randomly generated only after a client request is received at the server side and the algorithm is generated such that an attacker is unable to prepare an implementation to solve the puzzle in advance and the attacker needs considerable effort in translating a central processing unit

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# An Enhanced Secure Data Storage and Sharing in Clouds Using Privilege Based Key Exchange

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**Abstract:** The cloud computing and data storage in clouds is rapidly replacing the traditional technologies due flexibility, scalability and on demand storage and platform independent computation. However these flexibilities also give rise to security threats and various precautions needed to be taken while storing the data in clouds. The shared data in clouds are subjected to both the transmission and conventional insider threats. Sharing of data by various users in clouds without compromising the security of data from legitimate but malicious users is an aspect to be addressed. There should be a mechanism to address the access control, key exchange and encryption/decryption problems in cloud computing. In his paper we address the aforementioned security requirements of shared group data within the cloud. The key management, encryption, decryption processes and access control, are taken care by the users to guarantee data security in clouds. A single key exchanged among the cloud members will cause the access of old data to a new member joining the cloud. In the proposed approach, two different key are generated for sharing among each of the users and each user will get only one share. The sharing of a single key among users in our methodology ensures that insider threats are countered. The other key share is available in the trusted third party, which is designated as cryptographic server. The achieved results are found to be encouraging and show that our scheme has the potential to be used effectively for securing the data sharing in cloud.

**Keywords:** Key Exchange, Access Control, Cloud Computing, Encryption/Decryption, Data Sharing.

## I. INTRODUCTION

The cloud computing and data storage in clouds is rapidly replacing the traditional technologies due flexibility, scalability and on demand storage and platform independent computation. Traditionally the data is encrypted and stored in the cloud. The key management, access control, encryption/ decryption process is managed by the users to ensure data security. In this paper, we propose a data sharing technique in clouds that provides data confidentiality and integrity, access control, data sharing (forwarding) without using compute-intensive re encryption, insider threat security and forward and backward access control. Our proposed methodology answers the aforementioned security requirements of shared group data within the cloud.

The methodology works with three entities as follows:

- Users;
- A Cryptographic Server (CS); and
- Cloud.

At the receiver's end the data is decrypted and sent back to the user. Two parts of the key are generated for a newly joined member of the cloud, and the user is added to the log. Whenever a member wants to exit from cloud his record is deleted from the log. This leads to more security to the data exchange among the users. Two attributed named and employed between the users for storing in cloud. The metadata confidentiality is ensured with encryption. The table uses one row for the database metadata, and one row for each table metadata. The encryption key is used as a master key. The trusted users who already have the master key can decrypt the metadata and process the information that is needed to encrypt and decrypt the tenant data. The metadata is retrieved by users by using an associated ID. This ID is estimated by using a Message Authentication Code (MAC) parameter to the name of the object described by the respective row. The proposed approach is described in fig. 1.

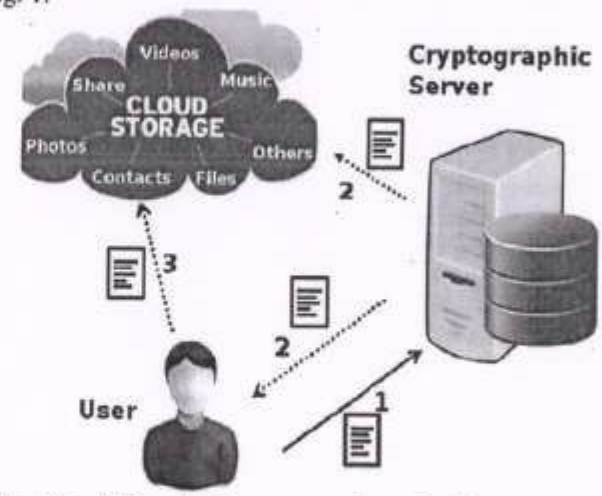


**Fig.1. Basic idea for the proposed methodology.**

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# An Enhanced Secured and Dependable Policy Outsourcing Big Data In Cloud Computing

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**Abstract:** Big data refers to high volume, high velocity, and/or high variety information assets that require new forms of processing to enable enhanced decision making, insight discovery and process optimization. Due to its high volume and complexity, it becomes difficult to process big data using on-hand database management tools. An effective option is to store big data in the cloud, as the cloud has capabilities of storing big data and processing high volume of user access requests in an efficient way. When hosting big data into the cloud, the data security becomes a major concern as cloud servers cannot be fully trusted by data owners. We formulated the policy updating problem in Attribute Based Encryption (ABE) systems and develop a new method to outsource the policy updating to the server. We propose an expressive and efficient data access control scheme for big data, which enables efficient dynamic policy updating. Compared to the conference version, we also propose an efficient and secure policy checking method that enables data owners to check whether the cipher texts have been updated correctly by cloud server. In this method, we do not require any help of data users, and data owners can check the correctness of the cipher text updating by their own secret keys and checking keys issued by each authority.

**Keywords:** Attribute Based Encryption (ABE), Process Optimization, End To End Security, Policies.

## I. INTRODUCTION

Due to its high volume and complexity, it becomes difficult to process big data using on-hand database management tools. An effective option is to store big data in the cloud, as the cloud has capabilities of storing big data and processing high volume of user access requests in an efficient way. When hosting big data into the cloud, the data security becomes a major concern as cloud servers cannot be fully trusted by data owners. The grand challenge of outsourcing policy updating to the cloud is to guarantee the following requirements:

**1.Correctness**: Users who possess sufficient attributes should still be able to decrypt the data encrypted under new access policy by running the original decryption algorithm.

**2. Completeness**: The policy updating method should beagle to update any type of access policy.

**3. Security**: The policy updating should not break the security of the access control system or introduce any new security problems.

The policy updating problem has been discussed in key policy structure [1] and cipher text-policy structure [10]. However, these methods cannot satisfy the completeness requirement, because they can only delegate key/cipher text with anew access policy that should be more restrictive than the previous policy. Furthermore, they cannot satisfy the security requirement either.

In this, we focus on solving the policy updating problem in ABE systems, and propose a secure and verifiable policy updating outsourcing method. Instead of retrieving André-encrypting the data, data owners only send policy updating queries to cloud server, and let cloud server update the policies of encrypted data directly, which means that cloud server does not need to decrypt the data before/during the policy updating. Our scheme can not only satisfy all the above requirements, but also avoid the transfer of encrypted data back and forth and minimize the computation work of data owners by making full use of the previously encrypted data under old access policies in the cloud. The contributions include:

- We formulate the policy updating problem in ABE systems and develop a new method to outsource the policy updating to the server.
- We propose an expressive and efficient data access control scheme for big data, which enables efficient dynamic policy updating.
- We design policy updating algorithms for different types of access policies, e.g., Boolean Formulas, LSSS Structure and Access Tree.

Compared to the conference version, we also propose inefficient and secure policy checking method that enables data owners to check whether the cipher texts have been updated correctly by cloud server. In this method, we do not require any help of data users, and data owners can check the

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# AN EFFECTIVE INFORMATION HACK PREVENTION APPROACH UTILIZING REVERSIBLE DATA HIDING TECHNIQUE

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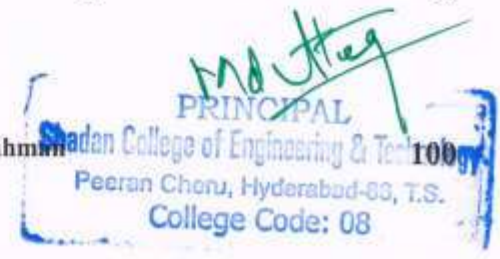
## ABSTRACT:

All the three media sources of audio, video and graphics forms a part of multimedia and they contain essential information. In the proposed approach, a scheme is devised for reversible data hiding in encrypted format where image acts as a cover medium. To hide the data here we are using a technique called histogram shifting technique. This paper contains the many objectives and a method how to implement the separable reversible data hiding. It has three objectives: 1) Data owner with encrypts the image with help of encryption key. 2) A data-hider uses a data-g key and compresses the encrypted image. 3) In the last step additional data is extracted and the original image is recovered. With the help of key receiver can extract the additional data and recover the original images. These two activities are separated depending on the availability of keys. Some of the image encryption algorithms based on chaotic maps which have been implemented has some disadvantages such as, if some of them are time consuming, some of them are complex, some have little key space. In this paper we proposed a 3D chaos which is based on hybrid encryption technique and reversible data hiding in encrypted format in which we have used 3D chaotic encryption algorithm for the first time.

## INDEX:

Reversible data hiding, lossless data hiding, invertible data hiding, histogram shifting, difference expansion, prediction-error, sorting, robust reversible data hiding, video reversible data hiding, audio reversible data hiding

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# A Novel Image Broadcasting Method using Secret-Fragment-Visible Mosaic Images through Inverse Color Transformations

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**Abstract:** Color Images from different sources are regularly utilized and are transmitted through the web for different purposes, for example, private endeavor chronicles, report stockpiling frameworks, medicinal imaging frameworks, and military picture databases. These pictures may contain mystery or classified data since it ought to be shielded from spillage amid transmissions. A methodology for secure picture transmission is required, which is to change a mystery picture into an important Secret Fragment Mosaic picture with size practically same and appearing to be like the preselected target picture. The mosaic picture is the result of masterminding of the piece parts of a mystery picture in a manner to camouflage the other picture called the objective picture. The mosaic picture, which appears to be like an arbitrarily chosen target picture, which is utilized for stowing away of the mystery picture by shading changing their qualities like the pieces of the objective picture. Such system is essential so for the lossless recuperation of the transmitted mystery picture. The suitable data is implanted into the mosaic picture for the recuperation of the transmitted mystery picture. Great trial results demonstrate the possibility of the proposed technique.

**Keywords:** Color Transformation, Data Hiding, Image Encryption, Mosaic Image, Secure Image Transmission.

## I. INTRODUCTION

These days, images from different sources are regularly utilized and are transmitted through the web for different applications, for example, classified endeavor documents, report stockpiling frameworks, therapeutic imaging frameworks, and military picture databases. These pictures generally contain private or secret data so that they ought to be shielded from spillages amid transmissions. As of late, numerous routines have been proposed for securing picture transmission, for which two regular methodologies are picture encryption and information covering up. Encryption of picture is a method that make utilization of the normal property of a picture, for example, high repetition and solid spatial relationship, to get a scrambled picture. The scrambled picture is good for nothing and this may stir the outsiders consideration because of its arbitrariness in structure amid transmission. Another technique for secure picture transmission is information concealing that shrouds a mystery element into a spread picture so that an outsider can't discovered the vicinity of the mystery substance. The issue of information covering up is the trouble in installing substantial volume of mystery element into a solitary picture. In the event that anybody needs to shroud a mystery element into a spread picture, the mystery substance must be exceptionally compacted before. Amid recovery this will bring about twisting of the mystery element.

In this paper, we propose an approach for secure image transmission is needed, which is to transform a secret image into a meaningful Secret Fragment Mosaic image with size almost same and looking similar to the preselected target image. The mosaic image is the outcome of arranging of the block fragments of a secret image in a way so as to disguise the other image called the target image. The mosaic image, which looks similar to a randomly selected target image, which is used for hiding of the secret image by color transforming their characteristics [5] similar to the blocks of the target image. Such technique is necessary so for the lossless recovery of the transmitted secret image. The encoded picture is a commotion picture so that nobody can acquire the mystery picture from it unless he/she has the right key. Be that as it may, the encoded picture is a trivial record, which can't give extra data before decoding and may stimulate an aggressor's consideration amid transmission because of its irregularity in structure. A distinct option for keep away from this issue is information concealing [8]–[18] that shrouds a mystery message into a spread picture so that nobody can understand the presence of the mystery information, in which the information sort of the mystery message explored in this paper is a picture. Existing information concealing systems predominantly use the strategies of LSB substitution [8], histogram moving[9], distinction development[10]–[11], expectation slip extension[12]–[13], recursive histogram alteration[14],and discrete cosine/wavelet changes[15]-[18].

Notwithstanding, with a specific end goal to lessen the contortion of the subsequent picture, an upper headed for the mutilation worth is normally situated on the payload of the

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# PATTERN GENERATION FROM SPATIAL DATABASE FOR THE AUTOMATED INTERPRETATION OF REMOTELY SENSED IMAGERY

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## Abstract

In the literature many techniques have been proposed for the digital image analysis, but it is found that not all are suited for the spatial images due to the complexity of spatial data. In order to facilitate the efficient analysis of spatial images, this paper presents a methodology in which different advanced algorithms of spatial image processing are integrated with techniques adapted from data mining to generate an object based system that successfully performs the multi-resolution analysis of spatial images and recognises various regions from spatial images by exploiting their contextual information of shape and texture. In the proposed work, the spatial images are processed and analysed at different levels or scales for efficient extraction of information. The basic idea is to use domain concepts to build generic description of patterns from spatial database, and then utilise structural approaches to identify such patterns in spatial images.

## Introduction

With the development of technology and advances in spatial image acquisition and storage technology we are facing with huge and continuously growing spatial images as a result of which it has become impossible to interpret all these images manually. These spatial images, if analysed efficiently can play an important role in the information decision support systems, especially to classify land cover, assist urban planning, hazard prediction, various fields of landscape & regional planning or land system inventories and civil & military intelligence utilities.

Since remotely sensed images consist of rows and columns of pixels, per-pixel approach, either supervised or un-supervised, has been the conventional method for image analysis including land cover mapping (Dean and Smith, 2003). Pixel-based classification methods, by using spectral classification techniques, assign a pixel to a class fundamentally according to the spectral similarities (Gao et al., 2006). Although these methods are well developed and many successful applications (Dean and Smith, 2003; Pierce et al., 1994; Carrasco et al., 2000; Asner et al., 2003; Zhou and Robson, 2001) have been reported, they suffers-from the drawback of ignoring the spatial pattern in classification.

Unlike the conventional pixel-based methods, an object-oriented method treats the image as a set of meaningful objects rather than single pixels (Giada et al., 2003; Zhang et al., 2011). Image objects are contiguous regions which together constitute the spatial image. In image classification, the object based approach allows to explore not only digital value of pixel (defined in spectral domain, as the pixel based method does) but also considers other features associated with size, shape, pattern, texture which is widely as contextual information.

In this paper, a methodology is proposed for performing the efficient analysis of spatial images in which different algorithms of spatial image processing are integrated with techniques adapted from data mining to generate an object based system that successfully performs the multi-resolution analysis of spatial images and recognises various regions from spatial images by exploiting their contextual information of shape and texture. The basic idea is to use domain concepts to build generic description of patterns from spatial database, and then utilise structural approaches to identify such patterns in spatial images.

## Aims and Objectives

The system is developed with an aim of recognising the different regions contained in spatial images, classifying them based on their contents, calculating the area occupied by different regions and estimating the dominant region. Among the various regions of geographic system, we have focus on water, terrestrial, mountainous, inhabitant and vegetation regions which constitute

# Rumour Detection Models & Tools for Social Networking Sites

**Mohammed Mahmood Ali, Mohammad S. Qaseem, Ateeq ur Rahman**

***Abstract:*** ***Efficient utilization of social networking sites (SNS) had reduced communication delays, at the same time increased rumour messages. Subsequently, mischievous people started sharing of rumours via social networking sites for gaining personal benefits. This falsified information (i.e., rumour) creates misconception among the people of society influencing socio-economic losses by disrupting the routine businesses of private and government sectors. Communication of rumour information requires rigorous surveillance, before they become viral through social media platforms. Detecting these rumour words in an early stage from messaging applications needs to be predicted using robust Rumour Detection Models (RDM) and succinct tools. RDM are effectively used in detecting the rumours from social media platforms (Twitter, LinkedIn, Instagram, WhatsApp, Weibo sena and others) with the help of bag of words and machine learning approaches to a limited extent. RDM fails in detecting the emerging rumours that contains linguistic words of a specific language during the chatting session. This survey compares the various RDM strategies and Tools that were proposed earlier for identifying the rumour words in social media platforms. It is found that many of earlier RDM make use of Deep learning approaches, Machine learning, Artificial Intelligence, Fuzzy logic technique, Graph theory and Data mining techniques. Finally, an improved RDM model is proposed in Figure 2, efficiency of this proposed RDM models is improved by embedding of Pre-defined rumour rules, WordNet Ontology and NLP/machine learning approach giving the precision rate of 83.33% when compared with other state-of-art systems.***

***Keywords : Social Networking Sites (SNS), Rumour Detection models (RDM), Pre-defined rules, WordNet Ontology.***

## I. INTRODUCTION

With the use of Social media platforms there is a tremendous increase in spreading of rumours on various topics and domains. Now-a-days, these social messaging applications are excessively used in promoting of events, Advertisements, New's channels, sharing of market data and business transactions. Sometimes, these microblogs communicate the false information which leads to misunderstanding among the group of people creating mental tensions in the society. Surveillance of falsified information (i.e., rumour) needs to be strictly monitored by e-crime cell. The e-crime cell is authorized to take stringent action against those culprits for sending rumours through SNS. Sending of deceitful and false information named as "rumour", which is one of the serious cybercrimes as per the FISA Act [4]. Spreading of rumours through Websites and Social media platforms, mobile phones, laptops and vice versa may encounter various problems in the society that hinders the development by creating mental tensions among the people [5]. Specifically, many of the electronic rumours spread through mobile messaging applications is very difficult to catch at the initial stages unless it is notified by the users, and these short posts exists for short life span at the server. Similarly, microblogs communicated or shared via various interchangeable social media platform to other social mediums (i.e., WhatsApp to Facebook, Google+ to Instagram, Instagram to WhatsApp, youtube to WhatsApp, Facebook to WhatsApp and vice versa) differs in their messaging architecture and privacy restrictions of storing and retrieving policies that makes it difficult to identify the rumour words when they are encountered in microblogs [6]. Radio agencies and News channels also plays a vital role in sending of rumours through audio, video or conference communication, which becomes impossible to analyze and stop their transmissions at run-time, such contents once viewed in mobile phones are automatically auto-saved in the memory and hence, are transmitted to others at later point of time. Spying of such rumour voice communications and video recordings is still a research issue that requires rigorous surveillance at various instance of timestamps. Every post may not be a rumour, identifying factual microblogs from set of cluster of posts that are sent through social media is predicted using ranking algorithm from various enquiry patterns [7]. Twitter messaging application which is widely used by millions of people for posting, giving reply to specific tweets, forwarding of tweet to other users adversely influence on Health domains by creating mental tension in the society. To overcome, health domain problems from Twitter, few parameters are picked for evaluation such as statistics of users, sentiments of specific tweets, followers of root of tweet along with URLs and fed to classifiers for finding the rumours [3]. A new classification algorithm was proposed using statistical metrics for segregation of rumour and non-rumour twitter posts based on users frequency of interaction, structure & network establishment, temporary connectivity and linguistic features. It is concluded that linguistic features evolved to be on top-priority with good accuracy rate in classification of rumours and non-rumours for tweets that vary for long duration [10]. Another study, suggest that rumours are detected by supervised (well-labelled datasets), unsupervised (unknown labels), and hybrid based (known and unknown keywords) approaches [5].

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# Cloud Computing Data Group Distribution as Well as Restricted Distribution with Multi Owner

**E.Saikiran, Anubharti, Md.Ateeq-ur-Rahman**

***Abstract:*** *with the quick headway of cloud organizations, monstrous volume of information is shared through distributed computing. But cryptographic strategies have been utilized to give information mystery in distributed computing, current instruments can't approve assurance stresses over ciphertext related with numerous proprietors, which makes co proprietors unfit to reasonably control whether information disseminators can truly disperse their information. In this paper,we propose a sheltered information bunch sharing and prohibitive dispersal plot with multiproprietor in distributed computing, in which information proprietor can grant private information to a gathering of customers by methods for the cloud in a protected way, and information disseminator can spread the information to anothergathering of customers if the characteristics satisfy the passageway approaches in the ciphertext. We further present a multiparty get the chance to control instrument over the dispersed ciphertext, in which the information coproprietors can attach new access ways to deal with the ciphertext due to their security tendencies. Moreover, approach's, proprietor need and lion's offer permit, realized by different access methodologies. The security examination and test outcomes show our arrangements helpful and powerful for secure information offering to multi proprietor in distributed computing.*

***Keywords:*** *Information sharing, distributed computing, contingent intermediary re-encryption, trait based encryption, security struggle*

## I. INTRODUCTION

The predominance of distributed computing is gotten fr om the upsides of rich storing resources and minute get to. It adds up to the advantages of figuring system, and subsequently gives on-demand benefits over the Internet. Various acclaimed association tare as of now giving open cloud organizations, for instance, Amazon, Google, Alibaba. These organizations empower singular customers and undertaking customers to move information (for instance photos, chronicles and reports) to cloud authority association (CSP), to get to the information at whatever point wherever and offering the information to others. In order to verify the insurance of customers, most cloud organizations achieve get the chance to control by keeping up get the chance to control list (ACL). Consequently, customers can choose to either disseminate their information to anyone or grant get to rights essentially to their asserted people. Regardless, the security perils have brought stresses up in people, in view of the information is taken care of in plaintext structure by the CSP. When the information is displayed on the CSP, it is out of the information proprietor's control. Heartbreakingly, the CSP is commonly a semi trusted in server which really seeks after the doled out show, yet may assemble the customers' information and even use them for benefits without customers' consents. On the other hand, the information has enormous uses by various information buyers to get acquainted with the direct of customers. These security issues animate the ground-breaking answers for guarantee information characterization. It is essential to grasp get the chance to control frameworks to achieve secure information participating in distributed computing. At present, cryptographic parts, for instance, quality based encryption (ABE) [5], character based imparts encryption (IBBE), and remote validation has been abused to settle these security and assurance issues. ABE is one of the new cryptographic frameworks used in distributed computing to land at confirm and fine-grained information sharing. It incorporates an instrument that engages a passageway control over encoded information using access draws near and credited characteristics among unscrambling keys and ciphertexts. For whatever time span that the quality set satisfies the passageway methodology that the ciphertext can be unscrambled. IBBE is another unavoidable methodology used in distributed computing, in which customers could bestow their encoded information to various gatherers in a steady progression and the all inclusive community key of the beneficiary can be seen as any considerable strings, for instance, novel character and email. Surely, IBBE can be seen as a phenomenal occurrence of ABE for plans involving an OR gateway. Appeared differently in relation to ABE in which the riddle key and ciphertext are both contrast with a great deal of properties, IBBE achieves ease key organization and minimal consistent technique sizes, which is dynamically sensible for securely conveying information to express beneficiaries in distributed computing. From this time forward, by using characters, information proprietor can give information to a gathering of customers in a secured and capable manner, which rouses more customers to share their private information by methods for cloud. Everything considered, these encryption methodologies can deflect unapproved components (for instance semi-trusted CSP and toxic customers) from getting to the information, yet it may not consider information

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# A Framework for Iris Localization based on Greedy Snake Model

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***Abstract***—This paper proposes a framework for iris localization with greedy snake model to accurately extract iris region and compensate for the accuracy problem caused by the non-standard circle characteristics of the iris. Initially upper eyelashes are detected and removed with mathematical computational basis operators within a windowed eye region. In the proposed scheme, the non circular pupil contour is detected in an iterative fashion with a novel edge based two stage greedy snake model. In the first stage, the pupil-iris edge is coarsely located with mathematical computational gradient detector and in the second stage, the precise pupil contour is detected with greedy snake in which the contour is initialized within the pupil and deformed into new shape in response to the two controlling force models, introduced as internal and external forces to properly activate the contour. The image gradient and the curvature are utilized together to determine the speed and direction of the contour deformation,while for the localization of limbus boundary vertical edges are detected between iris and sclera region with horizontal polynomials coefficient. Then the precise limbus boundary is localized from the two annulus sector area with the detection of radial boundary points in a sequence along angular directions within the specified projection curve radiating from pupil center. The experimental results with standard CASIA database show that the proposed scheme is robust in finding exact noncircular pupil, limbus boundary and eyelids.

***Index Terms***—*Active contour,* Greedy Snake Model,*Orthogonal Polynomials,Iris Localization, Image Gradient.*

## I. INTRODUCTION

Recently, Personal Identification System (PIS) becomes a key factor for safety and secured environments. Iris recognition is a technology to identify individuals based on iris, and is more accurate and reliable than other biometric technologies, such as fingerprint, face recognition. Iris localization is an important step that plays a vital role in the accuracy and efficiency of Personal Identification System since a minute error in, leads to incorrect feature extraction and poor recognition. The goal of localization is to remove the iris region from the surrounding noises [1]. Most of the researchers reported eyelash detection as a post-

# Emotion Detection and Sentiment Analysis Based on Machine Learning Techniques

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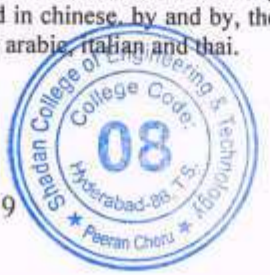
**Abstract- In this paper condenses the investigation of various regulated and unsupervised learning procedures of study for sentiment analysis Based on Machine Learning Techniques. The development of social web contributes tremendous measure of client produced substance, for example, client audits, remarks and suppositions. This client created substance can be about items, individuals, occasions, and so forth. This data is extremely valuable for organizations, governments and people. While this substance intended to be useful breaking down this heft of client created content is troublesome and tedious. So there is a need to build up a smart framework which naturally mine such colossal substance and order them into positive, negative and unbiased class. Slant investigation is the robotized mining of mentalities, suppositions, and feelings from content, discourse, and database sources through Natural Language Processing (NLP). The target of this paper is to find the idea of Sentiment Analysis in the field of Natural Language Processing, and shows a similar investigation of various methods utilized in this field.**

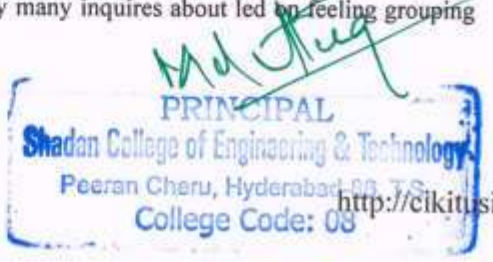
***Keywords: TF*PDF algorithm, SVM, Sentiment Analysis, F-Measure, EFS algorithm.***

## I. INTRODUCTION

Sentiment analysis is a sort of normal dialect preparing for following the state of mind of people in general about a specific item or theme. supposition investigation [1], which is additionally called conclusion mining, includes in building a framework to gather and inspect feelings about the item made in blog entries, remarks, audits or tweets. notion investigation can be helpful in a few different ways. for instance, in showcasing it helps in judging the achievement of a promotion crusade or new item dispatch, figure out which renditions of an item or administration are well known and even recognize which socioeconomics like or aversion specific highlights [2].

There are a few difficulties in sentiment investigation [3-6]. The first is an assessment word that is thought to be sure in one circumstance might be viewed as negative in another circumstance. a second test is that individuals don't in every case express suppositions seamy. Most conventional content handling depends on the way that little contrasts between two bits of content don't change the importance in particular. in sentiment examination, in any case, "the photo was awesome" is altogether different from "the photo was not incredible". individuals can be opposing in their announcements. most audits will have both positive and negative remarks, which is to some degree reasonable by breaking down sentences each one in turn. be that as it may, in the more casual medium like twitter or websites, the more probable individuals are to consolidate diverse assessments in a similar sentence which is simple for a human to see, however more troublesome for a pc to parse. now and again even other individuals experience issues understanding what somebody thought in light of a short bit of content since it needs setting. for instance, "that motion picture was comparable to its last motion picture" is altogether subject to what the individual communicating the assessment thought of the past model. the client's yearning is on for and reliance upon online counsel and proposals the information uncovers is only one purpose for the develop of enthusiasm for new frameworks that arrangement specifically with conclusions as a top of the line protest. assumption investigation focuses on states of mind, though conventional content mining centers around the examination of actualities. there are couple of fundamental fields of research prevail in sentiment examination: notion order, include based sentiment characterization and conclusion rundown. conclusion characterization manages grouping whole records as per the suppositions towards specific items. highlight construct sentiment grouping in light of the other hand thinks about the feelings on highlights of specific articles. feeling rundown assignment is not the same as customary content outline in light of the fact that exclusive the highlights of the item are mined on which the clients have communicated their sentiments. feeling rundown does not outline the surveys by choosing a subset or rework a portion of the first sentences from the audits to catch the fundamental focuses as in the great content synopsis. dialects that have been contemplated generally are english and in chinese. by and by, there are not very many inquires about led on feeling grouping for different dialects like arabic, italian and thai.



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# Feature Prediction in Urban and Industrial Area of Chemical Data Based Air Quality

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***Abstract***

Chemical air pollution can affect our health and the environment in many ways. In the last few years, heavy environmental loads have led to deteriorating air quality in Chennai's urban and industrial areas. The work of controlling and improving air quality has attracted a huge chunk of national attention. Ambient air quality data mining is a tool that deals with the search for patterns hidden within the available data, so that the information obtained can be converted into usable knowledge. This work aid data mining to uncover the secret knowledge of the distribution of large quantities of chemical air pollution obtained from monitoring stations in the Chennai area. TNPCB (Tamil Nadu Pollution Control Board) provides online data from Annanagar, Adayar, T.Nagar, Nunambakkam monitoring stations. CPCB (Central Pollution Control Board) Online Information Alandur, Provides data from IIT and Manali observation stations. TNPCB online data, CPCB online data and industrial data have been collected from an agency monitoring system from PM10, PM2.5, SO2, NO2 for the last four years (2017-2019) using data mining techniques to identify the distribution of suspended particles such as polluted environmental air. The data is analyzed. It helps to predict air quality in the urban and industrial areas of Chennai and can serve as an important reference for government agencies in evaluating and determining chemical air pollution policies in the future. CPCB online data and industry data from an agency monitoring system, PM10, PM2.5, SO2, NO2 polluted environmental air is

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# Illuminating Welding Image Patterns Throughout Image Searching In Chronological Information In Spot Welding

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*Abstract-*

welding image databases live terabytes of welding image information that might be acquired from topographic maps, airborne photographs, satellite pictures, medicinal types of gear, laser/lidar scanners, camcorders among others in broad daylight and private associations which likewise get to a few databases involving evaluation, monetary, security, and measurable data for big business forms. It is expensive and regularly doubtful for clients to look at welding image information in detail and scan for important examples or connections among information. welding image information welding (SDM) plans to computerize such a learning disclosure process in vast databases alongside visual investigation strategies for remedy correspondence.

In this examination, right off the bat welding image information welding and visual investigation strategies are presented inside setting of uncovering welding image examples from a fleeting informational collection. At that point, an application is executed on verifiable information of oil transportation and ship mischances at Istanbul Bogazi (Istanbul Strait) to find welding image examples among the information and its condition. The outcomes are approved and thought about inside the setting encounters in information planning, information association, and downsides of taking care of authentic information.

***Keywords**: geo-spatial visualization, visual exploration, spatio-temporal data, discovering spatio-temporal patterns, knowledge discovery, welding image data-welding , welding image data analysis.*

## 1 INTRODUCTION

Legislative and military associations have inheritance or operational welding image databases or non-spatial (geographic) databases, which are likewise some way or another connected to a welding image database including enumeration, monetary, measurable data for arranging, insight, choice and arrangement making. Information all alone has no esteem. Without straightforward visual approaches to coordinate, show and break down, it is conceivable to wind up with enormous measures of information yet no data. SDM assumes a critical part in; extricating intriguing welding image examples and highlights, catching inborn connections among welding image information/highlights, displaying information consistency succinctly and at higher applied levels. SDM contrasts from non-spatial information welding in view of the basic welding image

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# Parallel and Nearest Neighbor Search for High-Dimensional Index Structure of Cbir System Using Dva-Tree

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***Abstract-***

The System proposed similarity measure on multimedia data to retrieve content-based information. Parallel Similarity search focus on research in the field of adaptable similarity search which considers the adaptation of the proposed similarity measure to different user preferences. In order to improve the retrieval quality of content-based similarity search, they plan to examine the properties of the underlying similarity matrix to capture those user preferences. The content-based retrieval of heavily sized databases. As information retrieval is generally not restricted to a fixed size of the databases, this investigate on techniques to query voluminous data in an efficient way. To support the retrieval process, distributed vector (DVA) approximation and indexing techniques of the proposed similarity measure.
***Keywords:*** *Distributed Vector Approximation (DVA), multimedia data*

## I. Introduction:

The need to manage various types of large scale datastored in web environments has drastically increased andresulted in the development of index mechanism for highdimensionalfeature vector data about such a kinds ofmultimedia data. Recent search engine for the multimediadata in web location may collect billions ofimages, text and video data, which makes the performancebottleneck to get a suitable web documents andcontents. Given large image and video data collections, abasic problem is to find objects that cover given informationneed. Due to the huge amount of data, keywordbasedtechniques are too expensive, requiring too muchmanual intervention. In contrast, a content-based informationretrieval(CBIR) system identifies the images mostsimilar to a given query image or video clip.

# Machine Learning Approach for Fetal Heartbeat and Uterine Contractions Monitoring

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**Abstract---** Machine learning algorithms in the healthcare domain can improve healthcare and clinical practice ethically and reliably. The fetal heart rate (FHR) and the uterine contraction (UC) activity are recorded by using the technique called Cardiotocography (CTG).It provides support for the obstetricians to obtain complete physiological information about new-borns.In this paper, machine learning classification algorithms such as Artificial Neural Network (ANN), Naive Bayes,Decision Tree, Random Forest, Support Vector Machine (SVM), and Adaptive Boosting (Adaboost) are applied to predict fetal status as normal, suspicious or pathologic. The performance of the algorithms has been evaluated based on training and testing Accuracy, Precision, Recall, Specificity, ROC (Receiver Operation Characteristics), and Kappa Statistics. The obtained result shows that the majority of classification algorithms perform better. It was found that Random Forest has provided the highest accuracy of 99% in training and 93% in testing.

**Keywords---** Cardiotocography, Fetal Heart Rate, Machine Learning.

## I. Introduction

In recent days, the opportunities provided by machine learning algorithms has spawned a new field of health-care research mainly focused on forecasting variety of illness such as prediction of body fat, prediction of diabetes, prediction of blood pressure, prediction of emotional and psychological stress, prediction of human immunodeficiency virus (HIV), prediction of fetal heart rate, and prediction of liver cancer. It is used to support medical decision making and to improve health care for patients.

The medical decisions are based on laboratory data (M.J. Becich, 2000) that contribute 70% to the overall cost of health care. Cardiotocography method was introduced in 1970 to monitor the fetal heart rate (Nijhuis et al., 1982).Cardiotocography is commonly used as a diagnostic method to classify fetal hypoxia state as normal, suspicious and pathological. In clinical terminology, hypoxemia is an initial stage of oxygen deficiency, hypoxia is the second stage of oxygen deficiency, and asphyxia is the most critical stage. The international guidelines recommend for normal baseline fetal heart rate to be in the range of 110 to 160 bpm (beats per minute). Rosalie M Grivellet. al (2015) measured the effectiveness of antenatal CTG. This is used to improve the outcomes for mothers and babies during and after pregnancy.

Recent researches focused on fetal development in many aspects. The main objective of this work is to predict the existence of fetal distress by using machine learning classification models. There are six machine learning algorithms that are used to classify fetal heart rate state as normal, suspect, or pathologic.

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# DIGITAL CIELUV COLOR IMAGE SEGMENTATION

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**Abstract: The identification of retinal blood vessels is very important but crucial task to analyze the severity of the retinal diseases such as diabetic retinopathy, macular degeneration, central retinal vein occlusion, central retinal artery occlusion, retinal detachment and branch retinal vein occlusion. It is evident that huge number of computer based automated algorithms are developed for the accurate detection of blood vessels and optical disc. Most of the work utilizes the retinal fundus images in RGB color space. The proposed work implements the detection and segmentation of retinal blood vessel in RGB and device independent CIELUV color space. The proposed work for the segmentation retinal blood vessel is based on adaptive histogram equalization, median filtering and morphological operations.**

**Keywords: Segmentation, Retinal Blood Vessel, Adaptive Histogram Equalization, Median Filtering, Mathematical Morphology**

## 1. INTRODUCTION

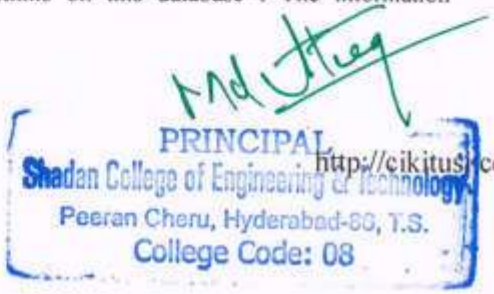
Retinal blood vessel detection and segmentation is a vital process for the precise illustration, analysis, diagnosis, planning of early treatment and surgery for retinal diseases such as diabetic retinopathy, macular degeneration, central retinal vein occlusion, central retinal artery occlusion, retinal detachment and branch retinal vein occlusion[1-3]. Recent years, due to the advancement of latest technologies, a huge number of automated methods developed for the segmentation of blood vessels from retinal color fundus images[4-6]. However, identification and segmentation of retinal blood vessels still remains an exigent assignment due to the abnormalities, non-uniform illumination, varying shape and size of the vessels, and anatomical variability between subjects[5]. Number of works presented innovative methods [21-27] for the automatic detection and segmentation of retinal vessels ns in color fundus images. The proposed work implements the detection and segmentation of retinal blood vessel in RGB and device independent CIELUV color space. A color space is nothing but a method or way of creating and visualizing colors[9]. Human eye describes color as three important attributes of hue, brightness and colorfulness[10]. But a computer monitor define color as the percentage of red (R), green (G), and blue (B) phosphor emissions[11]. Various color spaces had developed for different applications[13]. The input image taken from image sensor is usually in RGB color space. However, this device dependent and non uniform color space is not suitable for objects identification and recognition of colors[12]. Moreover, it is very difficult to find out an exact color in RGB color space. So it is very important to transform RGB color image into other color spaces such as CIELuv[14]. The main advantage of CIELuv color space is that it is device independent. i.e., the same color information is displayed irrespective of equipment[18]. CIELuv color space is uniformly derived from CIEXYZ color space[17]. In perceptual uniform space, such as CIELuv, any two colors those are equally far-away in the color space are equally distant perceptually[15]. In CIELuv color space, the component L indicates the actual visual difference and the color information (red/blue and yellow/blue) are stored in u and v components[16].

## 2. PROPOSED SYSTEM

Figure 2 illustrates the proposed system for the detection and segmentation of retinal blood vessel in color fundus images. The proposed approach is explained as follows.

Step 1: The input image is acquired from the DRIVE date base (https://www.isi.uu.nl/Research/Databases/DRIVE/).

The DRIVE database is extensively used by the researcher to facilitate the relative investigations on segmentation of retinal blood vessels and assessment their algorithms on this database[20]. The information

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# Image Defect Identification with Orthogonal Polynomials Model

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**Abstract:** In this study, a simple technique for defect identification based on Orthogonal Polynomials (OP) model is presented. Initially, the input image under analysis is applied with OP model and gradient estimation scheme is employed to locate the edges present. The resulting binary image is again applied with OP model, and a simple computation scheme that finds the ratio between selected transform coefficients is proposed to identity the defects present in the image. Experiments have been conducted with different images consisting of both homogeneous and non homogeneous regions. The proposed technique is found to perform well, for unshaped defects, and is found to outperform the existing schemes.

**Key words:** Edge detection, defect identification, orthogonal polynomials, weight factor, gradient estimation

## INTRODUCTION

The process of identifying and classifying defects in digital images is a high priority operation and has wide applications. Image defect detection algorithms are generally developed for homogeneous regions where local anomalies that break the visual homogeneity from their surrounding background are identified as defects. Defect detection task is confidential as qualitative inspection which involves detecting ill-defined, no quantifiable faulty items such as scratches, cracks, stain and wear. Most of the defect detection methods for uniform surfaces use simple thresholding or edge detection techniques but they are also focused on non textured surfaces such as sheet steel, aluminium strips, glass panel and web materials. Wilder (1989) has reported a scheme to identity the defect in uniform surface images that arises in glass plate. Shankar and Zhong (2006) reported alternatively a non referential method based on wavelet decomposition and morphological operations for wafer die inspection. It requires a specific design of structuring elements for individual defect types and assumes that local defects and parts of the background are structurally different. Since, each image has some unique patterns, local defects could be structurally similar to edges. Hence, the currently available defect inspection algorithms for patterned wafers cannot be extended for defect detection in non homogeneous region.

Serdaroglu *et al.* (2006) applied Independent Component Analysis (ICA) technique for surface defect detection of textile fabrics and Liquid Crystal Display (LCD) panels in manufacturing. But, ICA-based defect detection methods are only applicable to non-textured or homogeneously-textured surfaces. They cannot be extended for defect detection in images with inhomogeneous background patterns. Tsai *et al.* (2012a) reported a shift-tolerant dissimilarity measure for defect detection in gray-level images. Chao and Tsai (2010) designed an anisotropic diffusion model in low-contrast images of backlight panels, LCD glass substrates and brightness enhancement films.

Yang *et al.* (2005) described a subjective evaluation of the visual quality inspection of aesthetic parameters in architectural work. But the experimental results suggested the unreliability of visual quality inspection because it cannot quantify defect values and determine all possible defect positions due to the limits of human perception. Tsai *et al.* (2013) reported defect detection methods based on independent component analysis basis images to detect defective solar cell subband of a large solar module in the Electro Luminescence (EL) image. The line and barshaped defects of micro-cracks, breaks and finger interruptions in the solar module can be well presented as dark regions in the EL image. But, EL image displayed dislocations and grain boundaries of the multicrystalline solar wafer as dark regions and results in a random inhomogeneous background. The dark regions of defects and those in the defect-free background can be visually observed in the EL image, but they are extremely difficult to be distinguished automatically. Liu *et al.* (2010) applied spectral subtraction to detect defects in the Integrated Circuit (IC) image. Tsai *et al.* (2012) suggested a self-reference scheme based on the fourier image reconstruction to detect various defects in multicrystalline

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# PROCESS AND APPLICATION OF DATA MINING IN THE UNIVERSITY LIBRARY

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**ABSTRACT** In view of characteristics of users data in the university library and based on big data technology, in this paper we propose a data mining process and discuss some applications of data mining in the university library. Besides, we inveterate the problems in the application of big data mining in the university library and provide some suggestions to solve these problems.

## 1. INTRODUCTION:

Data are any figure, facts or text that can be processed by a computer. Now a day's many organizations deal and manage large amount of data and databases in various formats. Data mining techniques are used to operate on large volumes of data to discover hidden patterns and relationships helpful in decision making. Data mining software helps users to analyze data from different dimensions, categorize it and a summarized relationship is identified during the mining process. Various data mining techniques are used in different fields of life such as medicine, statistical analysis, engineering, education, banking, marketing, sales etc.

**1.1. Associations in data mining**: Association rule learning is a popular and well researched method for discovering interesting relations between variables in large databases. For eg {onion and Potatoes}=> {bread and cheese found in the sales data of a super market would indicate that if a customer buys onions and potatoes together he or she is likely to also buy bread and cheese. Such information can be used as the basis for the decisions about marketing activities such as example promotional pricing on product placements. In addition to the above example from market basket analysis association rules are employed. Today in many application areas including web usage mining, intrusion detection and biometrics it is used.

## 2. DATA MINING PROCESS:

Data mining process should be standard. It should be reliable and repeatable by people having a very little knowledge of data mining skills. It involves the following processes.

- Job knowledge: The objective of the job, background information, data mining objective risks involved, assessment of the situation and success criteria
- Data Understanding: Collect data, describe, explore data, and check the quality of the data.
- Data preparation: data selection, data description, consolidation, cleaning, formatting and derive data qualities.
- Data modeling process: Modeling techniques are identified based on the data mining objectives, parameter setting, testing designs and model assessment.
- Evaluation process: results evaluation, apply and review the process and decide upon action to be taken or decisions based on the model.
- Deployment process: Planning for monitoring and maintenance, produce final reports, reviews experiences and present documentation etc.

Chart of Data Mining Process

## 3. DATA MINING COULD BE USEFUL TO ANSWER QUESTIONS LIKE

- Forecasting things that are likely happen in future
- Classifying things into groups based on patterns
- Associating similar events that are likely to occur together
- Associating people into groups based on their attributes
- Listing the sequence what events are likely to lead to whom

Data mining can be applied in business & industry applications to identify and discover the expected behavior of the customer. It can rate the behavior of the customer in the areas like credit card analysis, insurance claim fraud analysis, telecommunication call record analysis, consumer goods promotion analysis etc. A super market becomes information broker and basketball teams prefer data mining to track game strategy. Web mining finds the affinity of visitor to web pages analyzing web logs, identifies popular pages, analyze links that are hard to find, etc.

It was also applied in Terrorism Information Awareness project in May 2003 conducted by the Defense Advance

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# RUMOR PROLIFERATION AND DETECTION IN SOCIAL MEDIA: A REVIEW

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Abstract—With the pervasiveness of online media data as a source of information, verifying the validity of this informa- tion is becoming even more important yet quite challenging. Rumors spread a large quantity of misinformation on microblogs. In this study we address two common issues within the context of microblog social media. First, we detect rumors as a type of misinformation propagation, and next, we go beyond detection to perform the task of rumor classification (RDC). We explore the problem using a standard data set. We devise novel features and study their impact on the task. We experiment with various levels of preprocessing as a precursor to the classification as well as grouping of features. We achieve an F-Measure of over
0.82 in the RDC task in a mixed rumors data set and 84% in a single rumor data set using a two step classification approach.
Keywords–Rumor Detection and Classification; Super- vised Machine Learning; Feature-based model.

## 1. INTRODUCTION

Social media is currently a place where massive data is generated continuously. Nowadays, novel break- ing news appear first on microblogs, before making it through to traditional media outlets. Hence, microblog- ging websites are rich sources of information which have been successfully leveraged for the analysis of sociopragmatic phenomena, such as belief, opinion, and sentiment in online communication. Twitter [27] is one of the most popular microblogging platforms. It serves as one of the foremost goto media for research in natu- ral language processing (NLP), where practitioners rely on deriving various sets of features leveraging content, network structure, and memes of users within these networks. However, the unprecedented existence of such massive data acts as a double edged sword, one can easily get unreliable information from such sources, and it is a challenge to control the spread of false information either maliciously or even inadvertently. The information seeker is inundated with an influx of data. Most importantly, it is hard to distinguish reliable information from false information, especially if the data appears to be formatted
and well structured [9] [24]. The problem is exacerbated by the fact that many information seekers believe that anything online in digital form is true and that the information is accurate and trustworthy; although, it is well known that a lot of the information on the web could be false or untrue. This is especially crucial in cases of emergencies. For example, by simply hitting the Re-tweet button on Twitter, within a fraction of a second, a piece of information becomes viral almost instantly. There are widely varying definitions of the term "rumor". We adopt the following definition of rumor: a rumor could be both true or false. A rumor is a claim whose truthfulness is in doubt and has no clear source, even if its ideological or partisan origins and intents are clear [2].

In verifying the accuracy of claims or events online, there are four major aspects that could be checked: Provenance, the original piece of content; Source, who uploaded the content; Date-and-location, when and where the content was created [22]. Analyzing each of these items individually plays a key role in verifying the trustworthiness of the data.

In this paper, we address the problem of detecting rumors in Twitter data. We start with the motivation behind this research, and then the history of different studies about rumors is overviewed in Section 2. Next, in Section 3, the overall pipeline is exposed, in which we adopt a supervised machine learning framework with several feature sets, and finally in Section 4, we compare our results to the current state of the art performance on the task. We show that our approach yields comparable and even superior results to the work to date.

## 2. RELATED WORK

Psychologists studied the phenomenon of rumors from various angles. First studies were carried out in 1902 by German psychologist and philosopher, William Stern, and later in 1947 by his student Gordon Allport, who studied how stories get affected in their lifecy- cle [10]. In 1994, Robert Knapp published "A Psychology of Rumors", which comprised of a collection of more than

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# Work-Family Conflict and Depression Among Women Working Professionals

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In India women working professionals engage in paid work. Currently, many women working professionals have been continuing to work through the childrearing life stage, and the number of women working professionals who leave jobs due to wedding, childbearing and childcare has been declining. The influence of work-family conflict on psychological well-being among women working professionals has not been completely studied. The aim of this paper is to examine the relationship between work-family conflict and depression. This paper also determines whether there is a significant difference between work-family conflict and depression among women working professionals. The sample size includes 210 women working professionals (lecturers only) in Hyderabad. This study result shows that there is significant relationship between work-family conflict and depression. Further, the findings state that there are significant differences between work-family conflict and depression among women working professionals.

**Keywords:** Work-Family Conflict, Depression, Women Working Professionals.

RESEARCH ARTICLE

## 1. INTRODUCTION

Due to the growth of Women working professionals and also the proven fact that women are the first caretakers of children; women working professionals are confronted with the challenges of equalization the role of motherhood as that of associate worker that generated the idiom referred to as work-family conflict. The ability to manage between work and private life has become a challenge owed to factors with increase in women workers participation, advancement in technology, generation Y, globalization, economic and social group changes. Family members sometimes not prepared for the role of caregiver nor with managing the symptoms of depression, so there is the potential to exacerbate family conflict. Older people notably susceptible to depression as to the increased likelihood that they are about to experience stressful life events that are to be associated with depression, like physical pathological state, pain and sorrow. This paper examined the relationship between work-family conflict and depression. This study also identifies whether there is a significant difference between work-family conflict and depression among women working professionals.

## 2. LITERATURE REVIEW

Gozalo et al. [1], done review of literatures from varied research scholars and specialists that explores the working mothers career development impact on work-family conflict. The findings reveal that work-family conflict consisting of your time, Strain and behavioural conflict have negative consequences on employed mothers career development.

Muzhumathi and Rani [2] investigates the intensity of work-family conflict making organizational role stress among professional women in Chennai. Using anonymous questionnaire, information was collected from 491 women professionals. The findings of the research states that stress among women professionals are greatly depending on work-family conflict.

MgbenkemdiEjike [3] investigated the family interference with work as a predictor of marital status conflict and depression among women in Enugu. Criterion sampling technique was used to select the sample. Data was collected from 114 mothers teaching in 2 schools in Enugu metropolis of Enugu state. The result stated that there is no vital relationship between predictor variables (family interference with work and marital status conflict) and also the criterion variable (depression).

Watson [4], states that depression results from faulty learning. Considering the very fact that working mothers

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# Watch dog system for water management

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**Abstract:** Water is one of the basic needs for the existence of the human, animal and plant lives on the earth. There will be a vital need for water all over the world soon. Due to many factors the water is being polluted in many ways. It is necessary to take utmost care of water for future generations. This paper presents a low cost framework design for monitoring of water quality. An IoT-based system to prevent water from getting spoil through environmental factors has been introduced. The water necessity, its dissemination and quality check by an embedded-based novel drew nearer approach is proposed. Water flow sensor, pH sensor, Ultra sonic sensor and PIC microcontroller were used for implementation to provide an accurate check on the availability and properties of water. This low cost real time water monitoring system can also do segregate availability of water for their external and internal uses.

**Keywords:** pH sensor; flow sensor; ultrasonic sensor; internet of things; IoT; Zigbee; PIC microcontroller; water monitoring system.

**Reference** to this paper should be made as follows: Jothikumar, R., SivaShanmugam, G. and Susi, S. (2019) 'Watch dog system for water management', *Int. J. Environment and Waste Management*, Vol. 24, No. 4, pp.396–404.

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# The Effect of Website Quality Factors on Consumer Delightfulness and Purchase Intentions: Substantiation from Indian E-Tail Visitors

K. R. Kumar, Y. C. Mohan, S. Susi, R. Jothikumar

***Abstract:*** ***With the increasing attractiveness of on-line shopping and being the preeminent occupied nation inside the world, India is one among the primary on-line showcases as of now and is likely going to turn into the most significant market inside what's to come. In that capacity, different examinations are committed to site quality and assessments. Investigation endeavours region unit, in any case, in need of understanding the use of web locales as to on-line benefactors conduct, especially Indian consumers. This examination created and by experimentation tried a unique model of the effect of site quality on customer realization and purchase aims. Results showed that site quality consolidates an immediate and positive effect on customer delightful, which customer accomplishment joins a positive effect on purchase intention. .***

***Keywords:*** ***Consumer delightfulness, Purchase intentions, e-tail website quality, India.***

## I. INTRODUCTION

Website quality comprises of five significant components: network, data quality, intelligence, energy, and learning. The results of this learning educate that the elements regarding availability, intuitiveness, liveliness, and learning affect client's conduct goal for inquiry merchandise/administrations. Network, data quality and intelligence are useful to reinforce the client's social aim for experience merchandise/administrations. In any case, just data quality and intuitiveness are critical to improve client's conduct aim in trustworthiness merchandise/administrations [1][2]the quality of our system in clarifying the effect of site quality on goal to buy on the Web, and that site quality builds apply distinctive effect on goal of introductory buy and goal of proceeded with buy. The outcomes propose that an online organization should concentrate on framework quality to build client transformation, and on administration quality for client maintenance. To acknowledge something in the profoundly aggressive internet business condition, it is imperative to comprehend the effect of site quality in upgrading client change and maintenance. Although various unexpected site characteristics have been recognized in the surviving site quality investigations, there is no brought together structure to arrange these properties and no examination done between client transformation and maintenance as per the diverse site quality traits and their changing effect. To see how an organization can expand client change as well as maintenance. The quality of our system in clarifying the effect of site quality on expectation to buy on the Web, and that site quality develops apply distinctive effect on goal of introductory buy and goal of proceeded with buy. An online organization should concentrate on framework quality to expand client transformation, and on administration quality for client maintenance. The purchaser item relationship appears to be like the connection between a client and a site. Client fulfilment, much the same as customer fulfilment, is deviated and non-direct. Substance and route have been recognized as key fixings when clients passed judgment on site quality, alarming website specialists and site experts to concentrate all the more intently on those properties[3]. Hanne Sørum et al, researching whether clients of amazing open sites are more fulfilled than those of low-quality sites[4]. Websites uncovers that the utilization of value criteria is profoundly specialized contrasted with the customary ease of use testing centre around productivity, adequacy and fulfilment of the real framework use by agents. They set forward proposals for further examination: consideration of genuine clients in genuine use setting in the assessment procedure could help push ahead the comprehension of the connection between site quality and end-client fulfilment; the absence of relationship between's site quality and client fulfilment could be a point of takeoff for basic talks of future usage of open data and administrations and extra and inside and out research of the estimation of site quality in the open area, client desires and the effects of site quality enhancements for client fulfilment.

Experimental outcomes show that framework quality and electronic administration quality have a noteworthy constructive outcome on the apparent estimation of shopper/merchant relationship; the apparent estimation of the purchaser/vender relationship has a huge beneficial outcome on online dedication; internet shopping knowledge does not apply a directing impact on the connection between site quality and the apparent estimation of buyer/dealer relationship[5].

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# Improving the Efficiency and Performance of Remote Application Monitoring System by PROXMOX Virtual Environment

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Virtualization is used to set of connections and configure various operating systems on a single host at the same time. Now-a-days many technologies prefer Open source platform for virtualized infrastructure because it provides an enormous space to the user to implement their own module. In this paper, we used piece based virtual machine (KVM) is the main open source finish virtualization arrangement on x86 equipment and it underpins all major working framework including Linux and windows.

**Keywords:** Remote Application Management, Hypervisor, Linux Container, Xen Server.

RESEARCH ARTICLE

## 1. INTRODUCTION

As the demand of Kernel-based Virtual Machine day to day, increases their awareness in this field as so far. In this paper, we start with what is KVM and on which it is based, how PROXMOX-virtual environment (VE) is in more demand with various server virtualization and the methods through which PROXMOX-VE can be implemented. The Kernel-based virtual Machine (KVM) is a total virtualization key for Linux on x86 equipment containing virtualization expansions. Utilizing KVM, Client can run numerous virtual machines progressively with no change Linux or windows pictures [1]. Each virtual machine has private virtualized hardware: (1) Network card (2) Disk (3) graphics connector and so on [2].

It is a flat out open source server virtualization administration arrangement. We can virtualize even the most requesting application workloads arranging on Linux and windows servers [3]. It blends the main piece based virtual machine (KVM) hypervisor and holder construct virtualization in light of official stage. PROXMOX VE is novel one there is no requirement for any extra administration server. It offers the office to handle virtual server innovation with the Linux open-VZ and KVM advances [4]. It eludes a web interface available after establishment on your which makes administration simple, more often than not requiring just a couple clicks. PROXMOX was created by PROXMOX server Solution in Australia and released under the General Public License [5].

Many technologies go with an open source virtualization platform for their virtualized correspondences to whole appropriate to use to all functionalities, encourage lessen costs and convey high security and consistency [6]. At the point when contrast with open source substitutes to VMware's, v-circle, Microsoft Hyper-V or Citrix Xen server, PROXMOX VE is the right server virtualization for us [7]. While leaning toward PROXMOX VE as option we gain the best to oversee physical, virtual and cross-stage platform.

## 2. LITERATURE SURVEY

In that paper they proposed a new virtualization method known as lightweight virtualization or containerization for the execution of Infrastructure as a Service (IaaS) in private cloud somewhat traditional hypervisor move towards to containerization boot up time of VMs is in seconds, size is in MB's and have insignificant CPU overhead [8]. Cloud suppliers include already used this approach for making PaaS, SaaS except IaaS. We know that, cloud computing is familiar on-demand service [9, 10]. Cloud computing is closely linked with net computing with three service models for example Infrastructure as a service (IaaS), Platform as Service (PaaS), software as a service (SaaS) and four operation model such as private, public, hybrid and community cloud. When come to PaaS in which customer

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# Electronic Voting System with Cloud Based High Performance Computing

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Traditional voting system has been replaced by electronic voting systems in most places increasingly. It is efficient, but not efficient enough in terms of cost and capacity. High Performance Computing (HPC) in Cloud computing is a relatively new concept which has been replacing the traditional systems. The HPC has been widely used over the recent years because of its efficiency, reliability, speed and cost. Whereas in the traditional super computing system a lot of cost is involved. The ability of integration of HPC with cloud provided enormous growth in the area of parallel processing and computing. This system may advocate to push the case of promoting electronic voting system for higher traffic scenarios with lower cost requirements. This paper proposes an idea of implementing a fully formed e-voting system integrated with both HPC and Cloud Computing.

**Keywords:** e-Voting, HPC, Cloud, Cost, Security, PAAS.

RESEARCH ARTICLE

## 1. INTRODUCTION

The primary system which every country relies on during its election period is the actual process of voting itself. In the last decade, the idea of changing the traditional voting system to electronic voting system has been gaining popularity and has already been implemented in several countries. The motivation behind this is to provide a secure, reliable and easy means of voting. Even though e-Voting system is available, there are many shortcomings which are to be tackled such as cost involved, speed in processing, etc.

Recently, high performance computing has come up, which is increasingly replacing traditional supercomputing processes. The motto of effective utilization of resources and lowering the cost of deploying applications has led to the discovery of cloud computing technology.

In this paper an improved e-Voting system has been developed by integrating HPC with cloud. So that the system is more efficient than the existing e-Voting system and overcomes the limitations faced.

## 2. E-VOTING SYSTEM

With advancement in technology and increase in the value of time in human's life a person will expect everything to be ultra-fast, won't like to waste time by standing in queue for voting, so the voting system has been changed to electronic voting system. But there are some limitations even in the electronic voting systems such as speed and scalability.

### 2.1. High Performance Computing

High performance computing is a parallel computing process used to solve complex problems in business, science and engineering and providing scalability, efficiency and reliability. When mass volume of users concurrently started to utilize the working system, parallel processing [1] to be emerged inorder to balance the execution. So in this work we carried all our modules through HPC algorithm and environment.

### 2.2. Cloud Computing

After getting HPC system resource flow was come into serialized but on-demand service is still in doubt. To meet successful outcome that too sensitive applications like E-voting system should be automated one. Then only execution flow and interrupt call will be possible to handle smoothly. In order to provide limitless resource and to support on-demand service we need emrging technique like cloud computing. Cloud computing is the concept of storing the data and accessing it from the server (Internet)

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# Collision of emotional intelligence and work centrality on work-life balance – a supportive work environment for working professionals

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**Abstract:** This study examined the differences among working professionals of nurses at varied levels of emotional intelligence and work centrality on work-life balance and its dimensions. One-way ANOVA was the statistical tools applied in this research for analysis. Analysis demonstrated that, significant differences were found between working professionals of nurses with low, average and high emotional intelligence and work centrality on the dimensions of work interference with personal life, personal life interference with work, work personal life enhancement and work life balance.

**Keywords:** emotional intelligence; work centrality; work-life balance.

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# Analyzes of Mouth Cancer Using Max-Min Composition in Soft Computing

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## ABSTRACT

The intention of making this paper is for the reason that uncertainty in medical reasoning has turned out to be in massive augmentation that it is complicated to be handled. So by means of lending a hand, that is where of the above mentioned health- open-handed system to agree on the concerned problematic factor of mouth cancer, totally using Max-Min composition is found out. Here these lethal types of the cancer, when measured up along with other different and dissimilar cancers that this age group , band that is the generation from this century individuals have and even had been and still being pretentious , in more better expanded way, they have an outcome on all human and beings over the whole wide universe. From the acquired in sequence info, that is from the clinician experts reporting that Smoking, rises of Tobacco products and Alcohol using up in excess or the shortage and avoid doing from too much fuss of drinking are the reason cause for Mouth cancer. Here these causes mentioned according to the clinicians' info are unsure, doubtful and situation to find the effects of mouth cancer are complex, so for this Max-min composition is worn to analyze this issue.

**Key words:** Max-min Composition, fuzzy relation, linguistic term, mouth cancer, tobacco.

## 1. INTRODUCTION

The healthcare organization has enormous volume of data and it is poorly utilized for obtaining the knowledge [1]. The healthcare systems now a day are playing vast role with the recent tools and technologies for disease predictions [2]. The healthcare organizations have more amounts of patient's data and not utilized properly for making the decisions [3]. In the current eras, medicinal system requires the most intellectual system for the diagnosis of the diseases [4]. Most of the passing away of ratio caused in our realm is for the reason that of cancer's growth among people. And, surrounded by those cancers, oral tumor receives the third position where it pretentious thousands of people for each year [5]. Here from our own insight over the issues and information's on this deadly syndrome ailment, our mother land India has one of the premier levels that are with the common most important, less important resultant and tertiary of citizens are being overstated to these fatal diseases. People that are under the better living, under scarcity poverty and even polished folks judge that Cancer is source starting point of smoking, to their disclosure even smokeless tobacco using habits has turned out to be so far above the ground risk, among the common people, that is found out to be the derivation cause for this complaint of the diseases. It comes in several divisions inside the mouth like oral cavity, tongue under jaws, cheek coating, beneath the teeth, neck side. Ingestion of intense alcohol, tobacco that could be cigarette, smokeless tobacco, masticating the betel nut, sometimes the family history, extremely severe sun coverage, diet these are the hazardous factors of gorge cancer. South and Southeast Asian countries in India are exceedingly overblown by this malignancy put side by side to last nation state [6]. A study of holder organizes that was unavailable from our state; it is also said to be extensively significant for the unrestricted healthiness importance of India.

Foremost, oral tumor is originating at the later stage where the terminations in squat behavior result. Secondly, bucolic neighborhoods are consistent with a lesser amount of proceeds. Low operate and diligence class gives low nourishment, be deficient in of wellbeing be concerned, unpleasant living circumstances are the motivation for it to be in association further on of tumour growth. Malignancies are inherited syndromes that are for the explanation that of cell growth peculiarly as the outcome of broken damaged DNA [7],[ 8]. Inauguration the senior than in sequence about the income reputation, India is surrounded by the countless low-income and central tip proceeds kingdom between countless other territory that the expenditures build the full kin lower poor quality line is a judgment of syndrome very time and all over again show the way to very far greater than the ground a

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# An Enhanced Peak to Average Power Ratio Reduction Scheme for Interleaved and Sub-Band Orthogonal Frequency-Division Multiple Access Frameworks with Low Complexity

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Orthogonal Frequency Division Multiplexing (OFDM) is a multicarrier transmission technique which has the major drawback namely Peak to Average Power Ratio (PAPR). The high PAPR influences the efficiency of the power amplifier. The Selected Level Mapping (SLM) gives reduced PAPR contrasted with different strategies but the complexity is high due to the necessity of various Inverse Fast Fourier Transform (IFFTs). With the end goal to reduce the complexity, the proposed design requires only one IFFT, the candidate signals are produced by cyclic shifting the original time domain signal then multiplying with the distinctive genuine positive numbers. At that point the candidate with most minimal PAPR is chosen for transmission.

**Keywords:** PAPR, OFDM, SLM, IFFT, Complexity, PTS.

RESEARCH ARTICLE

## 1. INTRODUCTION

OFDM is a high rate data transmission technique which yields the high ghastly efficiency, robustness to frequency selective fading, but it gives drawbacks like PAPR, frequency offset and so forth. This investigation deals with the PAPR issue. It happens when the time domain samples are linearly combined, the peak power will be higher than the average power which is applied to high power amplifier. This high PAPR makes the transmit power amplifier to go to saturation region which leads to in-band and out of band radiation i.e., makes amplifier to operate in the non-linear region.

In order to make the transmit power amplifier to operate in linear region, power back off has to be provided i.e., making the transmit power to be reduced so the high peaks of the signal is amplified in linear region of amplifier. Subsequently, PAPR reduction is one of the important accounts for OFDM frameworks.

The rest of this paper is sorted out as follows: Section 2 depicts the related survey. Section 3 depicts the PAPR and interleaved and sub-band Orthogonal Frequency-Division Multiple Access (OFDMA) uplink systems considered, while Section 4 presents an existing scheme, in Section 5 describes the low-complexity PAPR reduction scheme is proposed. Section 6 analyzes the computational complexity of the proposed architecture. Finally, Sections 7 and 8 exhibits the simulation results and furthermore gives some concise concluding comments.

## 2. REVIEW OF LITERATURE

Many methods have been proposed namely clipping [1, 2], coding [3] Selective level mapping [4], Partial transmit sequence (PTS) [5] and etc.

Wang et al. have proposed A Low-Complexity PAPR Reduction Scheme for OFDMA Uplink Systems. The proposed scheme requires only one IFFT and enables a solitary usage to be arranged to an assortment of OFDMA uplink designs, including sub-band OFDMA and interleaved OFDMA with different quantities of interleaved sub-carrier groups. In addition, a modified architecture has been proposed for enhancing the PAPR reduction performance by coordinating the proposed scheme with the traditional SLM scheme. However, the proposed scheme has a essentially lower computational complexity for most extreme 0.62 dB [6]

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# An Enhanced and Efficient Multi-View Clustering Trust Inference Approach by GA Model

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## ABSTRACT

Multi-view affinity propagation (MAP) methods are widely accepted techniques, measure the within-view clustering and clustering consistency. These suffer from similarity and correlation between clusters. The trust and similarity measured was introduced as a new approach to overcome the problem. But these approaches suffer from low accuracy and coverage due to avoidance of implicit trust. So, a framework called multi-view clustering based on gray affinity (MVC-GA) created by integrating both similarity and implicit trust. Similarity between two clusters is obtained by applying the Pearson Correlation Coefficient-based similarity. It utilizes the collaborative filter-based trust evaluation for each clustered view in terms of the similarity based on the gray affinity an algorithm. Classification of incomplete occurrences is addressed based on GA Function. Experiments on the benchmark data sets have been performed to validate the proposed framework. It is shown that MVC-GA can improve the multi-view clustering accuracy and coverage.

## KEYWORDS

Collaborative Filter, Gray Affinity, Multi-View Affinity Propagation, Pearson Correlation, Trust Evaluation

## 1. INTRODUCTION

Recent years have acknowledged the related views of data in many areas including recognition of patterns, mining social network data, link-based document databases, multilingual documents and so on. Here, the document content is represented as one view, whereas link relations are considered as another view in case of link-based document databases. As far as multilingual document is concerned, each language is considered as a separate view.

In this paper, we aim to design a novel framework that considers the balance between the similarity and coverage due to avoidance of implicit trust across different views ensuring high quality clustering results and consistent across different views. A two-term global objective function is developed, which simultaneously maximizes the rating coverage while reduces the complexity analysis across different views.

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# Efficient Heart Disease Prediction with Artificial Neural Network, Radial Basis Function and Case Based Reasoning

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**Abstract:** Heart disease is one of the most hazardous diseases to human which shows the way to death all over the world since 15 year. Many researches have been done with the techniques of knowledge discovery in various fields for heart disease prediction and have shown the acceptable levels of accuracy. By investigating the survey of those accuracy levels, this research paper is proposed to help doctors not only to diagnose and predict the heart disease by achieving accuracy levels but also helps to prescribe the medicine successfully according to the predicted disease. In this paper assessment is done by two methodologies Artificial Neural Network (ANN) by testing the datasets, Case Based Reasoning (CBR) image similarity search by mapping the similarities of images of old patients stored in database for prediction of heart disease. The result of the evaluation of CBR is also implemented for prescribing medicine from the history of old patients with generalized regression neural network and radial basis function successfully.

**Key words:** Artificial Neural Network (ANN), Case Based Reasoning (CBR), Generalized Regression Neural Network (GRNN), Radial Basis Function (RBF), data base

## INTRODUCTION

Cardiovascular disease has become the major challenge for health care unit (doctors, medical centres, hospitals). Cardiovascular disease or heart disease is a class of disease that involves the heart, blood vessels (arteries, capillaries and veins) (WHO, 2016; Tsai and Watanabe, 1998). The American heart association has estimated that 17.3 million people die because of cardiovascular disease per year, particularly heart attacks, strokes, coronary heart disease, pulmonary heart disease, etc. (WHO, 2016). This global cause of death can increase the number to grow >23.6 million by 2030. The populations affected by heart diseases are mostly in Low and Middle-Income Countries (LIMC) where 80% of these deaths occur usually at younger ages than in higher income countries (Tsai and Watanabe, 1998).

To prevent the cause of death in LIMC and reduce in number, diagnosis and prediction is very important but it has never been an easy task for accurate diagnosis of heart diseases. Lots of research is being done for diagnosis of heart disease but still the complications in various factors are causing delay in diagnosis of heart disease and deciding the accuracy. Like for instance the symptoms from clinic, the practical and pathological symptoms of heart diseases are linked with the human organs including heart which shows signs of different diseases in human body. Perhaps, these signs have similar symptoms of heart diseases as well. Researchers are facing difficulties to find accuracy not only in diagnosis but also in prescribing the correct medicine for the particular symptom of heart diseases.

From the survey of different researchers, various techniques have been used for diagnosis. Recently integrated clustering more than one data mining techniques can improve data mining techniques performance in the diagnosis of heart disease patients (Shouman *et al*., 2013). For the diagnosis of congenital heart disease, Reategui *et al*. (1997) proposed a model by integrating case-based reasoning with neural network. Fuzzy reasoning optimized by genetic algorithm was used for the classification of myocardial heart disease (Tsai and Watanabe, 1998). All the above studies by implementing different techniques are able to diagnose the heart disease to a certain extent either for one specific heart disease or for some common heart diseases. But no research has been done which identifies the heart disease with utmost accuracy and also a technique which helps the doctors to provide the suitable treatment with the right prescription of medicine.

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# Techniques Tanimoto correlated feature selection system and hybridization of clustering and boosting ensemble classification of remote sensed big data for weather forecasting

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ARTICLE INFO

*Keywords:*
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ABSTRACT

Weather forecasting has been done using various techniques but still not efficient for handling the big remote sensed data since the data comprises the more features. Hence the techniques degrade the forecasting accuracy and take more prediction time. To enhance the prediction accuracy (PA) with minimal time, Tanimoto Correlation based Combinatorial MAP Expected Clustering and Linear Program Boosting Classification (TC-CMECLPBC) Technique is proposed. At first, the data and features are gathered from big weather database. After that, relevant features are selected through finding the similarity between the features. Tanimoto Correlation Coefficient is used to find the similarity between the features for selecting the relevant features with higher feature selection accuracy. After selecting the relevant features, MAP expected clustering process is carried out to group the weather data for cluster formation. In this process, a number of cluster and cluster centroids are initialized. In this clustering process, it includes two steps namely expectation (E) and maximization (M) to discover maximum probability for grouping data into the cluster. After that, the clustering result is given to Linear Program boosting classifier to improve the prediction performance. In this classification, the weak classifier results are boosted to create strong classifier. The results evident that the TC-CMECLPBC technique enhance the PA with lesser time and false positive rate (FPR) than the conventional methods.

## 1. Introduction

Weather forecasting is mainly used for predicting the dynamic changes in atmospheric conditions. Weather data are collected from some locating devices such as aircraft, satellites and so on. This information is then transmitted to the meteorological centers where the data are collected and analyzed for predicting the future conditions. The data mining techniques namely clustering and classification are utilized for predictive analysis from large databases. These techniques help the meteorological centers to offer efficient future events prediction results.

In [1], a conjunct space cluster-based adaptive neuro-fuzzy inference system based tropical cyclone forecasting (CF-ANFIS) was introduced. The CF-ANFIS effectively predicted the tropical cyclones with superior accuracy. But, the CF-ANFIS failed to minimize the FPR. To enhance the weather forecasting accuracy, a hybrid neural model called multilayer perceptron (MLP) and radial basis function (RBF) was designed in [2]. To train the individual and hybrid neural networks, the input features are utilized. Output layer includes of two neurons to symbolize rainy and dry weathers. Though the model minimizes training time, the error detection and minimization were not performed.

A sliding window algorithm implemented with artificial neural networks (ANN) was designed in [3] for increasing the weather condition forecasting accuracy. The algorithm did not minimize the weather prediction time. In [4], a dynamic self-organized multilayer neural network with immune algorithm (DSMIA) was designed to forecasting the weather signals. In this method, the nonstationary weather signals have been transformed to stationary, followed by 5-steps ahead prediction. The prediction results improvements are observed with the mean value of error (RMS) and signal to noise ratio (SNR). Though the algorithm increases the optimal weather forecasting results with less time complexity, the feature selection was not performed.

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# Leveraging Self-Adaptive Dynamic Software Architecture

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**Abstract:-** Software systems are growing complex due to the technological innovations and integration of businesses. There is ever increasing need for changes in the software systems. However, incorporating changes is time consuming and costly. Self-adaptation is therefore is the desirable feature of any software that can have ability to adapt to changes without the need for manual reengineering and software update. To state it differently robust, self adaptive dynamic software architecture is the need of the hour. Unfortunately, the existing solutions available for self-adaptation need human intervention and have limitations. The architecture like Rainbow achieved self-adaptation. However, it needs to be improves in terms of quality of service analysis and mining knowledge and reusing it for making well informed decisions in choosing adaptation strategies. In this paper we proposed and implemented Enhanced Self-Adaptive Dynamic Software Architecture (ESADSA) which provides automatic self-adaptation based on the runtime requirements of the system. It decouples self-adaptation from target system with loosely coupled approach while preserves cohesion of the target system. We built a prototype application that runs in distributed environment for proof of concept. The empirical results reveal significance leap forward in improving dynamic self-adaptive software architecture.

***Index terms*** *– Self-adaptation, dynamic software architecture, reusability, maintainability*

*****

## I. INTRODUCTION

Software systems drive the business in this age of digital world. The modern software systems should be equipped with highly desired features in a distributed environment. Therefore software systems must become more versatile, flexible, resilient, dependable, service-oriented, mashable, inter-operable, continuously available, robust, decentralized, energy-efficient, recoverable, customizable, configurable, self-healing, configurable and self-optimizing by adapting to changing operational contexts and environments. Traditional software is implemented under static decisions in analysis and design time based on assumptions about the requirements and runtime environment. Therefore any unanticipated changes to the requirements or runtime environment will lead to a manual maintenance process, which is unacceptable in critical systems. The existing self-adaptive software architectures are utility based and making them quality-aware is a challenging problem to be addressed. Self-adaptive software modifies its own behavior at runtime in response to changes in its operating environment. By operating environment, we mean anything observable by the software system, such as end-user input, external hardware devices and sensors, or program instrumentation. Application developers must answer several questions when developing a self-adaptive software system. Under what conditions does the system undergo adaptation? Should the system be open-adaptive or closed-adaptive? What type of autonomy must be supported? How often is adaptation considered? Under what circumstances is adaptation cost-effective?

A system might, for example, modify itself to improve system response time, recover from a subsystem failure, or incorporate additional behavior during runtime. A system is open-adaptive if new application behaviors and adaptation plans can be introduced during runtime. A system is closed-adaptive if it is self-contained and not able to support the addition of new behaviors. A wide range of autonomy might be needed, from fully automatic, self-contained adaptation to human-in-the-loop. A wide range of policies can be used, from opportunistic, continuous adaptation to lazy, as-needed adaptation. The benefits gained from a change must outweigh the costs associated with making the change. Costs include the performance and memory overhead of monitoring system behavior, determining if a change would improve the system, and paying the associated costs of updating the system configuration. A wide range of strategies can be used, from continuous, precise, recent observations to sampled, approximate, historical observations.

## II. RELATED WORK

Many researchers contributed towards dynamic self-adaptive software architectures. For instance architecture-based solutions [7], [24], [29] and self-healing systems [35] were explored by characterizing the style requirements of systems. The following sub sections provide more details of the review.

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# ENHANCED FAST AND SECURE HYBRID ENCRYPTION ALGORITHM FOR MESSAGE COMMUNICATION

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***Abstract*—This paper puts forward a safe mechanism of data transmission to tackle the security problem of information which is transmitted in Internet. The encryption standards such as DES (Data Encryption Standard), AES (Advanced Encryption Standard) and EES (Escrowed Encryption Standard) are widely used to solve the problem of communication over an insecure channel. With advanced technologies in computer hardware and software, these standards seem not to be as secure and fast as one would like. In this paper we propose a hybrid encryption technique which provides security to both the message and the secret key. The Symmetric algorithm used has two advantages over traditional schemes. First, the encryption and decryption procedures are much simpler, and consequently, much faster. Second, the security level is higher due to the inherent poly-alphabetic nature of the substitution mapping method used here, together with the translation and transposition operations performed in the algorithm. Asymmetric algorithm RSA is worldwide known for its high security. In this paper a detailed report of the process is presented and analysis is done comparing our proposed technique with familiar techniques***

***Keywords-component;* Cipher text, Encryption, Decryption, Substitution, Translation.**

## I. INTRODUCTION

In open networked systems, information is being received and misused by adversaries by means of facilitating attacks at various levels in the communication. The encryption standards such as DES (Data Encryption Standard) [6], AES (Advanced Encryption Standard) [7], and EES (Escrowed Encryption Standard) [8] are used in Government and public domains. With today's advanced technologies these standards seem not to be as secure and fast as one would like. High throughput encryption and decryption are becoming increasingly important in the area of high-speed networking [9].With the ever-increasing growth of multimedia applications, security is an important issue in communication and storage of images, and encryption is one the ways to ensure security. Image encryption has applications in inter-net communication, multimedia systems, medical imaging, telemedicine, and military communication. There already exist several image encryption methods. They include SCAN-based methods, chaos-based methods, tree structure-based methods, and other miscellaneous methods. However, each of them has its strength and weakness in terms of security level, speed, and resulting stream size metrics. We hence proposed the new encryption method to overcome these problems [1].

This paper discusses a new technique of Hybrid encryption algorithm which combines a symmetric algorithm FSET (Fast and Secure Encryption Technique) proposed by Varghese Paul [2] and asymmetric algorithm RSA. The FSET algorithm is a direct mapping poly alphabetic Symmetric-key encryption algorithm. Here, direct substitution mapping and subsequent translation and transposition operations using X-OR logic and circular shifts that results in higher conversion speed are used. The block size is 128 bits (16 characters) and the key size is also 128 bits (16 characters). A comparison of the proposed encryption method with DES and AES is shown in table. 2. The asymmetric RSA algorithm is developed by MIT professors: Ronald L. Rivest, Adi Shamir, and Leonard M. Adleman in 1977 [5]. RSA gets its security from factorization problem. Difficulty of factoring large numbers is the basis of security of RSA.

In this Paper the actual message to be sent is encrypted and decrypted using the FSET algorithm which has been modified accordingly for higher efficiency. RSA is used for encryption and decryption of the secret key which is used in the encryption (FSET) of the actual data to be transmitted. All the limitations in FSET are overcome in this implementation. The security of the secret key is handled by the by the RSA. Here the FSET can handle multimedia data also. Multimedia files like images, videos, audios etc. can be effectively encrypted. Also other files like MS word, PDF, almost all files can be transmitted securely using the FSET proposed. The detailed implementation is explained in the later sections..

## II. THE HYBRID ENCRYPTION ALGORITHM

A hybrid encryption algorithm has the advantages of both the symmetric and asymmetric algorithms. The complete process can be viewed in the figure 1. This process involves the fallowing steps

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# ENHANCED SECURE ALGORITHM FOR MESSAGE COMMUNICATION

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## ABSTRACT

*This paper puts forward a safe mechanism of data transmission to tackle the security problem of information which is transmitted in Internet. The encryption standards such as DES (Data Encryption Standard), AES (Advanced Encryption Standard) and EES (Escrowed Encryption Standard) are widely used to solve the problem of communication over an insecure channel. With advanced technologies in computer hardware and software, these standards seem not to be as secure and fast as one would like. In this paper we propose a encryption technique which provides security to both the message and the secret key achieving confidentiality and authentication. The Symmetric algorithm used has two advantages over traditional schemes. First, the encryption and decryption procedures are much simpler, and consequently, much faster. Second, the security level is higher due to the inherent poly-alphabetic nature of the substitution mapping method used here, together with the translation and transposition operations performed in the algorithm. Asymmetric algorithm RSA is worldwide known for its high security. In this paper a detailed report of the process is presented and analysis is done comparing our proposed technique with familiar techniques*

## KEYWORDS

*Cipher text, Encryption, Decryption, Substitution, Translation.*

## 1. INTRODUCTION

In open networked systems, information is being received and misused by adversaries by means of facilitating attacks at various levels in the communication. The encryption standards such as DES (Data Encryption Standard) [6], AES (Advanced Encryption Standard) [7], and EES (Escrowed Encryption Standard) [8] are used in Government and public domains. With today's advanced technologies these standards seem not to be as secure and fast as one would like. High throughput encryption and decryption are becoming increasingly important in the area of high-speed networking [9].With the ever-increasing growth of multimedia applications, security is an important issue in communication and storage of images, and encryption is one the ways to ensure security. Image encryption has applications in inter-net communication, multimedia systems, medical imaging, telemedicine, and military communication. There already exist several image encryption methods. They include SCAN-based methods, chaos-based methods, tree structure-based methods, and other miscellaneous methods. However, each of them has its strength and weakness in terms of security level, speed, and resulting stream size metrics. We hence proposed the new encryption method to overcome these problems [1].

Communication is a major impact in today's business. The communication devices transmit large amount of data with high security. In business, the amount approximately worth over $1

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# Software Architecture Based Self-Adaptation

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**Abstract:** Increasingly, systems must have the ability to self-adapt to meet changes in their execution environment. Unfortunately, existing solutions require human oversight, or are limited in the kinds of systems and the set of quality-of-service concerns they address. Our approach, embodied in a system called Rainbow, uses software architecture models and architectural styles to overcome existing limitations. It provides an engineering approach and a framework of mechanisms to monitor a target system and its environment, reflect observations into a system's architecture model, detect opportunities for improvement, select a course of action, and effect changes in a closed loop. The framework provides general and reusable infrastructures with well-defined customization points, allowing engineers to systematically customize Rainbow to particular systems and concerns.

**Keywords:** Architecture Description Languages (ADLs), SQL, HTTP, RPC.

## I. INTRODUCTION

Imagine a world where a software engineer could take an existing software system and specify an objective, conditions for change, and strategies for adaptation to make that system self-adaptive where it was not before. Furthermore, imagine that this could be done in a few weeks of effort and be sensitive to maintaining business goals and other properties of interest. For example, an engineer might take an existing client–server system and make it self-adaptive with respect to a specific performance concern such as high latency. He might specify an objective to maintain request-response latency below some threshold, a condition to change the system if the latency rises above the threshold, and a few strategies to adapt the system to fix the high-latency situation. Another engineer might make a coalition-of-services system self-adaptive to network performance fluctuations, while limiting cost of operating the infrastructure. Still another engineer might make a cluster of servers self-adaptive to certain security attacks. Today, when increasingly systems have the requirement to self-adapt with minimal human oversight, it is becoming necessary to meet this vision. Systems must cope with variable resources, system errors, and changing user priorities, while maintaining, as best they can, the goals and properties envisioned by the engineers and expected from the users. Software engineers lack the tools and techniques to engineer a system with self-adaptation.

Engineers and researchers alike have responded to and met this self-adaptation need in somewhat limited forms through programming language features such as exceptions and in algorithms such as fault-tolerant protocols. But these mechanisms are often specific to the application, tightly bound to the code, and usually provide only localized treatment of system errors. As a result, self-adaptation for today's systems is costly to build, often taking many man-months to retrofit systems. In contrast, the vision outlined above requires an approach that makes it possible for engineers to easily define adaptation policies that are global in nature, and that take into consideration business goals and quality attributes. In particular, we require that engineers be able to augment existing systems to be self-adaptive without rewriting them from scratch, that self-adaptation policies and strategies can be reused across similar systems, that multiple sources of adaptation expertise can be synergistically combined, and that all of this can be done in ways that support maintainability, evolution, and analysis.

In this chapter, we describe an approach to achieving these goals using architecture-based self-adaptation techniques. In particular, our approach abstracts observed behavior of an executing system into properties of an architectural model, where they can be reasoned about using a variety of existing architectural analysis techniques. The results of these analyses can then be used to reason about changes that should be made to a system to improve or correct the system's achievement of the quality attributes. Our approach is embodied in a system called Rainbow, which focuses on two challenges to achieve cost-effective self-adaptation: (1) an approach and mechanism that reduces engineering effort and (2) representation of adaptation knowledge. Rainbow provides an engineering approach and a framework of mechanisms to monitor a system and its executing environment, reflect observations into an

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# A Review on Present State-of-the-Art of Self Adaptive Dynamic Software Architecture

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***Abstract***— Enterprises across the world are increasingly depending on software to drive their businesses. It is more so with distributing computing technologies in place that pave way for realization of seamless business integration. On the other hand those complex software systems are expected to adapt changes dynamically without causing administrative overhead. Moreover software systems should exhibit fault tolerance, location transparency, availability, scalability self-adaptive capabilities to fit into present enterprise business use cases. To cope with such expectations software systems are to be built with a dynamic and self-adaptive software architecture which drives home quality of services perfectly. The point made here is that software systems are facing unprecedented level of complexity and aware of self-adaptation. Therefore it is essential to have technical knowhow pertaining to self adaptive dynamic software architecture. Towards this end, we explore present state-of-the-art of this area in software engineering domain. It throws light into dynamic software architectures, distributed component technologies for realizing such architectures, besides dynamic software composition and metrics to evaluate the quality of dynamic adaptation.

***Keywords*** – *Software engineering, dynamic software architecture, self-adaptation, metrics*

*****

## I. INTRODUCTION

Software development process has undergone tremendous changes since its inception. These changes are in tune with the ever increasing needs of clients and machine critical applications. Software architectures utilize rich set of abstractions and idioms. These abstractions and idioms can represent different scenarios of the system besides the nature of interactions among the components [6]. Allen *et al.* [7] opined that the most challenging factor of complex software architecture is the need for dynamic adaptation at runtime to the changing needs. They also conceived the possibilities of building such architectures that are robust to changes. According to Shaw and Clements [9] in 1980s software architecture emerged prominent in software engineering discipline. Later on the self-adaptive and dynamic software architectures were conceived. Towards self adaptive dynamic software architecture distributed computing technologies contributed in the recent past. Distributed Component Object Model (DCOM) and Windows Communication Foundation (WCF) are technologies from Microsoft for realizing dynamic software composition. Common Object Request Broker Architecture (CORBA) is from Object Management Group (OMG) which is another such technology. In Java platform distributed technologies include Enterprise Java Beans (EJB), Java Messaging Service (JMS), Remote Method Invocation (RMI) and Web Services. These technologies are being used to realize dynamic software architectures that can self-adapt to the runtime needs of complex software systems.

TABLE I – Acronyms/Abbreviations

| ACRONYM/ABBREVIATION | DESCRIPTION |
|---|---|
| (RMI) | Remote Method Invocation |
| (JMS) | Java Messaging Service |
| (EJB) | Enterprise Java Beans |
| (OMG) | Object Management Group |
| (CORBA) | CommonObject Request Broker Architecture |
| (WCF) | Windows Communication Foundation |
| (DCOM) | Distributed Component Object Model |
| pIA | Performance Influence on |
| pQoR | Performance Quality of Response |
| pLatency | Performance Latency |
| UiAI | User interaction adaptivity index |
| AiAI | Administrator Interaction Adaptivity Index |
| SDG | Storage Dimension Growth |
| IALFL | Influence of the Adaptive Logic on the Functional Logic |
| IFLAL | Influence of the Functional Logic on the Adaptive Logic |
| MaAC | Minimum Architectural Adaptive Cost |
| aSCI | Architectural Separation of Concerns Index |
| UML | |
| ADLs | Architecture Description Languages |
| DSSA | A Domain Specific Software |

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(5)

# A Review of Adaptive Dynamic with Software Architecture

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**Abstract**

Enterprises across the world are increasingly depending on software to drive their businesses. It is more so with distributing computing technologies in place that pave way for realization of seamless business integration. On the other hand those complex software systems are expected to adapt changes dynamically without causing administrative overhead. Moreover software systems should exhibit fault tolerance, location transparency, availability, scalability self-adaptive capabilities to fit into present enterprise business use cases. To cope with such expectations software systems are to be built with a dynamic and self-adaptive software architecture which drives home quality of services perfectly. The point made here is that software systems are facing unprecedented level of complexity and aware of self-adaptation. Therefore it is essential to have technical knowhow pertaining to self adaptive dynamic software architecture. Towards this end, we explore present state-of-the-art of this area in software engineering domain. It throws light into dynamic software architectures, distributed component technologies for realizing such architectures, besides dynamic software composition and metrics to evaluate the quality of dynamic adaptation.

**Keywords:** Software engineering, dynamic software architecture, self-adaptation, metrics

## INTRODUCTION

Software development process has undergone tremendous changes since its inception. These changes are in tune with the ever increasing needs of clients and machine critical applications. Software architectures utilize rich set of abstractions and idioms. These abstractions and idioms can represent different scenarios of the system besides the nature of interactions among the components [6]. Allen et al. [7] opined that the most challenging factor of complex software architecture is the need for dynamic adaptation at runtime to the changing needs. They also conceived the possibilities of building such architectures that are robust to changes. According to Shaw and Clements [9] in 1980s software architecture emerged prominent in software engineering discipline. Later on the self-adaptive and dynamic software architectures were conceived. Towards self adaptive dynamic software architecture distributed computing technologies contributed in the recent past. Distributed Component Object Model (DCOM) and Windows Communication Foundation (WCF) are technologies from Microsoft for realizing dynamic software composition. Common Object Request Broker Architecture (CORBA) is from Object Management Group (OMG) which is another such technology. In Java platform distributed technologies include Enterprise Java Beans (EJB), Java Messaging Service (JMS), Remote Method Invocation (RMI) and Web Services. These technologies are being used to realize dynamic software architectures that can self-adapt to the runtime needs of complex software systems.

Since changes to software frequently are a costly affair, there should be an architecture that can dynamically adapt to changes. Therefore architectural design needs to be made keeping this need in mind. Moreover an architectural design should have structure, design constraints, style, behaviour, and refinement [22]. Towards realizing this some architectural design decisions are to be made. Jansen & Bosch [10] proposed a model for design decisions at architecture level. The architectural design decisions involve motivation, problem, decision, trade-off, cause, and architectural modification that lead to satisfactory solutions. A Domain Specific Software Architecture (DSSA) was proposed by Hayes-Roth et al. [11] for adaptive intelligent systems. The reference model they proposed contains architecture styles pertaining to blackboard, pipe and filter. Software architecture styles were also represented using graph grammars as explored in [12]. Taylor et al. [15] proposed an architecture that involves both component and message-based style of functionality. Distributed computing architectures were defined for wearable devices as well [18]. Architectural compatibility also required dynamic compilation as discussed in [19]. Some researchers focused on dynamic software architectures in the presence of cloud computing [16], [20], [23], [28]. As software architecture is linked to business goals in the recent past there is ever growing need for self-adaptive dynamic software architecture [44].

### Dynamic Structure in Software Architectures

Software architectures are defined by using Architecture Description Languages (ADLs) [3]. Architecture of a system refers to a set of organized components, their relationships, design principles and other aspects that govern the design and implementation of the system. Dynamic software architecture, as the name implies, is the architecture that will undergo changes while the system is under execution. ADL is used to describe the architecture of a system. One such language is Darwin which involves components and services, instantiation and binding, configurations, lazy instantiation, direct dynamic instantiation, and dynamic binding [2]. Muccini et al. [1] used

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# A Review of Adaptive Dynamic with Software Architecture

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**Abstract**

Enterprises across the world are increasingly depending on software to drive their businesses. It is more so with distributing computing technologies in place that pave way for realization of seamless business integration. On the other hand those complex software systems are expected to adapt changes dynamically without causing administrative overhead. Moreover software systems should exhibit fault tolerance, location transparency, availability, scalability self-adaptive capabilities to fit into present enterprise business use cases. To cope with such expectations software systems are to be built with a dynamic and self-adaptive software architecture which drives home quality of services perfectly. The point made here is that software systems are facing unprecedented level of complexity and aware of self-adaptation. Therefore it is essential to have technical knowhow pertaining to self adaptive dynamic software architecture. Towards this end, we explore present state-of-the-art of this area in software engineering domain. It throws light into dynamic software architectures, distributed component technologies for realizing such architectures, besides dynamic software composition and metrics to evaluate the quality of dynamic adaptation.

**Keywords:** Software engineering, dynamic software architecture, self-adaptation, metrics

## INTRODUCTION

Software development process has undergone tremendous changes since its inception. These changes are in tune with the ever increasing needs of clients and machine critical applications. Software architectures utilize rich set of abstractions and idioms. These abstractions and idioms can represent different scenarios of the system besides the nature of interactions among the components [6]. Allen et al. [7] opined that the most challenging factor of complex software architecture is the need for dynamic adaptation at runtime to the changing needs. They also conceived the possibilities of building such architectures that are robust to changes. According to Shaw and Clements [9] in 1980s software architecture emerged prominent in software engineering discipline. Later on the self-adaptive and dynamic software architectures were conceived. Towards self adaptive dynamic software architecture distributed computing technologies contributed in the recent past. Distributed Component Object Model (DCOM) and Windows Communication Foundation (WCF) are technologies from Microsoft for realizing dynamic software composition. Common Object Request Broker Architecture (CORBA) is from Object Management Group (OMG) which is another such technology. In Java platform distributed technologies include Enterprise Java Beans (EJB), Java Messaging Service (JMS), Remote Method Invocation (RMI) and Web Services. These technologies are being used to realize dynamic software architectures that can self-adapt to the runtime needs of complex software systems.

Since changes to software frequently are a costly affair, there should be an architecture that can dynamically adapt to changes. Therefore architectural design needs to be made keeping this need in mind. Moreover an architectural design should have structure, design constraints, style, behaviour, and refinement [22]. Towards realizing this some architectural design decisions are to be made. Jansen & Bosch [10] proposed a model for design decisions at architecture level. The architectural design decisions involve motivation, problem, decision, trade-off, cause, and architectural modification that lead to satisfactory solutions. A Domain Specific Software Architecture (DSSA) was proposed by Hayes-Roth et al. [11] for adaptive intelligent systems. The reference model they proposed contains architecture styles pertaining to blackboard, pipe and filter. Software architecture styles were also represented using graph grammars as explored in [12]. Taylor et al. [15] proposed an architecture that involves both component and message-based style of functionality. Distributed computing architectures were defined for wearable devices as well [18]. Architectural compatibility also required dynamic compilation as discussed in [19]. Some researchers focused on dynamic software architectures in the presence of cloud computing [16], [20], [23], [28]. As software architecture is linked to business goals in the recent past there is ever growing need for self-adaptive dynamic software architecture [44].

### Dynamic Structure in Software Architectures

Software architectures are defined by using Architecture Description Languages (ADLs) [3]. Architecture of a system refers to a set of organized components, their relationships, design principles and other aspects that govern the design and implementation of the system. Dynamic software architecture, as the name implies, is the architecture that will undergo changes while the system is under execution. ADL is used to describe the architecture of a system. One such language is Darwin which involves components and services, instantiation and binding, configurations, lazy instantiation, direct dynamic instantiation, and dynamic binding [2]. Medvidovic et al. [1] used

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# Enhanced Self Adaptive Dynamic Software Architecture with Heuristic Approach

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Abstract

The Enhanced Self-Adaptive Dynamic Software Architecture (ESA-DSA) proposed by us in our prior work is enhanced in this paper with heuristic based approach that makes use of both historical data and QoS needs in order to have knowledge based self-adaptation. An algorithm by name Heuristic Self-Adaptation (HAS) is proposed and implemented. AWS cloud is used to have experiments on real time target system that serve millions of users with Service Level Agreements (SLAs). Influenced by Rainbow framework, the enhanced self-adaptive framework performs QoS and knowledge based approach to save heuristics that help in making well informed decisions from time to time. We built a prototype application to demonstrate proof of the concept. The experimental results revealed that the ESADSA is effective in distributed computing

Index Terms – Software architecture, Dynamic Software Architecture, self-adaptation

## 1. Introduction

Software systems tend to change from time to time. Based on the specified objectives, changed requirements and criteria for change and the necessity of self-adaptation software engineers need to work towards fulfilling the system right from the beginning. However systems are generally built in the real world without considering self-

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# A STUDY OF ADAPTIVE CLUSTER DISTANCE BOUNDING FOR HIGH-DIMENSIONAL INDEXING

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*Abstract -Clustering is an important technique for examining data analysis and concentric effort has been taken in different domains including statistics, pattern recognition and data mining for decades. High Dimensional Information retrieval provides significant way to manage the use of various data sources for efficient learning and feature selection. Clustering high-dimensional mathematical data remains a challenging issue. When clustering high dimensional data, the efficiency and accuracy of clustering are very poor. To improve the quality and incorporate machine learning tasks hubness mechanism is used. Hubness is a mechanism related to vector-space data deliberated by the propensity of certain data points also referred to as the hubs with a small expanse to numerous added data points in high dimensional spaces which is associated to the phenomenon of distance concentration. The performance of hubness on high dimensional data unable to cope with many machine learning tasks namely classification, nearest neighbor, outlier detection and clustering. Hubness is a newly unknown problem of machine learning in high dimensional data spaces, which is unsuccessful in automatically determining the number of clusters in the data*

## I. INTRODUCTION

Clustering in high-dimensional spaces is a repeated problem in many domains like pattern recognition and data mining. Later, clustering analysis also helps in gaining the deep knowledge from the distribution of data. Clustering is the process of combining the similar objects together while objects in different groups are dissimilar to the objects of other clusters depending on the predefined similarity measurement. It is an effective technique for analyzing the patterns of high dimensional non-linear data.Clustering real-world data sets have regulardis advantages which are known as curse of dimensionality. Many real-world data sets are comprised of high dimensional feature space. Normally, many algorithms do not produce significant results due to the inherent sparsity of the data space.

Clustering on high dimensional data have low accuracy and quality of the clustering algorithm is poor because of the data objects from a variety of clusters in various subspaces containing dissimilar groupings of dimensions. To improve the quality and to incorporate the machine learning tasks, hubness mechanism is used. Hubness is one of the new issues of machine learning in high dimensional data spaces that could not find out the number of clusters in the data. Nowadays, it is a very challenging job to cluster the non-linear objects. In this research, the above issues are solved. The objective of the proposed work is to improve the efficiency and quality of the cluster in the search retrieval.And also overcomes the clustering based hubness problem and handles the non-linear relationships in high dimensional data variables.

## II CLUSTERING ON HIGH DIMENSIONAL DATA

Clustering is one of the data mining techniques for diversity range of applications. Cluster analysis help in combining the items together which appears as similar one. Clustering is an unverified learning process that partitions the data such that similar data items grouped together in sets referred as clusters which are in a way that they are highly important for identifying the patterns in data. Clustering is the efficient technique for examining the

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# An Efficient Defect Estimation and Inpainting Based on Sparse Representation

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***Abstract-*** In this paper, a simple defect identification followed by efficient inpainting that compensates the missing details in defect images, with transform coefficients is presented. This proposed scheme initially decomposes the given defect image, coefficient-wise based on geometrical and textural primitives present in the difference between original and its Gaussian smoothed images. Then simple defect estimation is carried out based on (i) strengthening the edge coefficients, and (ii) location of transition between edge and texture primitives. The basic concept behind these procedures is the contribution of orthogonal polynomials model (OPM) coefficients as a sparse representation, towards low level primitives edge and texture. A simple structure inpainting is then employed with edge magnitude and orientation, for the defected edge coefficients. With homogeneity among orthogonal polynomials texture coefficients, a texture inpainting is then proposed with statistical analysis. The proposed inpainting scheme is evaluated with standard performance measures and compared with recent inpainting methods.

***Keyword:*** *Defect Estimation, Image Decomposition, texture coefficients, Structure Filling, Texture Inpainting.*

## 1. Introduction

Image inpainting is a process of compensating missing details in image regions or repairing damaged portions in a digital image. In recent years, inpainting in digital images has gained significant attraction, due to its need in variety of applications such as restoration, editing, computer graphics, film post production etc. Based on the technique involved, image inpainting can be classified into four categories: (i) Partial Differential Equation based algorithms (ii) Exemplar based inpainting and Texture Synthesis, (iii) Sparse representation based algorithms and (iv) Hybrid Approach. The partial differential equation (PDE) based inpainting works to fill the missing regions with a diffusion process and propagates the low level image information from the border to the interior, via simulation process by solving PDE of higher order. Notable works with PDE can be referred to [1-5]. The PDE based

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# A Framework for Iris Localization based on Greedy Snake Model

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***Abstract***—This paper proposes a framework for iris localization with greedy snake model to accurately extract iris region and compensate for the accuracy problem caused by the non-standard circle characteristics of the iris. Initially upper eyelashes are detected and removed with mathematical computational basis operators within a windowed eye region. In the proposed scheme, the non circular pupil contour is detected in an iterative fashion with a novel edge based two stage greedy snake model. In the first stage, the pupil-iris edge is coarsely located with mathematical computational gradient detector and in the second stage, the precise pupil contour is detected with greedy snake in which the contour is initialized within the pupil and deformed into new shape in response to the two controlling force models, introduced as internal and external forces to properly activate the contour. The image gradient and the curvature are utilized together to determine the speed and direction of the contour deformation,while for the localization of limbus boundary vertical edges are detected between iris and sclera region with horizontal polynomials coefficient. Then the precise limbus boundary is localized from the two annulus sector area with the detection of radial boundary points in a sequence along angular directions within the specified projection curve radiating from pupil center. The experimental results with standard CASIA database show that the proposed scheme is robust in finding exact noncircular pupil, limbus boundary and eyelids.

***Index Terms***—*Active contour,* Greedy Snake Model,*Orthogonal Polynomials,Iris Localization, Image Gradient.*

## I. INTRODUCTION

Recently, Personal Identification System (PIS) becomes a key factor for safety and secured environments. Iris recognition is a technology to identify individuals based on iris, and is more accurate and reliable than other biometric technologies, such as fingerprint, face recognition. Iris localization is an important step that plays a vital role in the accuracy and efficiency of Personal Identification System since a minute error in, leads to incorrect feature extraction and poor recognition. The goal of localization is to remove the iris region from the surrounding noises [1]. Most of the researchers reported eyelash detection as a post-

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# Defect Inspection Based on Segmentation and Defective Tracking in Radiographic Image

C.V.Govindan, D.Jeyasimman, M.Ganesh, R.Narayanasamy

***Abstrac:*** *In this paper, automatic weld defect segmentation into the radiographic image non-destructive evaluation and testing, with orthogonal polynomials transformation-enhancement (OPT-E) is presented. This proposed system defect identification the given defect Radiographic image. In digital radiographic images, the unknown masses appear very light with weak edges, and hence image enhancement technique needs to be applied with transform domain and radiographic images of some illustrative weld deserts invent. The proposed scheme has three phases. In first phase, a radiographic image enhancement technique, which is performed by logarithmic common variance and enhancement factor, computed from the absolute value of the orthogonal polynomials transformation coefficient as principal parameters for increasing the energy of the masses in the digital radiographic image enhancement. In case of successful enhanced of image in addition to gradient estimation scheme is working to point the edges current, in the next phase. The consequential edge image is again applied with orthogonal polynomials. In the final phase, edge tracking are the salient features with angle based defect identification. Experimental is improved quality of images and high relative segmentation by OPT-E.*

***Keywords:*** *In digital radiographic images, the unknown masses appear very light with weak edges,*

## I. INTRODUCTION

Non-Destructive testing plays an important part in making certain the safe, good, ready doing a play of the joined welded parts. Radiography, Ultrasonic Image, Radiography, and magnetic resonance imaging are the most commonly used NDT techniques. Several research works have been presented on the detailed comparison of these techniques [1-3]. In the current industry trend Gamma Radiography Testing is one among the most important applications of radio-isotopes. This technique is most frequently used in industries to examine the weld quality by analyzing the radiographic image. Compared to other techniques this method of NDT is completely non-invasive rapid and very economical. Gamma radio isotopes are used in GRT to inspect the materials regarding their defects in the welds in radiographic films. A professional person is necessary to find the defects from the obtained radiographic image. Hence in a situation of non availability of a skilled person, an automatic system is required for defect identification from the radiographic image. An automatic defect detection system generally digitizes the radiographic image enhances the image prior to defect detection [4-9].

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In the defect detection in NDT&E the two major problems that possed a challenging design is the low quality of the RT image and algorithms with improper segmentation [10, 11]. The RT image must have enough details and enhanced contrast to obtain a proper result. Progress the quality of the radiographic images many image-processing models are presented that are a basis for defect detection through automatic segmentation [12]. In support of acquiring helpful information starting a low quality digital image enhancement process is traditionally adapted [13-15]. The low contrast is the main constrain that leads for the enhancement of the RT images.

Many useful image processing methods for instance background deduction [16-17], level of gray contour examination [18, 19], texture feature analysis [23], fuzzy reasoning [22], watershed algorithm [21] and mathematical morphology [20], are proposed by researchers all over the world. These techniques use the information available in the digital images and used information from single image for weld defect detection.

The defects in the radiographic weld image are distinguished utilizing well known compel for coordinating and following. There are a couple of concentrates on deformity programmed identification by using the return of defects in grouping of radiographic images to enhance a recognition comes about. For example, The fundamental assignment in on line programmed deformity recognition is currently centered around segmentation and area of distinguishes in weld [24], while the primary undertaking in disconnected defect identification is right now centered around arrangement of various sorts of weld surrenders [25]. Progressively radiographic image succession of a moving weld, it is difficult to recognize the low-differentiate defect, and the false deformity caused by clamor even by human examination if utilizing just a single image. Subsequently, the strategies to distinguish absconds utilizing just a single image each time can't tackle the contention between identifying weld surrenders and staying away from false alerts continuously programmed deformity discovery.

At present, there are a couple of concentrates on deformity programmed discovery by using the return of defects in succession of radiographic images to enhance a recognition result. For example, Mery and Filbert et al. [26] proposed a mechanized blemish recognition strategy in aluminum castings in view of the following of potential defects in a radioscopic image arrangement, and Zhou and Du [27] introduced a robotized deformity location procedure in light of various radiographic images to identify the deformity of the sharp edge of the flight motor. In the two techniques, a grouping of radiographic images are caught from various known places of the work piece;







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# CLUSTERING HIGH DIMENSIONAL DATA WITH ITS TECHNIQUES

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***Abstract:*** ***Clustering is one among the data mining technique for diversity range of applications. One of the main advantages is the capability to work on datasets with minimum or with no prior knowledge and therefore builds clustering realistic for real world applications. Nowadays, high dimensional data has increased the interest of database researchers because of its new demanding brought to the community. Clustering involves high dimensional spaces and produces detail to its adjacent neighbor which in turn move towards its space to the outermost reports. In this type of clustering, issues resulting in the space between two reports of the same cluster have to approach the space between the two reports of different clusters. Traditional clustering methods may not proceed in a way that distinguish the exact clusters and provide the accuracy during the process of retrieval of data. The results of clustering have to be evaluated by discovering the optimal number of clusters that fits the given data set. Clustering objects in high dimensional spaces controls the grouping of objects in subspaces that are of different dimensions. The trial-and-error method may fail due to the complexities ranging from predefining number of clusters during the initial stage is found difficult. Re-initialization at every phase raises the computational cost and the sparsity called as 'curse of dimensionality' is not addressed in a well defined manner.***

## 1. INTRODUCTION

In view of the above flaws observed, a new algorithm called fuzzy subspace clustering algorithm was developed for grouping high-dimensional datasets and additionally an algorithm is designed for detecting the attacks based on Mahalanobis distance. Fuzzy techniques are employed for controlling and managing the indistinct boundaries of randomly oriented clusters. Though, traditional clustering algorithms have a tendency to decrease the high dimensional spaces because of inherent sparsity of data. [1] presented a modification in the function of Gustafson-Kessel clustering algorithm for planned. The clustering algorithm also demonstrated the convergence of the resulting UCI data sets. Finally, it advised a method of enlarging a rough set based algorithm.

Sharadh Ramaswamy&Kenneth Rose (2011) proposed an Adaptive Cluster Distance Bounding for High-Dimensional Indexing. In this paper, the author considered the solution for the problem related to similarity search in correlated and high-dimensional data sets, which was obtained using a clustering framework. With the introduction of clustering and inter-dimensional form of correlations, the author provided the most compact form for high-dimensional data set. The author presented a different form of cluster-adaptive distance using the hyperplane boundaries of Voronoi clusters that provided a solution to the cluster based index which enabled spatial type of filtering. The advantage of the method was its minimal preprocessing storage overhead and its application to the euclidean and Mahalanobis similarity measures. But, optimizing the cluster bounds remained an open issue.

In case of traditional clustering, the purpose of discrete dimensional projected clustering algorithms is to combine the objects results in formation of clusters with increasing quality. Though, the traditional functions are employed for calculating the cluster quality which may fail to suit in expected case. So, the

# ADAPTIVE CLUSTER DISTANCE BOUNDING METHODS FOR CLUSTERING ON NON-LINEAR DATA

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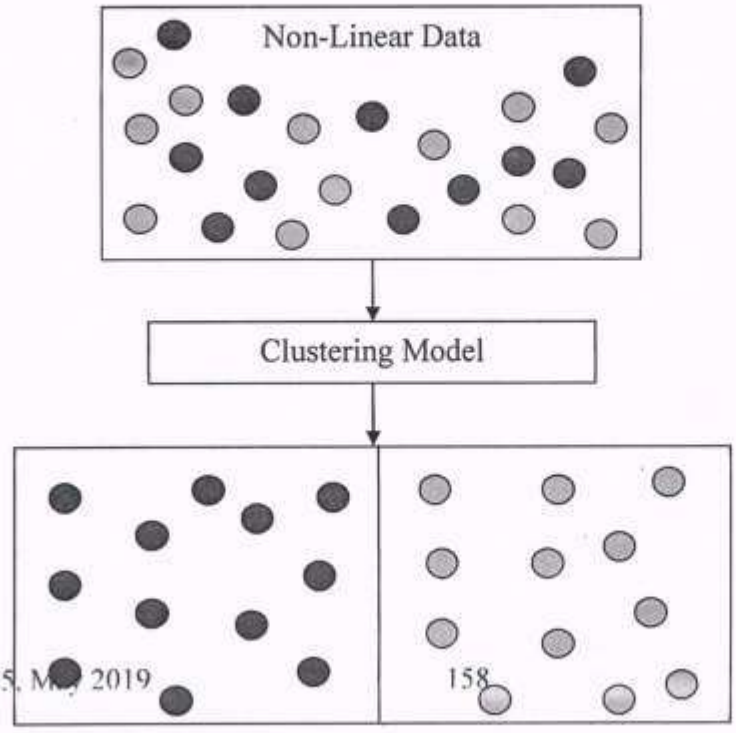
*Abstract:* ***High-dimensional data takes place in many areas and common tasks which are engaged in processing non-linear types of data. Frequently, real-world non-linear data contains a normal demonstration with a set of high-dimensional points. The non-linear data objects refers to the collection of non-linear attributes which are used for quantifying the result. The relationship of the non-linear variables has to be examined broadly to fetch the higher regression rate on the larger dataset. Clustering is an effective technique for analyzing the patterns of high dimensional non-linear data.***

## I. INTRODUCTION

Nowadays, it is a very demanding job to cluster the non-linear objects. The performance on huge amounts of high-dimensional data such as images, contents and gene expression outline are examined. Examining and controlling these types of high dimensional data is turned into an important problem. Explaining the patterns that are unseen in high-dimensional data requires a bigger challenge on clustering analysis. Non-linear data variables are shown in Figure 1.5 achieves approximation to identify rough estimation level on chosen variables. The difficulty in the high dimensional data clustering is essentially caused by the existence of miss clustering rate percentage (%). The attribute selection has been stressed on the larger non-linear data objects.



# A STUDY OF ADAPTIVE CLUSTER DISTANCE BOUNDING FOR HIGH-DIMENSIONAL INDEXING

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## I. INTRODUCTION

Clustering in high-dimensional spaces is a repeated problem in many domains like pattern recognition and data mining. Later, clustering analysis also helps in gaining the deep knowledge from the distribution of data. Clustering is the process of combining the similar objects together while objects in different groups are dissimilar to the objects of other clusters depending on the predefined similarity measurement. It is an effective technique for analyzing the patterns of high dimensional non-linear data.Clustering real-world data sets have regulardis advantages which are known as curse of dimensionality. Many real-world data sets are comprised of high dimensional feature space. Normally, many algorithms do not produce significant results due to the inherent sparsity of the data space.

Clustering on high dimensional data have low accuracy and quality of the clustering algorithm is poor because of the data objects from a variety of clusters in various subspaces containing dissimilar groupings of dimensions. To improve the quality and to incorporate the machine learning tasks, hubness mechanism is used. Hubness is one of the new issues of machine learning in high dimensional data spaces that could not find out the number of clusters in the data. Nowadays, it is a very challenging job to cluster the non-linear objects. In this research, the above issues are solved. The objective of the proposed work is to improve the efficiency and quality of the cluster in the search retrieval.And also overcomes the clustering based hubness problem and handles the non-linear relationships in high dimensional data variables.

## II CLUSTERING ON HIGH DIMENSIONAL DATA

Clustering is one of the data mining techniques for diversity range of applications. Cluster analysis help in combining the items together which appears as similar one. Clustering is an unverified learning process that partitions the data such that similar data items grouped together in sets referred as clusters which are in a way that they are highly important for identifying the patterns in data. Clustering is the efficient technique for examining the

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# A simple computational framework for defect detection system with orthogonal polynomials transcoded coefficients ☆

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ABSTRACT

In this paper, a simple computational framework to propose a generic defect detection system based on orthogonal polynomials transcoded coefficients, with a statistical procedure is presented. Initially, the defective input image is partitioned into blocks and subjected to orthogonal polynomials transformation. The resulting coefficients are then applied with a modified lifting scheme, to produce transcoded coefficients with reduced block size. These coefficients are modeled as a probability distribution to propose a block classification scheme that classifies the block under investigation to have dominantly either texture or edge or smooth with total number of transcoded coefficients that are above the mean of the sample. With simple statistical procedure, we then introduce a new defect detection technique on each of these block classification result. The proposed defect detection technique employs homogeneity among variance of transcoded coefficients with Box's M Test, and group distribution model to verify the presence of defect in texture and edge block respectively. By analyzing the magnitude of transcoded coefficients, defective blocks in a smooth region are identified. The proposed defect detection system, an application independent, is experimented with natural images and few measures are introduced with a simple Defect Measurement Matrix (DMM) to analyze the performance of the proposed system. The applicability of the proposed scheme is also extended to identify defects in fabrics.



## 1. Introduction

In recent years, use of image processing techniques in different application areas has gained a considerable attention, with domains narrowed down. One such area is automatic defect detection, which has popularity in applications such as automated manufacturing, textile fabric, construction industry, paper industry and food processing. The defect detection system, in each of these applications, utilizes edge detection technique, texture analysis scheme and feature extraction. It is also inferred from the literature, that these applications need different image processing operations to suit the specific application defect, as the defects may occur in any area of the image, having different low-level properties. Hence, based on the low-level content of the image, defect present in each of these applications, requires a suitable image processing scheme. All these defect detection schemes are application dependent and hence there is a need for introduction of a simple computational framework for generic defect detection system. At the same time, while defects such as isolated points and thin lines/curves can be easily identified with simple noise elimination schemes, there is a great need for identifying defects in small blocks, with suitable measures of performance. In this direction, a generic block defect detection system is proposed in this paper, on natural images, with artificially created defects of different shape and sizes, making use of statistical procedures on orthogonal polynomials transcoded coefficients, with introduction of appropriate performance measures.

## 2. Literature survey

Defect detection with conventional human vision based inspection [1] has the following demerits: (i) higher time consumption to inspect, (ii) lacking of reproducibility on the results obtained after inspection, (iii) higher labour cost and (iv) loss in perfection on

☆ This paper has been recommended for acceptance by M.T. Sun.

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# A SIMPLE SYSTEM FOR MONITOR OF DRIVER DROWSINESS BASED MACHINE LEARNING

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*Abstract*-**Drowsy driving is one of the major causes of road accidents and death. Hence, detection of driver's fatigue and its indication is an active research area. Most of the conventional methods are either vehicle based, or behavioral based or physiological based. Few methods are intrusive and distract the driver, some require expensive sensors and data handling. Therefore, in this study, a low cost, real time driver's drowsiness detection system is developed with acceptable accuracy. In the developed system, a webcam records the video and driver's face is detected in each frame employing image processing techniques. Facial landmarks on the detected face are pointed and subsequently the eye aspect ratio, mouth opening ratio and nose length ratio are computed and depending on their values, drowsiness is detected based on developed adaptive thresholding. Machine learning algorithms have been implemented as well in an offline manner. A sensitivity of 95.58% and specificity of 100% has been achieved in Support Vector Machine based classification.**

## I.INTRODUCTION

Drowsy driving is one of the major causes of deaths occurring in road accidents. The truck drivers who drive for continuous long hours (especially at night), bus drivers of long-distance route or overnight buses are more susceptible to this problem. Driver drowsiness is an overcast nightmare to passengers in every country. Every year, a large number of injuries and deaths occur due to fatigue related road accidents. Hence, detection of driver's fatigue and its indication is an active area of research due to its immense practical applicability. The basic drowsiness detection system has three blocks/modules; acquisition system, processing system and warning system. Here, the video of the driver's frontal face is captured in acquisition system and transferred to the processing block where it is processed online to detect drowsiness. If drowsiness is detected, a warning or alarm is sent to the driver from the warning system.

Generally, the methods to detect drowsy drivers are classified in three types; vehicle based, behavioural based and physiological based. In vehicle-based method, a number of metrics like steering wheel movement, accelerator or brake pattern, vehicle speed, lateral acceleration, deviations from lane position etc. are monitored continuously. Detection of any abnormal change in these values is considered as driver drowsiness. This is a nonintrusive measurement as the sensors are not attached on the driver. In behavioural based method , the visual behaviour of the driver i.e., eye blinking, eye closing, yawn, head bending etc. are analysed to detect drowsiness. This is also nonintrusive measurement as simple camera is used to detect these features. In physiological based method, the physiological signals like Electrocardiogram (ECG), Electrooculogram (EOG), Electroencephalogram (EEG), heartbeat, pulse rate etc. are monitored and from these metrics, drowsiness or fatigue level is detected. This is intrusive measurement as the sensors are attached on the driver which will distract the driver. Depending on the sensors used in the system, system cost as well as size will increase. However, inclusion of more parameters/features will increase the accuracy of the system to a certain extent. These factors motivate us to develop a low-cost, real time driver's drowsiness detection system with acceptable accuracy. Hence, we

# A REVIEW OF INTERNET OF THINGS-IOT BASED ON AVR MICROCONTROLLER

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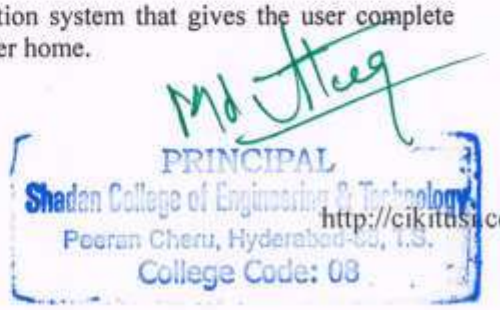
*Abstract* **-internet of things is an upcoming technology that allows us to control hardware devices through the internet. Here we propose to use IOT in order to control home appliances, thus automating modern homes through the internet. This system uses three loads to demonstrate as house lighting and a fan. Our user friendly interface allows a user to easily control these home appliances through the internet. For this system we use an AVR family microcontroller. This microcontroller is interfaced with a wifi modem to get user commands over the internet. Also we have an LCD display to display system status. Relays are used to switch loads. The entire system is powered by a 12 V transformer. After receiving user commands over the internet, microcontroller processes these instructions to operate these loads accordingly and display the system status on an LCD display. Thus this system allows for efficient home automation over the internet**

## 1. INTRODUCTION

In today's fast changing world, everything is becoming compact, portable and mobile. The mobile handsets for communication are the biggest advancement in the area. These have made our lives much simpler and connected. Today almost everyone is familiar with it's usage, and is able to draw advantage from it. The technologies for mobile communication have been ever evolving. Each had there share of pro's and con's. The WIFI esp 8266 represents the second generation of mobile communications. It is a digital telephony system, used in most parts of the world, starting from Finland in 1991 till now, with more than 690 mobile networks providing WIFI services across 213 countries. The project aims at designing an advanced home automation system using normal web server and Wi-Fi technology. The devices can be switched ON/OFF and sensors can be read using a Personal Computer (PC) through Wi-Fi. Automation is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. These had greater importance than any other technologies due to its user-friendly nature. These can be used as a replacement of the existing switches in home which produces sparks and also results in fire accidents in few situations. Considering the advantages of Wi-Fi an advanced automation system was developed to control the appliances in the house. Wi-Fi (Short for Wireless Fidelity) is a wireless technology that uses radio frequency to transmit data through the air. Wi-Fi has initial speeds of 1mbps to 2mbps. Wi-Fi transmits data in the frequency band of 2.4 GHz. It implements the concept of frequency division multiplexing technology. Range of Wi-Fi technology is 40-300 feet. The controlling device for the automation in the project is a Arduino UNO. The data sent from PC over Wi-Fi will be received by Wi-Fi module connected to Arduino UNO. Arduino UNO reads the data and decides the switching action of electrical devices connected to it through Relays.

1. The goal of this project is to develop a home automation system that gives the user complete control over all remotely controllable aspects of his or her home.

# A Secure Based Low Level Primitives Preserving Wireless Sensor Networks

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**Abstract**

**In this work, a new node based Wireless Sensor secure with calculating energy dissipation in WSN secure is presented. The proposed scheme has four phases. In the first phase, a nearest node matching technique that identifies a best match, to synthesis in the output Sensor of bigger size is designed in terms of ordered calculating energy dissipation in WSN model secure nodes. In case of successful match of nearest node, called *node-hit*, the proposed scheme finds candidate nearest nodes with triangular search, in the next phase. In the node selection phase, the proposed scheme considers a subset of calculating energy dissipation in WSN model secure nodes among the nearest nodes, for the purpose of synthesis which consumes less memory and time. This synthesized output is smoothened in the final phase, by preserving the low level contents between the synthesized nodees. The performance of the proposed scheme is measured with Homogeneity and Entropy between the original and synthesized Sensors and is also compared with existing Wireless Sensor Networks schemes. The results are encouraging.**

**Keywords**: Wireless Sensor Networks , Calculating energy dissipation in WSN, Node-Hit, Candidate Nearest node. Node Selection.

## 1. Introduction

Wireless Sensor Network (WSN) consists of a large amount of small battery powered devices which perform tasks like processing, radio transmission-reception, sensing and actuating. Wireless sensor network devices have limited energy to complete large tasks. Energy consumption still remains the limitation of this field. Wireless sensor network comprise of thousands of motes which are used to exchange information with the user either directly or through the external base- station (BS). Each of these sensor nodes sense data from environment surrounding the sensors and send it to the outside world through the external base station. A base station is a mobile node or may be a fixed node which has a capability of connecting the sensor network to an existing communications infrastructure or to the internet [7]. An ordinary node performs two major tasks. Firstly, it senses physical phenomenon and performs some computation and forwards it to other nodes, if necessary. Secondly, it also acts as relay point for other sensor nodes to route the data [8]. Transmission unit is tasked to receive the information from CPU and transmit it to the outside world. Power unit regulate battery power to sensor node.

There are different ways to achieve better lifetime which include energy efficient routing, battery characteristics etc. Routing in wireless sensor networks is very challenging due to several characteristics that distinguish these networks from other wireless networks like mobile, ad hoc networks or cellular networks.

These include dense deployment of sensor nodes, significant data redundancy, limited bandwidth and limited transmission power, etc.

This paper is organized as follows: In Section 2, the mathematical preliminary on Calculating energy dissipation in WSN Model is presented. The proposed Wireless Sensor Networks scheme is described Section 3. The performance measures for the proposed Wireless Sensor Networks scheme

# A Computational Framework for Detect congestion with Orthogonal Polynomials Model

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**Abstract- In this paper, a simple technique for detect congestion based on orthogonal polynomials (OP) model is presented. Initially, the input image under analysis is applied with OP model and gradient estimation scheme is employed to locate the edges present. The resulting binary image is again applied with OP model, and a simple computation scheme that finds the ratio between selected transform coefficients is proposed to identity the defects present in the image. Experiments have been conducted with different images consisting of both homogeneous and non homogeneous regions. The proposed technique is found to perform well, for unshaped defects.**

**Keywords: Edge detection, defect identification, Orthogonal Polynomials, weight factor.**

## 1. INTRODUCTION

The process of identifying and classifying defects in digital images is a high priority operation and has wide applications. Image defect detection algorithms are generally developed for homogeneous regions, where local anomalies that break the visual homogeneity from their surrounding background are identified as defects. Defect detection task is confidential as qualitative inspection which involves detecting ill-defined, no quantifiable faulty items such as scratches, cracks, stain and wear. Most of the defect detection methods for uniform surfaces use simple thresholding or edge detection techniques but they are also focused on non textured surfaces, such as sheet steel, aluminium strips, glass panel, and web materials. J Wilder [1] has reported a scheme to identity the defect in uniform surface images that arises in glass plate. Shankar et.al [2] reported alternatively a non referential method based on wavelet decomposition and morphological operations for wafer die inspection. It requires a specific design of structuring elements for individual defect types and assumes that local defects and parts of the background are structurally different. Since each image has some unique patterns, local defects could be structurally similar to edges. Hence, the currently available defect inspection algorithms for patterned wafers cannot be extended for defect detection in non homogeneous region. Serdaroglu et.al [3] applied Independent Component Analysis (ICA) technique for surface defect detection of textile fabrics and liquid crystal display (LCD) panels in manufacturing. But ICA-based defect detection methods are only applicable to non-textured or homogeneously-textured surfaces. They cannot be extended for defect detection in images with inhomogeneous background patterns. Tsai et.al [4] reported a shift-tolerant dissimilarity measure for defect detection in gray-level images. Chao and Tsai [5] designed an anisotropic diffusion model in low-contrast images of backlight panels, LCD glass substrates and brightness enhancement films. Yang et.al [6] described a subjective evaluation of the visual quality inspection of aesthetic parameters in architectural work. But the experimental results suggested the unreliability of visual quality inspection because it cannot quantify defect values and determine all possible defect positions due to the limits of human perception. Shih- Chieh Wu et.al [7] reported defect detection methods based on Independent Component Analysis basis images to detect defective solar cell subband of a large solar module in the electroluminescence (EL) image. The line and barshaped defects of micro-cracks, breaks and finger interruptions in the solar module can be well presented as dark regions in the EL image. But EL image displayed dislocations and grain boundaries of the multicrystalline solar wafer as dark regions and results in a random inhomogeneous background. The dark regions of defects and those in the defect-free background can be visually observed in the EL image, but they are extremely difficult to be distinguished automatically. Liu et.al [8] applied spectral subtraction to detect defects in the integrated circuit (IC) image. Tsai et.al [9] suggested a self-reference scheme based on the Fourier image reconstruction to detect various defects in multicrystalline solar cells. To identify defects in the inhomogeneous surface of an EL image, the Fourier image

# CLUSTERING HIGH DIMENSIONAL DATA WITH ITS TECHNIQUES

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***Abstract:*** ***Clustering is one among the data mining technique for diversity range of applications. One of the main advantages is the capability to work on datasets with minimum or with no prior knowledge and therefore builds clustering realistic for real world applications. Nowadays, high dimensional data has increased the interest of database researchers because of its new demanding brought to the community. Clustering involves high dimensional spaces and produces detail to its adjacent neighbor which in turn move towards its space to the outermost reports. In this type of clustering, issues resulting in the space between two reports of the same cluster have to approach the space between the two reports of different clusters. Traditional clustering methods may not proceed in a way that distinguish the exact clusters and provide the accuracy during the process of retrieval of data. The results of clustering have to be evaluated by discovering the optimal number of clusters that fits the given data set. Clustering objects in high dimensional spaces controls the grouping of objects in subspaces that are of different dimensions. The trial-and-error method may fail due to the complexities ranging from predefining number of clusters during the initial stage is found difficult. Re-initialization at every phase raises the computational cost and the sparsity called as 'curse of dimensionality' is not addressed in a well defined manner.***

## 1. INTRODUCTION

In view of the above flaws observed, a new algorithm called fuzzy subspace clustering algorithm was developed for grouping high-dimensional datasets and additionally an algorithm is designed for detecting the attacks based on Mahalanobis distance. Fuzzy techniques are employed for controlling and managing the indistinct boundaries of randomly oriented clusters. Though, traditional clustering algorithms have a tendency to decrease the high dimensional spaces because of inherent sparsity of data. [1] presented a modification in the function of Gustafson-Kessel clustering algorithm for planned. The clustering algorithm also demonstrated the convergence of the resulting UCI data sets. Finally, it advised a method of enlarging a rough set based algorithm.

Sharadh Ramaswamy&Kenneth Rose (2011) proposed an Adaptive Cluster Distance Bounding for High-Dimensional Indexing. In this paper, the author considered the solution for the problem related to similarity search in correlated and high-dimensional data sets, which was obtained using a clustering framework. With the introduction of clustering and inter-dimensional form of correlations, the author provided the most compact form for high-dimensional data set. The author presented a different form of cluster-adaptive distance using the hyperplane boundaries of Voronoi clusters that provided a solution to the cluster based index which enabled spatial type of filtering. The advantage of the method was its minimal preprocessing storage overhead and its application to the euclidean and Mahalanobis similarity measures. But, optimizing the cluster bounds remained an open issue.

In case of traditional clustering, the purpose of discrete dimensional projected clustering algorithms is to combine the objects results in formation of clusters with increasing quality. Though, the traditional functions are employed for calculating the cluster quality which may fail to suit in expected case. So, the

# Power Consumption for Data Replication Method Considering In Mobile Ad-Hoc Networks

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## Abstract

*A Mobile Ad-Hoc Network (MANET) is a collection of wireless autonomous mobile nodes with no fixed infrastructure, due to the mobility and energy limitations of nodes, disconnection and network partitioning occur frequently and many MANET database applications have time constraints. In this paper, a Data Replication technique for real-time Ad-hoc Mobile databases and a Power-Efficient Transaction management technique for Real-time mobile Ad-hoc NETwork databases addresses all these issues is proposed.*

**Keywords:** Ad hoc networks, replica allocation, data accessibility data dissemination, power management.

## 1. Introduction

MANET is a collection of wireless autonomous nodes that may move unpredictably, forming a temporary network without any fixed backbone infrastructure. All the nodes in MANET are mobile, power restricted, and thus, disconnection may occur frequently, causing a lot of network partitioning. Moreover many applications in this environment are time-critical and, hence, their transactions should be executed not only correctly, but also within their deadlines.

The goal of this paper is to improve data availability and system dependability, data in a client-server MANET system should be replicated at various servers and maintain power consumption. To make an effective environment, Update data dissemination concept is used to update old replicas efficiently for improving data accessibility and Log dissemination concept to efficiently verify the validity of tentative accesses to replicas.

In ad hoc networks, since mobile hosts move freely, disconnections occur frequently, and this causes frequent network division. For example, if a network is divided into two networks due to the migrations of mobile hosts, mobile hosts in one of the divided two networks cannot access data items held by mobile hosts in the other network. Thus, data accessibility in ad hoc networks is lower than that in conventional fixed networks. In Figure 1, if the radio link between two mobile hosts is disconnected at the central part, the mobile hosts on the left-hand side and those on the right-hand side cannot access data items D1 and D2, respectively. In ad hoc networks, preventing deterioration of data accessibility at the point of network division is a very important issue. A possible solution is to replicate data items on mobile hosts which are not the owners of the original data. In Figure 1, if the replicas of data items D1 and D2 are allocated to one of the mobile hosts in the opposite network, every mobile host can access both data items after network division.

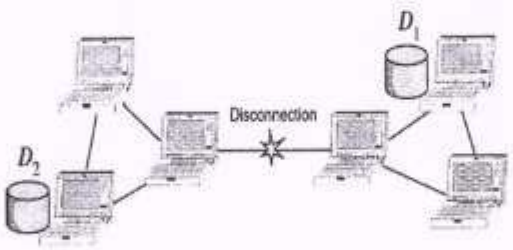


Figure 1. Network division and data access

# SECURED AND ENERGY CONSTRAINED OPTIMAL ROUTING IN THE WIRELESS SENSOR NETWORK

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*Abstract*-In this paper, an Edge Disjoint Routing Algorithm, the vitality can be preserved and after that clog is decreased. This calculation will upgrade the briefest way steering with coordinate dissemination component for effective power administration in remote sensor systems which are created to expand the lifetime of the hubs. For expanding the lifetime of the sensor hubs vitality productive directing is one arrangement which limits support cost and amplifies the general execution of the hubs. Late improvements in the zone of smaller scale sensor gadgets have quickened progresses in the sensor systems field prompting numerous new conventions particularly intended for remote sensor systems (WSNs). Remote sensor systems with hundreds to thousands of sensor hubs can assemble data from an unattended area and transmit the accumulated information to a specific client, contingent upon the application. These sensor hubs have a few limitations because of their restricted vitality, stockpiling limit and registering power. Information are directed from one hub to other utilizing diverse steering conventions. There are various steering conventions for remote sensor systems. In this audit article, we talk about the engineering of remote sensor systems. Further, we order the steering conventions as per some key factors and outline their method of activity. At long last, we give a near report on these different conventions.

**Keyword---Routing; Energy Efficiency; Clustering, Edge Disjoint Algorithm, Wireless Sensors; Protocols; Sensor Nodes, Energy Efficiency.**

## I. INTRODUCTION

A remote sensor organize (WSN) comprises of hundreds to thousands of low-control multi-useful sensor hubs, working in an unattended domain, and having detecting, calculation and correspondence capacities. The fundamental parts [1] of a hub are a sensor unit, an ADC (Analog to Digital Converter), a CPU (Central preparing unit), a power unit and a communication unit. Sensor hubs are smaller scale electro-mechanical frameworks [2] (MEMS) that deliver a quantifiable reaction to an adjustment in some physical condition like temperature and weight. Sensor hubs sense or measure physical information of the territory to be observed. The consistent simple flag detected by the sensors is digitized by a simple to-advanced converter and sent to controllers for additionally handling. Sensor hubs are of little size, expend amazingly low vitality, are worked in high volumetric densities, and can be independent and versatile to the earth. The spatial thickness of sensor hubs in the field might be as high as 20 hubs/m3.As remote sensor hubs are normally little electronic gadgets, they must be outfitted with a constrained power source [3]. Every sensor hub has a specific region of inclusion for which it can dependably and precisely report the specific amount that it is watching. A few wellsprings of intensity utilization in sensors are: (a) flag inspecting and transformation of physical signs to electrical ones; (b) flag molding, and (c) simple to-advanced change.

There are three classifications of sensor hubs:

(i) Omni Directional Sensors Passive: latent sensor hubs sense the earth without controlling it by dynamic testing. For this situation, the vitality is required just to enhance their simple signs. There is no idea of "heading" in estimating nature.

(ii) limited shaft sensors Passive: these sensors are detached and they are worried about the heading when detecting the earth.

(iii) Sensors Active: these sensors effectively test nature.

# Power Consumption for Data Replication Method Considering In Mobile Ad-Hoc Networks

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The goal of this paper is to improve data availability and system dependability, data in a client-server MANET system should be replicated at various servers and maintain power consumption. To make an effective environment, Update data dissemination concept is used to update old replicas efficiently for improving data accessibility and Log dissemination concept to efficiently verify the validity of tentative accesses to replicas.

In ad hoc networks, since mobile hosts move freely, disconnections occur frequently, and this causes frequent network division. For example, if a network is divided into two networks due to the migrations of mobile hosts, mobile hosts in one of the divided two networks cannot access data items held by mobile hosts in the other network. Thus, data accessibility in ad hoc networks is lower than that in conventional fixed networks. In Figure 1, if the radio link between two mobile hosts is disconnected at the central part, the mobile hosts on the left-hand side and those on the right-hand side cannot access data items D1 and D2, respectively. In ad hoc networks, preventing deterioration of data accessibility at the point of network division is a very important issue. A possible solution is to replicate data items on mobile hosts which are not the owners of the original data. In Figure 1, if the replicas of data items D1 and D2 are allocated to one of the mobile hosts in the opposite network, every mobile host can access both data items after network division.

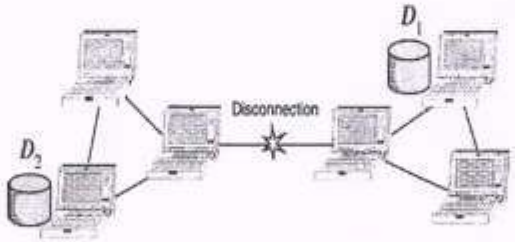


Figure 1. Network division and data access

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# A STUDY OF ADAPTIVE CLUSTER DISTANCE BOUNDING FOR HIGH-DIMENSIONAL INDEXING

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***Abstract -Clustering is an important technique for examining data analysis and concentric effort has been taken in different domains including statistics, pattern recognition and data mining for decades. High Dimensional Information retrieval provides significant way to manage the use of various data sources for efficient learning and feature selection. Clustering high-dimensional mathematical data remains a challenging issue. When clustering high dimensional data, the efficiency and accuracy of clustering are very poor. To improve the quality and incorporate machine learning tasks hubness mechanism is used. Hubness is a mechanism related to vector-space data deliberated by the propensity of certain data points also referred to as the hubs with a small expanse to numerous added data points in high dimensional spaces which is associated to the phenomenon of distance concentration. The performance of hubness on high dimensional data unable to cope with many machine learning tasks namely classification, nearest neighbor, outlier detection and clustering. Hubness is a newly unknown problem of machine learning in high dimensional data spaces, which is unsuccessful in automatically determining the number of clusters in the data***

## I. INTRODUCTION

Clustering in high-dimensional spaces is a repeated problem in many domains like pattern recognition and data mining. Later, clustering analysis also helps in gaining the deep knowledge from the distribution of data. Clustering is the process of combining the similar objects together while objects in different groups are dissimilar to the objects of other clusters depending on the predefined similarity measurement. It is an effective technique for analyzing the patterns of high dimensional non-linear data.Clustering real-world data sets have regulardis advantages which are known as curse of dimensionality. Many real-world data sets are comprised of high dimensional feature space. Normally, many algorithms do not produce significant results due to the inherent sparsity of the data space.

Clustering on high dimensional data have low accuracy and quality of the clustering algorithm is poor because of the data objects from a variety of clusters in various subspaces containing dissimilar groupings of dimensions. To improve the quality and to incorporate the machine learning tasks, hubness mechanism is used. Hubness is one of the new issues of machine learning in high dimensional data spaces that could not find out the number of clusters in the data. Nowadays, it is a very challenging job to cluster the non-linear objects. In this research, the above issues are solved. The objective of the proposed work is to improve the efficiency and quality of the cluster in the search retrieval.And also overcomes the clustering based hubness problem and handles the non-linear relationships in high dimensional data variables.

## II CLUSTERING ON HIGH DIMENSIONAL DATA

Clustering is one of the data mining techniques for diversity range of applications. Cluster analysis help in combining the items together which appears as similar one. Clustering is an unverified learning process that partitions the data such that similar data items grouped together in sets referred as clusters which are in a way that they are highly important for identifying the patterns in data. Clustering is the efficient technique for examining the

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# EFFICIENT DATA PRE-PROCESSING FOR DATA MINING USING NEURAL NETWORKS

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## *ABSTRACT*

*Organizations are maintaining history of data for future analysis. These huge volume of database is analysed to Predict and improve the benefits and profits of the organization and also for the development. By analysing the history of data, strategic decisions can be made to improve the performance of the organizations by the top level peoples. So organizations are interested in analysing the data which will result in valuable insight. The data subjected to mining consists of inconsistent, blank or null and noisy values which have to be cleaned before mining. Usually the Techniques of Mean, Mode, and Median will be used to clean the data which are inefficient methods. Here I am representing the efficient data pre-processing which is to be carried out before actual mining process can be performed. The data from different databases, different locations and different formats are considered for pre-processing. This results in identification of reasonable patterns to improve the performance of organization. Even the Neural Networks has complex structure, consumes more learning time and difficult to understand the representation of results, it have more acceptance ability to clean impure data with more precise and accuracy in pre-processing which results in efficient data pre-processing for Data Mining. The data pre-processing includes four stages. They are cleaning the Data, Selecting the data, Data Enhancement and Data Transformation. Cleaning the data: is to fill the empty value of the data and to ignore the noisy data and to correct the inconsistencies data. Selecting the data: is choosing the appropriate data which suits for learning. Data Enhancement: is done to enhance the data quality which has been selected. Data Expression: is to transform the data after pre-processing into the form which can be accepted by the data mining algorithm based on neural network. The data mining based on neural network can only handle numerical data, so it is need to transform the sign data into numerical data. The simplest method is to establish a table with one-to-one correspondence between the sign data and the numerical data. The other more complex approach is to adopt the appropriate Hash function to generate a unique numerical data according to given string. Although there are many data types in relational database, but they all basically can be simply come down to sign data, discrete numerical data and serial numerical data. Then, the discrete numerical data can be quantified into continuous numerical data and can also be encoded into coding data which can be easily and efficiently handled by data mining algorithms.*

***KEYWORDS***—*Data mining; neural networks, data mining process, Pre-processing.*

## I. INTRODUCTION

Data pre-processing is an important and critical step in the data mining process and it has a huge impact on the success of a data mining project Data pre-processing is a step of the Knowledge discovery in databases (KDD) process that reduces the complexity of the data and offers better conditions to subsequent analysis. Through this the nature of the data is better understood and the data analysis is performed more accurately and efficiently. Data pre-processing is challenging as it involves extensive manual effort and time in developing the data operation scripts. There are a number of different tools and methods used for pre-processing, including: sampling, which selects a

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# ACCURACIES OF J48 WEKA CLASSIFIER WITH DIFFERENT SUPERVISED WEKA FILTERS FOR PREDICTING HEART DISEASES

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## ABSTRACT

Heart disease is one of the life threatening disease overall the globe. As per the survey of world health organization 17 million deaths are due to heart attacks and strokes which cause maximum casualties. So Heart disease diagnosis and prediction is the essential and monotonous task in healthcare industry. The healthcare industry is information rich and knowledge poor. Useful knowledge can be exposed from health care systems using data mining techniques and can be used to predict the likelihood of patients getting heart disease. Number of researchers used many data mining techniques to diagnose and predict the heart disease and many of them were in practice. But most of the techniques outputs approximately and not accurately, because the datasets used by the researcher is impure and subjected to errors, missing values, irrelevant data and outdated data. The process of cleaning the data that is removing the impure data like errors, missing values, irrelevant data and outdated data is called data preprocessing. By applying data preprocessing prior to the actual technique the accuracies of the prediction classifier can be improved. Here, I am applying supervised weka filters Add classification, attribute Selection, Class Order, Discretize and Nominal to Binary filters for preprocessing the data on the Switzerland heart disease dataset. The cleaned datasets obtained as output from those filters is fed as input to the J48 Classifier and the prediction accuracy of each is measured and Tabulated for comparative analysis. It is found that the J48 Pruned tree with Add classification Filter with J48 classifier gives the improved accuracy of 80.9524 % than others. The performance analysis and different measures considered were tabulated and discussed below.

**Keywords:** add classification, discretize and nominalToBinary filters, J48 classification, data cleaning, data mining.

## INTRODUCTION

Heart disease diagnosis and prediction is the essential and monotonous task in healthcare industry. The healthcare industry is information rich and knowledge poor. Useful knowledge can be exposed from health care systems using data mining techniques and can be used to predict the likelihood of patients getting heart disease. These kinds of systems can serve as a training tool to train nurses and medical students to diagnose patients with heart disease [1]. The importance of heart disease prediction system can be visualized from the fact that heart disease is one of the diseases that causes highest mortality rate [2]. The heart disease was thought to be the problem of developed countries but now it is problem for developing countries too. [5]. Predicting the outcome of disease is one of the most interesting and challenging task in data mining. The knowledge discovery process includes data mining techniques has become a popular research tool for medical researchers and it is able to predict the outcome of a disease using historical data records of patients. Number of tests must be requisite from the patient for detecting a disease. However using data mining technique can reduce the number of test that is required. In order to reduce numbers of deaths from heart diseases there have to be a quick and efficient detection technique [7]. Computer Aided Decision Support System plays a major role in medical field [8]. Heart Diseases remain the biggest cause of deaths for the last two decades. These kinds of systems can be used to assist doctors and assist medical professionals in making decision of heart disease in the early stage based on the clinical data of patients [8]. In biomedical diagnosis, the information provided by the patients may include redundant and interrelated symptoms and signs especially when the patients suffer from more than one type of disease of the same category. The physicians may not able to diagnose it correctly. Data mining with intelligent algorithms can be used to tackle the said problem of prediction in medical dataset involving multiple inputs [8].Patient's disease is increasing, day by day. So there is a need of an application which can provide information for decision makers, on patient diseases collected data. Computational intelligence methods open up new prospects for diseases diagnostic criteria. Data mining is an approach which can help in decision making [9]. According to world health organization about more than 12 million deaths occurs worldwide, every year due to heart problems. It is also one of the fatal diseases in India which causes maximum casualties [10]. Heart disease should be diagnosed accurately and correctly. Due to limitation of the potential of the medical experts and their unavailability at certain places put their patients at high risk. It would be highly advantageous if the techniques will be integrated with the medical information system. Computer based information or decision support systems can facilitate accurate diagnosis that's too at reduced

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# Analysis of Classification Algorithms for Heart Disease Prediction and its Accuracies

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**Abstract:** Heart disease is the leading cause of death and it is necessary to predict it at earlier stages to save the life of human beings. Many researchers proposed number of data mining algorithms to predict the heart disease. Different algorithms gives various levels of accuracies. Here I am comparing the accuracies of few classification algorithms Random Tree, Naïve Bayes, Decision Tree and Random forest. The Hungarian_csv database with 294 instances and 14 attributes age, sex, cp, trestbps, chol, fbs, restecg, talach, exang, oldpeak, slope, ca, thal and num were used here for the analysis. RapidMiner Software is used to experiment the collected datasets. It is a software platform developed by the company of the same name that provides an integrated environment for machine learning, data mining, text mining, predictive analytics and business analytics. The collected datasets are passed as input to the above mentioned classification algorithms and the result obtained is analyzed and different views. It is found that Naïve Bayes gives the best accuracy of 79.25% with next 78.24% of accuracy by Decision Tree. Random tree gives 75.14% accuracy while Random forest stands next with 74.16%. The different measures and results were tabulated and charted.

**Key words:** Data Mining · RapidMiner · Random Tree · Naïve Bayes · Decision tree and Random Forest

## INTRODUCTION

As people have interests in their health recently, development of medical domain application has been one of the most active research areas. One example of the medical domain application is the detection system for heart disease based on computer-aided diagnosis methods, where the data are obtained from some other sources and are evaluated based on computer-based applications [1]. Diagnosis of heart disease is a significant and tedious task in medicine. The term Heart disease encompasses the various diseases that affect the heart [2]. The healthcare environment is still information rich but knowledge poor.

The Proposed concept of the paper is given below in the Figure 1. The test and training data is given as input to the classification algorithms and the accuracy is compared for analysis.


Fig. 1: Proposed Model

There is a wealth of data available within the healthcare systems. However, there is a lack of effective analysis tools to discover hidden relationships and trends in data [3]. The World Health Organization has estimated that 12 million deaths occur worldwide, every year due to the Heart diseases. Half the deaths in the United States and other developed countries occur due to cardiovascular diseases [4]. As large amount of data is generated in medical organizations (hospitals, medical centers) but as this data is not properly used. There is a wealth of hidden information present in the datasets [5].

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# Performance Analysis on Accuracies of Heart Disease Prediction System Using Weka by Classification Techniques

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*Keywords:*
*Data mining, Classification, weka, heart disease, dataset, Bayes Net Evaluation, Naïve Bayes, Multilayer perceptron, Attribute selected classifier, Decision Table, Decision Tree(J48), Random Forest and Random Tree.*

ABSTRACT

**Background:** Health care industry contains huge volume of data and this can be used for effective analysis and diagnosis of many diseases by several data mining algorithms. Here, the different classification algorithms of data mining were applied with the huge volume of data in health care industry, particularly heart disease data sets to diagnose the heart diseases. The data has been collected from the University of California Irvine. This database contains four datasets and the Cleveland clinic foundation heart disease data set has been used here. Out of 76 raw attributes only 14 of them age, sex, cp, trestbps, chol, fbs, restecg, talach, exang, oldpeak, slope, ca, tal and num were used here for the analysis. The familiar data mining tool called WEKA (Waikato Environment for Knowledge Analysis) which is obtained from University of Waikato, New Zealand is applied. **Objective:** The classification algorithms Bayes Net Evaluation, Naïve Bayes, Multilayer perceptron, Attribute selected classifier, Decision Table, Decision Tree (J48), Random Forest and Random Tree were effectively applied here to measure the performance of each. **Results:** The results obtained were analyzed in different aspects and tabulated for each Technique. The analysis focuses on correctly and incorrectly classified Instances, kappa statistic, Mean absolute error and root mean squared error, root relative squared error and coverage of cases for each algorithm. The different measures TP Rate, FP Rate, Precision, Recall, F-Measure, ROC Area by class is tabulated for each algorithm. The confusion Matrix is given for each algorithm. Also the different types of heart diseases Coronary heart disease; Angina pectoris, Congestive heart failure, Cardiomyopathy, Congenital heart disease, Arrhythmias and Myocarditis diagnosis are focused here. **Conclusion:** The accuracies obtained by each algorithm are tabulated and charted for the comparison and analysis



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## INTRODUCTION

Healthcare industries maintain large amount of data about the patients, diseases, causes and medical devices. These large records serve as a source for the knowledge extraction and diagnosis of diseases (Thirumal and Nagarajan, 2014). The healthcare industry is generally "information rich", which is not feasible to handle manually. These large amounts of data were very important in the field of data mining to extract useful information (Sudakar and Manimekalai, 2014). Researchers have long been concerned with applying statistical and data mining tools to improve data analysis on large data sets. Clinical diagnosis is done mostly by doctor's expertise and patients were asked to take number of diagnosis tests. But all the tests will not contribute towards effective diagnosis of disease (Akhil Jabbar *et al.*, 2013). Disease diagnosis is one of the applications where data mining tools are proving successful results (Aqueel Ahmed and Shaikh Abdul Hannan, 2012). According to the world health organization, heart disease is the first leading cause of death in high and low income countries and occurs almost equally in men and women. By the year 2030, about 76% of the deaths in the world will be due to non-communicable diseases (ncds). Globally, heart diseases are the number one cause of death. About 80% of deaths occurred in low-and middle income countries. If current trends are allowed to continue, by 2030 an estimated 23.6 million people will die from cardiovascular disease (mainly from heart attacks and strokes) (Wikaschaurasia and Saurabh Pal, 2013). Data mining is the nontrivial process of

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# DATA CLEANING USING WEKA FOR EFFECTIVE DATA MINING IN HEALTH CARE INDUSTRIES

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**Abstract:** The healthcare environment is still 'information rich' but 'knowledge poor'. There is a wealth of data available within the health care systems. However, there is a lack of effective analysis tools to discover hidden relationships in data.[3]. Several Data mining tools and Techniques are available to analyze the huge volume of health care data to predict life threatening diseases like Cancer, diabetics, Liver diseases and Heart diseases. Many data mining algorithms were implemented by many researchers to diagnose and predict the life threatening diseases to save the life of human beings. The researcher and the data mining technique predicts the diseases approximately and not accurately, because the datasets used by the researcher and the techniques is impure and subjected to errors, missing values, irrelevant data and outdated data. The process of cleaning the data that is removing the impure data like errors, missing values, irrelevant data and outdated data is called data preprocessing. This paper proposes different methods of data preprocessing techniques to perform data cleaning before the dataset undergoes any data mining technique, so that the result obtained by any data mining algorithms will be accurate. An effective data mining tool built with many Machine learning data mining algorithms and data preprocessing techniques called "WEKA" is used here for preprocessing. Once the dataset undergoes preprocessing, impure data will be removed and the dataset with perfect attributes can be used by data mining algorithms. Weka is a data mining system developed by the University of Waikato in New Zealand that implements data mining algorithms. This paper implements the different data preprocessing techniques using weka for predicting heart disease. The sample data set is used by the classification algorithms before data preprocessing is performed on the dataset and also after data preprocessing is performed on the same data set. The differences in the accuracies obtained is tabulated and it is found that the better accuracy is achieved after preprocessing the dataset and poor accuracy for the data that is not cleaned. This concludes that preprocessing improves the mining results and this can be applied for any data mining algorithm and for any application. The results obtained are tabulated for analysis.

**Keywords:** Data mining, Decision Tree, Decision Table, Random Tree, Random Forest, Weka, Preprocessing, UCI dataset.

## Introduction:

The Healthcare industry is generally "information rich", which is not feasible to handle manually. These large amounts of data are very important in the field of Data Mining to extract useful information and generate relationships amongst the attributes. In the health care industry the data mining is mainly used for predicting the diseases from the datasets [4]. The Healthcare industry generally clinical diagnosis is done mostly by doctor's expertise and experience. Computer Aided Decision Support System plays a major role in medical field [7]. In health concern business, data mining plays a significant task for predicting diseases. Numeral number of tests must be requisite from the patient for detecting a disease. However using data mining technique can reduce the number of test that is required [1]. Data Mining refers to using a variety of techniques to identify suggest of information or decision making knowledge in the database and extracting these in a way that they can put to use in areas such as decision support, predictions, forecasting and estimation. The healthcare industry collects huge amounts of healthcare data which, unfortunately, are not "mined" to discover hidden information for effective decision making [5]. The healthcare industry gathers enormous amounts of heart disease data which, unfortunately, are not "mined" to discover hidden information for effective decision making [8]. Data mining refers to extract useful information from large databases [6]. Data mining finds useful application in medicine to predict and prevent the diseases. The huge amount of data

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# Seamless Paramedical Data Access Through Cloud Platform Service

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RESEARCH ARTICLE

Traditional way of giving prescription to the patient cost lot amount of paper wastage sometime if the patient lost the prescription, the patient can't ask for another prescription to the doctor. Since the prescription cannot be read by an ordinary person and even sometime pharmacist cannot read the prescription. So there might be a confusion of what drug is prescribed in the prescription to the patient. Maintaining as a document of all prescription is also not that much easy task for the entire patient. Even traditional server database maintenance of all the patient details in the hospital server is not an easy task for maintenance due to security, reliability, power consumption and unwanted occupation of space. To overcome this type problem of cloud based pharmacy is introduced.

**Keywords:** Cloud Server, Drugs, C#, Microsoft Azure, Database.

## 1. INTRODUCTION

This project is developed to decrease the usage of paper and to the understanding of what kind of drug is prescribed in the prescription prescribed by the doctor for both the patient and the pharmacist. The will be a better platform for the patient and the pharmacist by identifying the drug properties. Not only that the client details are stored in cloud database. So there will be no separate maintenance of servers.

### 1.1. Problem in Existing Method

Problem of existing method is that there is lot of wastage of paper for prescribing drugs to the patient. Patient can't understand what drug the doctor is prescribed to them. Even sometime pharmacist can't understand what drug is prescribed to the patient. So there is a confusion arises. Not only that the patient can't have a all the prescription details with them as a file. Even if they have it can't be maintained properly.[1] To overcome these type of confusions and maintenance problem this project is implemented.

### 1.2. Solution for the Problem

Cloud based pharmacy is the software which will overcome the problem of existing method. It is use to store the prescription of the patients where the doctor directly prescribe the drug to the patient using this software. The prescribed drug will be stored in the cloud database.[2] By entering the patient id in pharmacist login the pharmacist can see what drug does the doctor prescribed to the patient clearly.

### 1.3. Overview of the Project

To utilize these software first patients, doctors, pharmacist and the medical representative need to store their personal in the sign up form. Their clients need to choose their unique id and password. Figure 1 represents the Architecture Diagram for seamless cloud paramedical in detail.

Using the login the client can enter their user name and the password which they provided in the sign up. Using that they can access their needs. First the doctor login and prescribe the drug to the patient by patient id. Figure 2 describes the Use case diagram for seamless cloud paramedical in detail.

Then the patient can see what drug is prescribed to them using the patient login. Finally the patient can go the pharmacy, by just saying the patient id the prescribed drug will be displayed from the pharmacist login.

This software is also used to see the doctor, patient, pharmacy, medical representative details by entering their ID. This software even extended to identify the drugs details prescribed by the doctor with the help of the drug details column. In that if the client enters the drug producing company name the family of the drug and its purpose

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# C4.5 classification algorithm with back-track pruning for accurate prediction of heart disease.

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## Abstract

**In Machine Learning, Decision tree is the mostly used classifier for predictive Modeling. The C4.5 classifier suffers from overfitting; poor attribute split technique, inability to handle continuous valued and missing valued attributes with high learning cost. Among all, overfitting and split attribute has high impact on the accuracies of prediction. The Efficient Back-track pruning algorithm is introduced here to overcome the drawback of overfitting. The proposed concept is implemented and evaluated with the UCI Machine Learning Hungarian database. This database having 294 records with fourteen attributes were used for forecasting the heart disease and relevant accuracies were measured. This implementation shows that the proposed Back-track pruned algorithm is efficient when compared with existing C4.5 algorithm, which is more suitable for the application of large amounts of healthcare data. Its accuracy has been greatly improved in line with the practical Health care Historical data. The result obtained proves that the performance of Back-track pruned C4.5 algorithm is better than C4.5 algorithm.**

**Keywords:** Data mining, Heart disease, Decision Tree, C4.5 algorithm, Overfitting, Back-track pruning.

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## Introduction

Heart disease has become the major challenge for health care industries. This illness is one of the most leading reasons of death all over the world in the past decade [1]. Cardiovascular disease or heart disease is a class of disease that involves the heart, blood vessels (arteries, capillaries and veins). It is hard for health care professionals to forecast the heart attack as it is a difficult task [2]. The American heart association has estimated that 17.3 million people die because of cardiovascular disease every year, particularly heart attacks, strokes, coronary heart disease and pulmonary heart disease etc. This global cause of death can increase the number to grow more than 23.6 million by 2030. The populations affected by heart diseases are mostly in low and middle-income countries, Where 80% of these deaths occur usually at younger ages than in higher income countries.

Health care industry contains huge volume of data and this can be used for effective analysis and diagnosis of many diseases by several data mining algorithms [3]. The medical industry is highly information rich, but knowledge poor [4]. However, there is a lack of effective analysis tools to discover hidden relationships in data [5]. Like for instance the symptoms from clinic, the practical and pathological symptoms of heart diseases are linked with the human organs including heart, which shows signs of different diseases in human body. Perhaps these signs have similar symptoms of heart diseases as well. To prevent the cause of death and reduce in number, analysis and forecast is very important, but it has never been an easy task for accurate diagnosis of heart diseases. Lots of research is being done for diagnosis of heart disease, but still the complications in various factors are causing delay in diagnosis of the heart related diseases and deciding the accuracy. Researchers are facing difficulties to find accuracy in diagnosis. Prediction is the knowledge to predict future data from historical and current data according to time-series data [6].

Data mining has been extensively implemented by research professionals to assist medical professionals to enhance accuracy for the finding of heart disease [7]. Disease diagnosis is one of the applications where data mining tools are proving successful results. C4.5 classification is one such algorithm playing major role in prediction with few drawbacks as mentioned. The Modified Back-track pruned C4.5 classification algorithm is introduced which can take huge volume of data as input from medical domain to identify and foretell the diseases better than C4.5. C4.5 Classification algorithm has been used by many researches in different application areas. Even they provide good results it suffers from the problem of overfitting. The tree works well for

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*RESEARCH ARTICLE*

# Predicting Life time of Heart Attack Patient using Improved C4.5 Classification Algorithm

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## ABSTRACT:

C4.5 classification is the widely used Machine Learning algorithm in variety of applications. It is a type of Decision Tree classification algorithm used by researchers to predict the future by analyzing past historical data. In this paper, C4.5 classification algorithm is implemented to calculate the survival rate of life time of a Patient affected with heart attack. The echocardiogram dataset from UCI source with 132 instances and 12 attributes were used for the experimental analysis. This dataset contains missing values which may affect the prediction accuracy and they are replaced using binning method to overcome the drawback. The implementation of the echocardiogram dataset with C4.5 classification was done with four different modes and the accuracies were measured. Mode-1: Applying Echocardiogram Dataset with Missing Values to C4.5 Classification Algorithm. Mode-2: Applying Echocardiogram Dataset after removing Missing Values to C4.5 classification Algorithms. Mode-3: Applying Echocardiogram Dataset with removed missing values to C4.5 algorithm by considering Node splitting criterion only and Mode-4: Echocardiogram Dataset with removed missing values to the C4.5 Algorithm by considering Node splitting and tree Pruning. The accuracies and other related metrics were measured to predict the possible survival rate of heart attack patients at different modes so that the patients can pre-determine whether or not to undergo expensive treatments. The performance of Mode-4 is better than the earlier method which proves that attribute split criterion and tree pruning improves the accuracy.

**KEYWORDS:** Heart Disease, Survival Rate, C4.5 Classification Algorithm, Datamining. Attribute Split and Tree Pruning.

## INTRODUCTION:

Disease diagnosis is an important application where data mining tools produce useful results[1]. The medical industry gathers enormous quantities of patient's information which is not used regrettably for mining process to notice unseen statistics for current decision making. Detection of concealed patterns and associations frequently becomes idle. Progressive data mining methods can benefit remedying this state[2]. Diabetes range, habit of smoking, High pressure of Blood, age, obesity and the habit of alcohol feasting has direct impact on heart attack.

Coronary heart disease (CHD) is the main reasons of frailty in grown person as well as one of the main causes of death in the well advanced countries[3]. Classification algorithms have paying attention of significant interest together in the machine learning and in the data mining research zones. Between several classification techniques, the C4.5 method[4,5] justifies a special indication for numerous details[6]. The heart ailment records to be the foremost source of demise universally. It is problematic for healing doctors to forecast the heart disease as it is a multifarious mission that needs knowledge and familiarity[7]. The most influential attributes were identified and there values were used in building the C4.5 decision tree.

Konwing the classes of an instances set, the algorithm is used to discover the way the vectors of attributes

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# Environmental sustainability of green marketing strategy: empirical evidence from e-tail consumer's in Tamil Nadu

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**Abstract:** Green marketing is one of such strategies used by marketers for reaching sustainable development. Companies need to know consumers' attitude and to adapt new marketing solutions with the focus on determining the expectations and satisfying their needs. In this paper, we will attempt to examine the attitude of Tamil Nadu e-tail consumers toward eco-friendly products. The aim of the survey is to gather information from a consumer standpoint. Time has witnessed the different phases of marketing strategy. Out of which, sustainability is the key issue which has emerged in marketing strategy over the time. In earlier phase of 1970s, ecological issues have emerged as a new paradigm in marketing strategy. Reassessment of the issues resulted in evolution of green or environmental issues in marketing strategy and now the sustainability in marketing strategy has become the focus of attention of the researchers.

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RESEARCH ARTICLE

# A Modified Method for High Dimensional Data Clustering Based on the Combined Approach of Shared Nearest Neighbor Clustering and Unscented Transform

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This paper presents a novel approach to lessen the hubness dilemma and identify the curse of dimensionality present in the high dimensional data by means of the shared nearest neighbor clustering (SNNC) based on unscented transform (SNNC-UT). The main function of SNNC is to determine the cluster points such that the points inside a cluster are almost related to each with respect to any one of the characteristics other than to other points in a different cluster. SNNC based on unscented transform (SNNC-UT) is utilized to compute the probability (relative) to achieve a superior clarification of density. In addition, Unscented Transform estimation achieves the best results on distance measure utilizing the performance improvement with Gaussians model. The experimental result clearly shows that SNNC-UT method attains the improved cluster quality, minimal time consumption for clustering and decreases the consumption of energy compared to other existing methods.

**Keywords:** Shared Nearest Neighbor Clustering, Unscented Transform, Hubness, High Dimensional Data, Clustering.

## 1. INTRODUCTION

A Shared nearest neighbor clustering algorithm is used to identify the core points and effectively removed the noise present in the point data set. The merits of SNN similarity is, it cannot handle the direct similarity and resolves some of the problems.[1] In this similarity, an object is close with another object and these objects belong to the different cluster. In addition, the SNN similarity is comparatively less sensitive to the changes of density and spatial dimensions since it reveals the local structure of data. SNN is applied to control the large multidimensional and dynamic databases. Subspace clustering determines the efficient cluster validation except the problem of hubness is not discussed.[3] But Shared Nearest Neighbor Clustering based on Unscented Transform (SNNC-UT) method to conquer the draw backs present in the traditional clustering approaches especially on high dimensionality, hubness problem with determination of cluster data and metric limitations. The quality measures such as clustering quality, clustering time, distance measurement ratio, and energy consumption are utilized to evaluate the recital of SNNC-UT and k-nearest neighbor hubness in clustering. It is relatively not sensitive to variations in normal density and high dimensionality. The border, core and noise points are determined by using the SNN density. The SNN method is used in different applications namely Earth science data and word clustering. The nearest-neighbor algorithm method is used to perform different types of agglomerative hierarchical clustering in cluster analysis.[4] Nearest neighbor search is an accumulation problem for determining the most similar or closest points. It is otherwise recognized as proximity search, similarity search or closest point search. Closeness is specified in conditions of dissimilarity function as the fewer related points are the objects and the larger similar points are conveyed in terms of function values. The SNN method decreases the hubness and also improves the accuracy of the clustering.[5] A shared nearest neighbor is handled by different densities and other difficult situations. The SNN scheme is suited to deal with data complexity, heterogeneity and high dimensional.[6]

Figure 1 illustrates the SNN method. The shared nearest neighbors clustering methods is a graph based method. By using different parameters, the similarity makes less sensitive graph based on the shared nearest neighbors.[7] For clustering, the distance or a measure of similarity is needed

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RESEARCH ARTICLE

# A Framework for Evaluating Medical Blog and Camera Opinions Based on Opinion Mining and Sentiment Analysis

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Opinion mining also called sentiment analysis is a process of finding users opinion about particular topic. The key challenge faced in opinion mining is that the natural language is highly unstructured in nature and interpretation of the meaning of a particular word, phrase or sentence by a machine is cumbersome. But the usefulness of the sentiment analysis is increasing day by day as large source of user generated contents (in the form of blogs, comments, reviews, wikis) act as important source for web mining which can be used for product feedback analysis, and for decision making to users. In this work, the efficiency of the feature extraction methods and classification algorithms for classifying cameras reviews were investigated. Opinions expressed on cameras are taken from Amazon website. TDF × IDF is utilized for the extraction of features from camera reviews. Features transformation is undertaken by using PCA and kernel PCA. Three classification algorithms Naïve Bayes, K Nearest Neighbour and Classification and Regression Trees (CART) algorithms were used to investigate the quality of the extracted features. Experimental results demonstrate that features extracted using TDF × IDF with kernel PCA enhances the classification precision of the classifiers. Outcomes reveal that CART algorithm has higher classification accuracy than other classifiers.

**Keywords:** Opinion Mining, Sentiment Analysis, Web Mining, Naïve Bayes, K-Nearest Neighbor, Classification, Regression Trees.

## 1. INTRODUCTION

Opinion Mining (OM) is a kind of natural language processing for the purpose of recording attitudes and sentiments of the common people regarding certain topics, products or service. OM recognizes subjectivities as well as objectivities of texts and classifies them with regard to the opinions orientation of subjective texts.[6] Cameras are popular in social as well as computing landscapes and implanted in customer gadgets such as smart phones, tablets, laptops as well as wearable gadgets like Google Glass, Narrative Clips and Aerographers. They are on the fringe of becoming a ubiquitous device. Opinion holders are persons or enterprises holding a particular opinion. In product review sites, forums or blog posts, opinion holders are the writers of those posts. Online reviews express opinions about a product or service and users evaluate a product or service based on these opinions before buying or using the product. Due to the huge amount of reviews available in different websites, it is hard to comprehend all the opinions. Opinion mining summarizes and the polarity of the various reviews which helps in gaining a overall picture about a product or service. The Sentiment is classified as negative, neutral or positive on retrieving the information from the review. Various techniques such as clustering, supervised learning methods classify sentiment polarity. Sentiment classification has been widely researched and several approaches are surveyed in literature.[7] The efficacy of the feature extraction methods and classification algorithms for classifying cameras reviews were investigated. Opinions expressed on cameras are taken from Amazon website. TDF × IDF is utilized for the extraction of features from camera reviews. Features transformation is undertaken by using PCA and kernel PCA. Naïve Bayes, K-Nearest Neighbour classifiers and CART algorithms performance evaluations are investigated.

## 2. LITERATURE SURVEY

Yu et al. proposed method to extort and sum up product features and related opinions from a huge amount of

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# Empirical Analysis and Validation of Security Alerts Filtering Techniques

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***Abstract:*** System administrators deal with security incidents via a diffusion of video display units ,together with intrusion detection structures, event logs, protection information and occasion control systems. Monitors generate large volumes of signals that crush the operations crew and make forensics time-ingesting. Filtering is a consolidated method to reduce the quantity of alerts. In spite of the number of filtering proposals, few research have addressed the validation of filtering outcomes in actual production datasets. This paper analyzes a number of trendy filtering strategies which are used to cope with protection datasets. We use 14 months of alerts generated in a SaaS Cloud. Our analysis aims to measure and evaluate the reduction of the alerts quantity obtained by using the filters. The evaluation highlights professionals and cons of each clear out and presents insights into the sensible implications of filtering as affected by the characteristic of a dataset. We supplement the analysis with a way to validate the output of a filter out in absence of ground truth, i.e., the expertise of the incidents took place in the machine on the time the alerts had been generated. The analysis addresses blacklist, conceptual clustering and by test strategies, and our filtering notion based totally on term weighting.

## I. INTRODUCTION

With the ever growing integration of digital nonlinear signal processing as used in our everyday world, the acceptance of this new technology should be readily accepted by the main stream. This technology is being used in applications in the everyday world in ways such as microwave technology, cellular technology, heart monitors, mind checks and ultracloud screenings, MRI examines ECG/EKG filters, EEG outputs, and high recurrence surgical tools. The MRI examine or the attractive reverberation imaging check utilizes attraction alongside radio waves and a nonlinear PC preparing project to paint a picture of the inward state of the human body. High frequency scalpels which are used to make precise incisions in the skin, X-beam imaging gadgets that peer inside the body utilizing high recurrence to demonstrate the inner state of the human body and also different things utilizing a system that includes making a concentrated light emission and crushing them into some kind of metal film. The aftereffect of that crash between the metallic film and the very charged electrons is a grouping of high-vitality electromagnetic radiation. This radiation is what is typically named X-beams. Alongside the sheet of metallic film, a moment sheet fills in as a channel that keeps the shaft from diffusing or making the picture delivered by the activity, foggy or generally hard to see. As the picture shows up, the segments of the body that contain metals, for example, calcium enhanced bones will seem plot. Other mineral stores help to distinguish the nearness of developments, for example, tumors and furthermore recognize softens up the bones or remote questions in the body, for example, cut cutting edges or slugs. In a few examples, the patient may ingest what is referred to as a differentiating operator, for example, barium or iodine that makes the nearness of veins and supply routes and organs seem all the more noticeably on the X-beam.Positron Emission Tomography (PET) is an intense imaging strategy, it is a non-intrusive test. PET outputs precisely picture the cell capacity of the human body. The PET (Positron Emission Tomography) and CT (Computed Tomography) filters are both standard imaging instruments that doctors use to pinpoint infection states in the body. A PET sweep demonstrates the organic capacity of the body before anatomical changes happen, while the CT check gives data about the body's life systems, for example, size, shape and area. By joining these two filtering innovations, a PET/CT check empowers doctors to all the more precisely analyze and recognize tumor, coronary illness and mind issue with analytical processes using the application of CLOUD to analytical methods. ECG/EKG or the electrocardiogram are used to record and analyze the electrical condition and wave patterns of the heart, EEG or electroencephalograph that is used to give a measurement of the brains electrical activity, ultrasonic imaging is another application of high frequency nonlinear signal processing used to gain a picture of the internal organs and systems of the body. Then there is GSR monitoring or galvanic skin resistance monitoring most commonly used in the infamous lie detector. We as a general public are OK with the utilization of equipment and programming based explanatory projects for human natural and hormonal framework examination like the previously mentioned applications. Fire spectra, curve spectra, mass spectrometry, gas chromatography, light assimilation and diffraction, visual and neurological flag handling programs are additionally acknowledged uses of CLOUD investigation techniques. These are only a couple of the effective uses of nonlinear flag investigation on the planet on the loose.The utilization and use of CLOUD or (computerized flag handling) as a regarded and acknowledged philosophy of nonlinear PC improved advanced flag investigation of the human natural and hormonal frameworks, has been developing increasingly with the presentation of new innovations.

# A Verifiable and Secure Access Control Scheme with Storing Big Data

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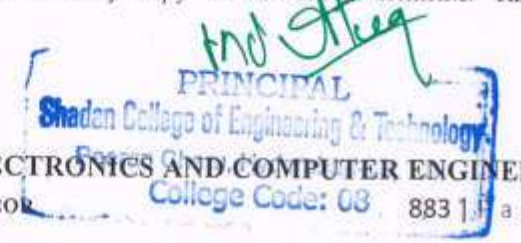
***Abstract*** - Because of the many-sided quality and volume, outsourcing ciphertexts to a cloud is esteemed to be a standout amongst the best methodologies for enormous information stockpiling and access. All things considered, confirming the entrance authenticity of a client and safely refreshing a ciphertext in the cloud in view of another entrance approach assigned by the information proprietor are two basic difficulties to make cloud-based huge information stockpiling down to earth and powerful. Customary methodologies either totally overlook the issue of access approach refresh or designate the refresh to an outsider expert; yet by and by, get to arrangement refresh is imperative for upgrading security and managing the dynamism caused by client join and leave exercises. In this paper, we propose a safe and evident access control plot in light of the NTRU cryptosystem for huge information stockpiling in mists. We initially propose another NTRU unscrambling calculation to beat the decoding disappointments of the first NTRU, and after that detail our plan and investigate its rightness, security qualities, and computational effectiveness. Our plan enables the cloud server to proficiently refresh the ciphertext when another entrance strategy is determined by the information proprietor, who is additionally ready to approve the refresh to counter against duping practices of the cloud. It additionally empowers (I) the information proprietor and qualified clients to viably confirm the authenticity of a client for getting to the information, and (ii) a client to approve the data gave by different clients to remedy plaintext recuperation. Thorough investigation shows that our plan can keep qualified clients from bamboozling and oppose different assaults, for example, the plot assault.

## I. INTRODUCTION

The distributed computing is the idea of conveyance of registering as an administration as opposed to item, the PC assets, programming and data shared rather than different gadgets. In distributed computing the client of cloud outsources its information on to the cloud, and after that the outsider inspector is going to check approval of that client to get to the cloud [3]. Information stockpiling worldview in "cloud" brings numerous testing issues which have significant effect on the ease of use, unwavering quality, versatility, security, and execution of the general framework. One of the greatest worries with remote information stockpiling is that of information respectability confirmation at un-trusted servers [1]. The distributed storage has a considerable measure of issues about the security and information Integrity. So we have to keep the all issues. In distributed storage customers can remotely store their data and welcome the on-ask for brilliant applications and organizations from shared resources, without the heaviness of neighborhood data accumulating and upkeep. Customers are not prepared to look at his data and over from the dispersed stockpiling it is secure or not. Also, clients ought to be able to simply utilize the appropriated storing as though it is neighborhood, without stressing over the need to confirm its uprightness. Thus, enabling open auditability for dispersed capacity is of fundamental hugeness with the objective that customers can rely upon a pariah inspector to check the uprightness of outsourced data and be easy [4]. In Cloud Computing, the remotely put away electronic information may be gotten to as well as refreshed by the customers, e.g., through square adjustment, cancellation, inclusion, and so on. Lamentably, the cutting edge with regards to remote information stockpiling for the most part center around static information documents and the significance of this dynamic data revives has become compelled thought [2].According to the piece of the verifier in the model, each one of the plans available fall into two orders: private conspicuousness and open irrefutable nature. Achieving higher capability, plans with private conspicuousness drive computational weight on clients. Then again, open certainty reduces customers from playing out a considerable measure of calculation for guaranteeing the honesty of information stockpiling. To be particular, customers can appoint an outsider to play out the check without dedication of their calculation resources [1]. To guarantee cloud information stockpiling security, it is basic to empower a TPA to assess the administration quality from a target and free viewpoint. Open auditability likewise enables customers to designate the respectability confirmation undertakings to TPA while they themselves can be inconsistent or not have the capacity to confer essential calculation assets performing constant checks. This sort of auditability permits anybody, not only the customer, to challenge the server and perform information confirmation check. This is the place a Third Party Auditor (TPA) becomes possibly the most important factor. Open review permits Third Party Auditor alongside client to look at the honesty of the contracted points of interest saved money on thinking and Privacy Preserving enables Third Party Auditor to do review without inquisitive for nearby copy of the subtle elements. Through this

# A REVIEW OF INTERNET OF THINGS-IOT BASED ON AVR MICROCONTROLLER

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*Abstract* -**internet of things is an upcoming technology that allows us to control hardware devices through the internet. Here we propose to use IOT in order to control home appliances, thus automating modern homes through the internet. This system uses three loads to demonstrate as house lighting and a fan. Our user friendly interface allows a user to easily control these home appliances through the internet. For this system we use an AVR family microcontroller. This microcontroller is interfaced with a wifi modem to get user commands over the internet. Also we have an LCD display to display system status. Relays are used to switch loads. The entire system is powered by a 12 V transformer. After receiving user commands over the internet, microcontroller processes these instructions to operate these loads accordingly and display the system status on an LCD display. Thus this system allows for efficient home automation over the internet**

## 1. INTRODUCTION

In today's fast changing world, everything is becoming compact, portable and mobile. The mobile handsets for communication are the biggest advancement in the area. These have made our lives much simpler and connected. Today almost everyone is familiar with it's usage, and is able to draw advantage from it. The technologies for mobile communication have been ever evolving. Each had there share of pro's and con's. The WIFI esp 8266 represents the second generation of mobile communications. It is a digital telephony system, used in most parts of the world, starting from Finland in 1991 till now, with more than 690 mobile networks providing WIFI services across 213 countries. The project aims at designing an advanced home automation system using normal web server and Wi-Fi technology. The devices can be switched ON/OFF and sensors can be read using a Personal Computer (PC) through Wi-Fi. Automation is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. These had greater importance than any other technologies due to its user-friendly nature. These can be used as a replacement of the existing switches in home which produces sparks and also results in fire accidents in few situations. Considering the advantages of Wi-Fi an advanced automation system was developed to control the appliances in the house. Wi-Fi (Short for Wireless Fidelity) is a wireless technology that uses radio frequency to transmit data through the air. Wi-Fi has initial speeds of 1mbps to 2mbps. Wi-Fi transmits data in the frequency band of 2.4 GHz. It implements the concept of frequency division multiplexing technology. Range of Wi-Fi technology is 40-300 feet. The controlling device for the automation in the project is a Arduino UNO. The data sent from PC over Wi-Fi will be received by Wi-Fi module connected to Arduino UNO. Arduino UNO reads the data and decides the switching action of electrical devices connected to it through Relays.

1. The goal of this project is to develop a home automation system that gives the user complete control over all remotely controllable aspects of his or her home.

# A SIMPLE SYSTEM FOR MONITOR OF DRIVER DROWSINESS BASED MACHINE LEARNING

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*Abstract*-**Drowsy driving is one of the major causes of road accidents and death. Hence, detection of driver's fatigue and its indication is an active research area. Most of the conventional methods are either vehicle based, or behavioral based or physiological based. Few methods are intrusive and distract the driver, some require expensive sensors and data handling. Therefore, in this study, a low cost, real time driver's drowsiness detection system is developed with acceptable accuracy. In the developed system, a webcam records the video and driver's face is detected in each frame employing image processing techniques. Facial landmarks on the detected face are pointed and subsequently the eye aspect ratio, mouth opening ratio and nose length ratio are computed and depending on their values, drowsiness is detected based on developed adaptive thresholding. Machine learning algorithms have been implemented as well in an offline manner. A sensitivity of 95.58% and specificity of 100% has been achieved in Support Vector Machine based classification.**

## I.INTRODUCTION

Drowsy driving is one of the major causes of deaths occurring in road accidents. The truck drivers who drive for continuous long hours (especially at night), bus drivers of long-distance route or overnight buses are more susceptible to this problem. Driver drowsiness is an overcast nightmare to passengers in every country. Every year, a large number of injuries and deaths occur due to fatigue related road accidents. Hence, detection of driver's fatigue and its indication is an active area of research due to its immense practical applicability. The basic drowsiness detection system has three blocks/modules; acquisition system, processing system and warning system. Here, the video of the driver's frontal face is captured in acquisition system and transferred to the processing block where it is processed online to detect drowsiness. If drowsiness is detected, a warning or alarm is sent to the driver from the warning system.

Generally, the methods to detect drowsy drivers are classified in three types; vehicle based, behavioural based and physiological based. In vehicle-based method, a number of metrics like steering wheel movement, accelerator or brake pattern, vehicle speed, lateral acceleration, deviations from lane position etc. are monitored continuously. Detection of any abnormal change in these values is considered as driver drowsiness. This is a nonintrusive measurement as the sensors are not attached on the driver. In behavioural based method , the visual behaviour of the driver i.e., eye blinking, eye closing, yawn, head bending etc. are analysed to detect drowsiness. This is also nonintrusive measurement as simple camera is used to detect these features. In physiological based method, the physiological signals like Electrocardiogram (ECG), Electrooculogram (EOG), Electroencephalogram (EEG), heartbeat, pulse rate etc. are monitored and from these metrics, drowsiness or fatigue level is detected. This is intrusive measurement as the sensors are attached on the driver which will distract the driver. Depending on the sensors used in the system, system cost as well as size will increase. However, inclusion of more parameters/features will increase the accuracy of the system to a certain extent. These factors motivate us to develop a low-cost, real time driver's drowsiness detection system with acceptable accuracy. Hence, we

# SECURED AND ENERGY CONSTRAINED OPTIMAL ROUTING IN THE WIRELESS SENSOR NETWORK

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*Abstract*-In this paper, an Edge Disjoint Routing Algorithm, the vitality can be preserved and after that clog is decreased. This calculation will upgrade the briefest way steering with coordinate dissemination component for effective power administration in remote sensor systems which are created to expand the lifetime of the hubs. For expanding the lifetime of the sensor hubs vitality productive directing is one arrangement which limits support cost and amplifies the general execution of the hubs. Late improvements in the zone of smaller scale sensor gadgets have quickened progresses in the sensor systems field prompting numerous new conventions particularly intended for remote sensor systems (WSNs). Remote sensor systems with hundreds to thousands of sensor hubs can assemble data from an unattended area and transmit the accumulated information to a specific client, contingent upon the application. These sensor hubs have a few limitations because of their restricted vitality, stockpiling limit and registering power. Information are directed from one hub to other utilizing diverse steering conventions. There are various steering conventions for remote sensor systems. In this audit article, we talk about the engineering of remote sensor systems. Further, we order the steering conventions as per some key factors and outline their method of activity. At long last, we give a near report on these different conventions.

**Keyword---Routing; Energy Efficiency; Clustering, Edge Disjoint Algorithm, Wireless Sensors; Protocols; Sensor Nodes, Energy Efficiency.**

## I. INTRODUCTION

A remote sensor organize (WSN) comprises of hundreds to thousands of low-control multi-useful sensor hubs, working in an unattended domain, and having detecting, calculation and correspondence capacities. The fundamental parts [1] of a hub are a sensor unit, an ADC (Analog to Digital Converter), a CPU (Central preparing unit), a power unit and a communication unit. Sensor hubs are smaller scale electro-mechanical frameworks [2] (MEMS) that deliver a quantifiable reaction to an adjustment in some physical condition like temperature and weight. Sensor hubs sense or measure physical information of the territory to be observed. The consistent simple flag detected by the sensors is digitized by a simple to-advanced converter and sent to controllers for additionally handling. Sensor hubs are of little size, expend amazingly low vitality, are worked in high volumetric densities, and can be independent and versatile to the earth. The spatial thickness of sensor hubs in the field might be as high as 20 hubs/m3.As remote sensor hubs are normally little electronic gadgets, they must be outfitted with a constrained power source [3]. Every sensor hub has a specific region of inclusion for which it can dependably and precisely report the specific amount that it is watching. A few wellsprings of intensity utilization in sensors are: (a) flag inspecting and transformation of physical signs to electrical ones; (b) flag molding, and (c) simple to-advanced change.

There are three classifications of sensor hubs:

(i) Omni Directional Sensors Passive: latent sensor hubs sense the earth without controlling it by dynamic testing. For this situation, the vitality is required just to enhance their simple signs. There is no idea of "heading" in estimating nature.

(ii) limited shaft sensors Passive: these sensors are detached and they are worried about the heading when detecting the earth.

(iii) Sensors Active: these sensors effectively test nature.

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# A REVIEW OF DISBANDED CONTEMPORIZE SELF ACCESS TO INSCRIBE IN CLOUD DATABASES SECURITY

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*ABSTRACT*

***In this review, a basic information in the hands of a cloud supplier should accompany the assurance of security and accessibility for information very still, in movement is presented. A few choices exist for capacity administrations, while information classification answers for the database as an administration worldview are as yet youthful. We propose a novel engineering that incorporates cloud database administrations with information classification and the likelihood of executing simultaneous tasks on encoded information. This is first arrangement supporting geologically appropriated customers to associate specifically to a scrambled cloud database, and to execute simultaneous and free activities including those changing the database structure. The proposed engineering has the further preferred standpoint of dispensing with middle intermediaries that point of confinement the versatility, accessibility, and adaptability properties that are inborn in cloud-based arrangements. The viability of the proposed engineering is assessed through hypothetical investigations and broad trial results in light of a model usage subject to the TPC-C standard benchmark for various quantities of customers and system latencies***

## I. INTRODUCTION

Distributed computing is perceived as an option in contrast to customary data innovation because of its natural asset sharing and low-upkeep qualities. In distributed computing, the cloud benefit provider (CBPs),such as Amazon, can convey different administrations to cloud clients with the assistance of intense datacenters. By moving the neighbourhood information administration frameworks into cloud servers, clients can appreciate fantastic administrations and spare huge speculations on their nearby foundations. A standout amongst the most central administrations offered by cloud suppliers is information stockpiling. By using the cloud, the clients can be totally discharged from the troublesome neighborhood information stockpiling and upkeep. In any case, it likewise represents a noteworthy hazard to the secrecy of those put away documents. In particular, the cloud servers overseen by cloud suppliers are not completely trusted by clients while the information documents put away in cloud might be touchy and secret, for example, strategies for success. To save information protection, as fundamental arrangement is to scrambled information documents, and afterward transfer the encoded information into the cloud. Sadly. Outlining a productive and secure information sharing mapping for bunches in the cloud isn't a simple assignment because of the accompanying testing issues.

To start with, personality security is a standout amongst the most noteworthy hindrances is one the wide organization of distributed computing . Without the certification of personality security, clients might be unwilling to participate in distributed computing frameworks in light of the fact that their characters could be effortlessly uncovered to cloud suppliers and aggressors.

Second it is profoundly prescribed that any part in a gathering ought to have the capacity to completely appreciate the information putting away and sharing administrations given by the cloud, which is characterized as the multi-proprietor way. Contrasted and the single-proprietor way, where just the gathering supervisor can store and change information in the cloud, the various proprietor way is more adaptable in useful applications. All the more solidly, every client in the gathering can read information, as well as adjust their piece of information in the whole information document shared by the organization. Bunches are ordinarily powerful by and by, e.g., new staff support and current worker denial in an organization. The progressions of enrollment make secure information sharing greatly troublesome. On one hand , the unknown framework challenges new allowed clients to take in the substance of information documents put away before their cooperation, since it is outlandish for new fumed clients to contact with mysterious information proprietors, and get the relating

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# ADAPTIVE CLUSTER DISTANCE BOUNDING METHODS FOR CLUSTERING ON NON-LINEAR DATA

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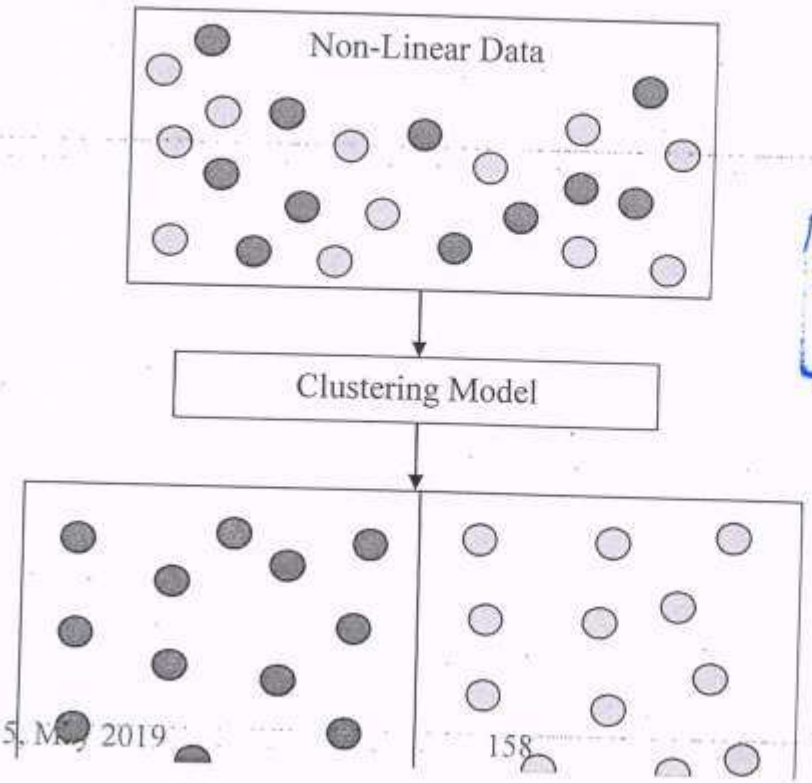
*Abstract:* ***High-dimensional data takes place in many areas and common tasks which are engaged in processing non-linear types of data. Frequently, real-world non-linear data contains a normal demonstration with a set of high-dimensional points. The non-linear data objects refers to the collection of non-linear attributes which are used for quantifying the result. The relationship of the non-linear variables has to be examined broadly to fetch the higher regression rate on the larger dataset. Clustering is an effective technique for analyzing the patterns of high dimensional non-linear data.***

## I. INTRODUCTION

Nowadays, it is a very demanding job to cluster the non-linear objects. The performance on huge amounts of high-dimensional data such as images, contents and gene expression outline are examined. Examining and controlling these types of high dimensional data is turned into an important problem. Explaining the patterns that are unseen in high-dimensional data requires a bigger challenge on clustering analysis. Non-linear data variables are shown in Figure 1.5 achieves approximation to identify rough estimation level on chosen variables. The difficulty in the high dimensional data clustering is essentially caused by the existence of miss clustering rate percentage (%). The attribute selection has been stressed on the larger non-linear data objects.



# CLUSTERING HIGH DIMENSIONAL DATA WITH ITS TECHNIQUES

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*Abstract:* ***Clustering is one among the data mining technique for diversity range of applications. One of the main advantages is the capability to work on datasets with minimum or with no prior knowledge and therefore builds clustering realistic for real world applications. Nowadays, high dimensional data has increased the interest of database researchers because of its new demanding brought to the community. Clustering involves high dimensional spaces and produces detail to its adjacent neighbor which in turn move towards its space to the outermost reports. In this type of clustering, issues resulting in the space between two reports of the same cluster have to approach the space between the two reports of different clusters. Traditional clustering methods may not proceed in a way that distinguish the exact clusters and provide the accuracy during the process of retrieval of data. The results of clustering have to be evaluated by discovering the optimal number of clusters that fits the given data set. Clustering objects in high dimensional spaces controls the grouping of objects in subspaces that are of different dimensions. The trial-and-error method may fail due to the complexities ranging from predefining number of clusters during the initial stage is found difficult. Re-initialization at every phase raises the computational cost and the sparsity called as 'curse of dimensionality' is not addressed in a well defined manner.***

## 1. INTRODUCTION

In view of the above flaws observed, a new algorithm called fuzzy subspace clustering algorithm was developed for grouping high-dimensional datasets and additionally an algorithm is designed for detecting the attacks based on Mahalanobis distance. Fuzzy techniques are employed for controlling and managing the indistinct boundaries of randomly oriented clusters. Though, traditional clustering algorithms have a tendency to decrease the high dimensional spaces because of inherent sparsity of data. [1] presented a modification in the function of Gustafson-Kessel clustering algorithm for planned. The clustering algorithm also demonstrated the convergence of the resulting UCI data sets. Finally, it advised a method of enlarging a rough set based algorithm.

Sharadh Ramaswamy&Kenneth Rose (2011) proposed an Adaptive Cluster Distance Bounding for High-Dimensional Indexing. In this paper, the author considered the solution for the problem related to similarity search in correlated and high-dimensional data sets, which was obtained using a clustering framework. With the introduction of clustering and inter-dimensional form of correlations, the author provided the most compact form for high-dimensional data set. The author presented a different form of cluster-adaptive distance using the hyperplane boundaries of Voronoi clusters that provided a solution to the cluster based index which enabled spatial type of filtering. The advantage of the method was its minimal preprocessing storage overhead and its application to the euclidean and Mahalanobis similarity measures. But, optimizing the cluster bounds remained an open issue.

In case of traditional clustering, the purpose of discrete dimensional projected clustering algorithms is to combine the objects results in formation of clusters with increasing quality. Though, the traditional functions are employed for calculating the cluster quality which may fail to suit in expected case. So, the

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# A STUDY OF ADAPTIVE CLUSTER DISTANCE BOUNDING FOR HIGH-DIMENSIONAL INDEXING

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*Abstract -Clustering is an important technique for examining data analysis and concentric effort has been taken in different domains including statistics, pattern recognition and data mining for decades. High Dimensional Information retrieval provides significant way to manage the use of various data sources for efficient learning and feature selection. Clustering high-dimensional mathematical data remains a challenging issue. When clustering high dimensional data, the efficiency and accuracy of clustering are very poor. To improve the quality and incorporate machine learning tasks hubness mechanism is used. Hubness is a mechanism related to vector-space data deliberated by the propensity of certain data points also referred to as the hubs with a small expanse to numerous added data points in high dimensional spaces which is associated to the phenomenon of distance concentration. The performance of hubness on high dimensional data unable to cope with many machine learning tasks namely classification, nearest neighbor, outlier detection and clustering. Hubness is a newly unknown problem of machine learning in high dimensional data spaces, which is unsuccessful in automatically determining the number of clusters in the data*

## I. INTRODUCTION

Clustering in high-dimensional spaces is a repeated problem in many domains like pattern recognition and data mining. Later, clustering analysis also helps in gaining the deep knowledge from the distribution of data. Clustering is the process of combining the similar objects together while objects in different groups are dissimilar to the objects of other clusters depending on the predefined similarity measurement. It is an effective technique for analyzing the patterns of high dimensional non-linear data.Clustering real-world data sets have regulardis advantages which are known as curse of dimensionality. Many real-world data sets are comprised of high dimensional feature space. Normally, many algorithms do not produce significant results due to the inherent sparsity of the data space.

Clustering on high dimensional data have low accuracy and quality of the clustering algorithm is poor because of the data objects from a variety of clusters in various subspaces containing dissimilar groupings of dimensions. To improve the quality and to incorporate the machine learning tasks, hubness mechanism is used. Hubness is one of the new issues of machine learning in high dimensional data spaces that could not find out the number of clusters in the data. Nowadays, it is a very challenging job to cluster the non-linear objects. In this research, the above issues are solved. The objective of the proposed work is to improve the efficiency and quality of the cluster in the search retrieval.And also overcomes the clustering based hubness problem and handles the non-linear relationships in high dimensional data variables.

## II CLUSTERING ON HIGH DIMENSIONAL DATA

Clustering is one of the data mining techniques for diversity range of applications. Cluster analysis help in combining the items together which appears as similar one. Clustering is an unverified learning process that partitions the data such that similar data items grouped together in sets referred as clusters which are in a way that they are highly important for identifying the patterns in data. Clustering is the efficient technique for examining the

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# An Efficient Defect Estimation and Inpainting Based on Sparse Representation

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***Abstract-*** In this paper, a simple defect identification followed by efficient inpainting that compensates the missing details in defect images, with transform coefficients is presented. This proposed scheme initially decomposes the given defect image, coefficient-wise based on geometrical and textural primitives present in the difference between original and its Gaussian smoothed images. Then simple defect estimation is carried out based on (i) strengthening the edge coefficients, and (ii) location of transition between edge and texture primitives. The basic concept behind these procedures is the contribution of orthogonal polynomials model (OPM) coefficients as a sparse representation, towards low level primitives edge and texture. A simple structure inpainting is then employed with edge magnitude and orientation, for the defected edge coefficients. With homogeneity among orthogonal polynomials texture coefficients, a texture inpainting is then proposed with statistical analysis. The proposed inpainting scheme is evaluated with standard performance measures and compared with recent inpainting methods.

***Keyword:*** *Defect Estimation, Image Decomposition, texture coefficients, Structure Filling, Texture Inpainting.*

## 1. Introduction

Image inpainting is a process of compensating missing details in image regions or repairing damaged portions in a digital image. In recent years, inpainting in digital images has gained significant attraction, due to its need in variety of applications such as restoration, editing, computer graphics, film post production etc. Based on the technique involved, image inpainting can be classified into four categories: (i) Partial Differential Equation based algorithms (ii) Exemplar based inpainting and Texture Synthesis, (iii) Sparse representation based algorithms and (iv) Hybrid Approach. The partial differential equation (PDE) based inpainting works to fill the missing regions with a diffusion process and propagates the low level image information from the border to the interior, via simulation process by solving PDE of higher order. Notable works with PDE can be referred to [1-5]. The PDE based

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# Parallel and Nearest Neighbor Search for High-Dimensional Index Structure of Cbir System Using Dva-Tree

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***Abstract-***

The System proposed similarity measure on multimedia data to retrieve content-based information. Parallel Similarity search focus on research in the field of adaptable similarity search which considers the adaptation of the proposed similarity measure to different user preferences. In order to improve the retrieval quality of content-based similarity search, they plan to examine the properties of the underlying similarity matrix to capture those user preferences. The content-based retrieval of heavily sized databases. As information retrieval is generally not restricted to a fixed size of the databases, this investigate on techniques to query voluminous data in an efficient way. To support the retrieval process, distributed vector (DVA) approximation and indexing techniques of the proposed similarity measure.
***Keywords:*** *Distributed Vector Approximation (DVA), multimedia data*

## I. Introduction:

The need to manage various types of large scale datastored in web environments has drastically increased andresulted in the development of index mechanism for highdimensionalfeature vector data about such a kinds ofmultimedia data. Recent search engine for the multimediadata in web location may collect billions ofimages, text and video data, which makes the performancebottleneck to get a suitable web documents andcontents. Given large image and video data collections, abasic problem is to find objects that cover given informationneed. Due to the huge amount of data, keywordbasedtechniques are too expensive, requiring too muchmanual intervention. In contrast, a content-based informationretrieval(CBIR) system identifies the images mostsimilar to a given query image or video clip.

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# A Framework for Iris Localization based on Greedy Snake Model

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***Abstract***—This paper proposes a framework for iris localization with greedy snake model to accurately extract iris region and compensate for the accuracy problem caused by the non-standard circle characteristics of the iris. Initially upper eyelashes are detected and removed with mathematical computational basis operators within a windowed eye region. In the proposed scheme, the non circular pupil contour is detected in an iterative fashion with a novel edge based two stage greedy snake model. In the first stage, the pupil-iris edge is coarsely located with mathematical computational gradient detector and in the second stage, the precise pupil contour is detected with greedy snake in which the contour is initialized within the pupil and deformed into new shape in response to the two controlling force models, introduced as internal and external forces to properly activate the contour. The image gradient and the curvature are utilized together to determine the speed and direction of the contour deformation,while for the localization of limbus boundary vertical edges are detected between iris and sclera region with horizontal polynomials coefficient. Then the precise limbus boundary is localized from the two annulus sector area with the detection of radial boundary points in a sequence along angular directions within the specified projection curve radiating from pupil center. The experimental results with standard CASIA database show that the proposed scheme is robust in finding exact noncircular pupil, limbus boundary and eyelids.

***Index Terms***—*Active contour,* Greedy Snake Model,*Orthogonal Polynomials,Iris Localization, Image Gradient.*

## I. INTRODUCTION

Recently, Personal Identification System (PIS) becomes a key factor for safety and secured environments. Iris recognition is a technology to identify individuals based on iris, and is more accurate and reliable than other biometric technologies, such as fingerprint, face recognition. Iris localization is an important step that plays a vital role in the accuracy and efficiency of Personal Identification System since a minute error in, leads to incorrect feature extraction and poor recognition. The goal of localization is to remove the iris region from the surrounding noises [1]. Most of the researchers reported eyelash detection as a post-

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# Design & Development of an Advanced Database Management System Using Multiversion Concurrency Control Model for a Multiprogramming Environment

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***Abstract:*** *Multi Version Concurrency Control (MVCC) is a locking scheme commonly used by modern database implementations to control fast, safe concurrent access to shared data. MVCC is designed to provide the following features for concurrent access: a. Readers that don't block writersb. Writers that fail fastMVCC achieves this by using data versioning and copying for concurrent writers. The theory is that readers continue reading shared state, while writers copy the shared state, increment a version id, and write that shared state back after verifying that the version is still valid (i.e., another concurrent writer has not changed this state first). This allows readers to continue reading while not preventing writers from writing and repeatable read semantics are maintained by allowing readers to read off the old version of the state.*

***Keywords:*** *Lock based protocols, Time stamp based protocols, Two phase Locking, Deadlock Avoidance, Remote DataBackup, Log Based Recovery, Multi-core Systems*

## I. Introduction

In a multiprogramming environment where more than one transactions can be concurrently executed, there exists a need of protocols to control the concurrency of transaction to ensure atomicity and isolation properties of transactions.

Concurrency control protocols, which ensure serializability of transactions are considered to be most desirable. Concurrency control protocols can be broadly divided into two categories:

1. Lock based protocols
2. Time stamp based protocols

**Lock based protocols**

Database systems, which are equipped with lock-based protocols, use mechanism by which any transaction cannot read or write data until it acquires appropriate lock on it first. Locks are of two kinds:

**Binary Locks:** a lock on data item can be in two states; it is either locked or unlocked.

**Shared/exclusive:** this type of locking mechanism differentiates lock based on their uses. If a lock is acquired on a data item to perform a write operation, it is exclusive lock. Because allowing more than one transactions to write on same data item would lead the database into an inconsistent state. Read locks are shared because no data value is being changed.[1]

There are four types lock protocols available:

**Simplistic**

Simplistic lock based protocols allow transaction to obtain lock on every object before 'write' operation is performed. As soon as 'write' has been done, transactions may unlock the data item.

**Pre-claiming**

In this protocol, a transactions evaluations its operations and creates a list of data items on which it needs locks. [2]Before starting the execution, transaction requests the system for all locks it needs beforehand. If all the locks are granted, the transaction executes and releases all the locks when all its operations are over. Else if all the locks are not granted, the transaction rolls back and waits until all locks are granted.

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# Implementation of Provably Optimal Policies That Stabilize the Request Queues and Reduce Average Deficit to Zero at Small Cost and Ensures QOS

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## Abstract:

A content cache(a type of web cache) is an information technology for the temporary storage (caching) of web documents, such as HTML pages and images, to reduce bandwidth usage, server load, and perceived lag. A web cache system stores copies of documents passing through it; subsequent requests may be satisfied from the cache if certain conditions are met. A web cache system can refer either to an appliance, or to a computer program. In this paper we divide users depending on their requests for content. For some users delay may be ok, but for others delay is not acceptable. According to user requirements queues are formed. In the proposed system media vault is used inorder to store the content for catching. We employ algorithms for content distribution depending upon the users flexibility over delay.

## Keywords:

Content, Wireless networks, Delay, Clusters, Media Vault.

## Introduction:

Content Caching is an area of a computer's memory devoted to temporarily storing recently used information. The content, which includes HTML pages, images, files and Web objects, is stored on the local hard drive in order to make it faster for the user to access it, which helps improve the efficiency of the computer and its overall performance.Most caching occurs without the user knowing about it. For example, when a user returns to a Web page they have recently accessed, the browser can pull those files from the cache instead of the original server because it has stored the user's activity.

The storing of that information saves the user time by getting to it faster, and lessens the traffic on the network. Benefits of content caching:Content caching improves the performance of a web site by temporarily storing data that was recently accessed. While it's cached, requests for that data will be served by the load balancer instead of making another query to a web server behind it. The result is improved response times for those requests and less load on the web server.

- Users see faster load times for digital content, whether that means videos, images, compressed files, web pages or online games.
- Enterprises see higher customer satisfaction and engagement, avoiding the chance that distant users abandon the site for performance reasons.
- Additionally, enterprises see lower bandwidth costs since files are served from local caching servers, which typically have bulk data transfer rates.

## File Types:

Content caching works well for files that don't change or that rarely change. Most images and static content are good candidates for content caching. You don't want to cache files that would change regularly or would be dynamically generated for different site visitors.

## Related Work:

Several papers have addressed content caching and content replacement in wireless networks. In the following sections, we review the works that are most related to this paper of Caching in wireless networks.

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# Implementation of Three Possible Partitioning Methods and a Parallel Activity-Search Detection (PASS-Detect) Algorithm That Coordinates Computations across Nodes in the Cluster

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## Abstract:

Given a set A of activities expressed via temporal stochastic automata, and a set O of observations (detections of low level events), we study the problem of identifying instances of activities from A in O. While past work has developed algorithms to solve this problem, in this paper, we develop methods to significantly scale these algorithms. Our PASS architecture consists of three parts: (i) leveraging past work to represent all activities in A via a single "merged" graph, (ii) partitioning the graph into a set of C sub graphs, where (C + 1) is the number of compute nodes in a cluster, and (iii) developing a parallel activity detection algorithm that uses a different compute node in the cluster to intensively process each sub graph. We propose three possible partitioning methods and a parallel activity-search detection (PASS Detect) algorithm that coordinates computations across nodes in the cluster. We report on experiments showing that our algorithms enable us to handle both large numbers of observations per second as well as large merged graphs. In particular, on a cluster with 9 compute nodes, PASS can reliably handle between 400K and 569K observations per second and merged graphs with as many as 50K vertices.

## Keywords:

Activity detection, temporal stochastic automata, parallel computation.

## Applications:

1. Fraud in call data records
2. Online market place looks for fraudulent transaction in web transactions logs
3. Future situations of brokerage house

## Existing System:

We address the problem of scalably identifying instances of known activities (i.e., where activity models are known to the application developers such as in the cases listed above) in a high throughput stream of observations. We assume that activities are expressed as temporal stochastic (TS) automata, following the framework of and its predecessor. In particular, took a set of known activity models expressed as temporal stochastic automata and merged them into a single graph and then proposed an algorithm to track activities in observation streams consisting of up to 28.5K observations per second on merged graphs consisting of under 1000 vertices. In this paper, we build upon the work in and scale it up in two directions. First, we are able to look for far more activities than could—our merged automata go to up to 50K vertices. Second, we are able to increase the throughput of observations to between 400K-569K observations per second.

## Disadvantages:

1.It does not detect all fraud transactions efficiently.
2.Its provide the reliable solution.

## PROPOSED SYSTEM:

In order to achieve this, in our PASS system we adopt a three-pronged approach illustrated in. We assume that we start with an initially given set A of activities expressed as temporal stochastic automata. Step1: In the very first step, shown in Fig. 1 with a 1 in a circle, we merge all of the activities in A into a single temporal multi-activity graph (TMAG). A TMAG captures all states and transitions present in any of the activities in A. TMAGs were first proposed in [2] which showed that merging graphs allowed multiple automata to be processed efficiently.

# DESIGN & DEVELOPMENT OF A MULTILEVEL SECURE DATABASE MANAGEMENT SYSTEM

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**Abstract:** The subject matter of Inference problem is basically the problem of users deducing unauthorized information from the legitimate information that they acquire. Our research work particularly concentrates on the inference problem which occurs in a multilevel operating environment. In such an environment, users are cleared at different security levels and they access a multilevel database where the data is classified at different sensitivity levels. A multilevel secure database management system (MLS/DBMS) manages a multilevel database where its users cannot access data to which they are not authorized. However, providing a solution to the inference problem, where users issue multiple requests and consequently infer unauthorized knowledge, is beyond the capability of currently available MLS/DBMSs.

**Keywords:** Multilevel Secure database management system, Knowledge based Inference Control, Conceptual Graphs, KnowledgeFrames, Rule – based Reasoning, Truth Maintenance System

## INTRODUCTION

Due to the complexity of the inference problem (see for example [THUR90al), we believe that a triple approach to research to research is needed to combat it; one is to build inference controllers which act during transaction processing, the other is to build inference controllers for database design, and the third is to build inference controllers to act as advisors to the System Security Officer (SSO). In our research paper, we have described prototypes for handling the inference problem during query and update processing [FORD90, COLL90]. In addition, techniques for handling this problem during database design have also been proposed [THUR9la]. While the previous approaches enable the detection and/or prevention of simple inference strategies that users could utilize to draw inferences, we believe that for an inference controller to be effective, it should be able to capture the complex reasoning strategies of humans. In other words, what is needed is a knowledge-based inference controller.

Knowledge-based inference control is a two-step process. The first step is to represent the multilevel application as completely and accurately as possible. The second step is to reason about the application so that security violations via inference could be prevented and/or detected. In this research paper, we discuss the use of conceptual graphs for representing the multilevel application. A tool based on conceptual graphs could be utilized by the SSO to design the multilevel database application. While the computation techniques developed for conceptual graphs could be utilized for reasoning about the multilevel database application, the output from the MLS/DBMS also plays a significant role in users making unauthorized deductions. This means that any reasoning tool must also take into consideration the responses released by the MLS/DBMS and audit data in order to effectively prevent/detect security violations via inference. In section 3 of this paper we discuss the essential points towards designing such a tool. Figure 1 illustrates the two step process involved in knowledge-based inference control. We envisage that a tool based on the approach described here could be utilized by the SSO to detect/prevent security violations via inference. The front-end of the tool represents the multilevel database application, responses released by the MLS/DBMS, and the audit data in a format that can be understood by the SSO. The back-end of the tool reasons with the knowledge and detects/prevents certain security violations via inference.

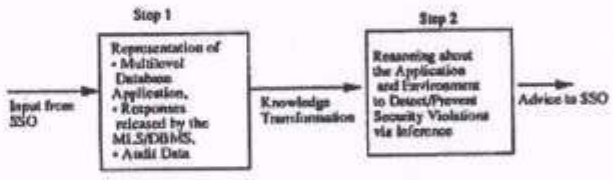


Figure 1. Knowledge-based Inference Control

## REPRESENTING AND REASONING ABOUT MULTILEVEL DATABASE APPLICATIONS

We have utilized conceptual structures for representing and reasoning about multilevel database

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# Design and Development of an Advanced Database System with Multitenant Architecture, Advanced Security Transparent Data Encryption & Data Redaction

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**Abstract:** ***As organizations increase their reliance on possibly distributed information systems for daily business, they become more vulnerable to security breaches even as they gain productivity and efficiency advantages. Though a number of techniques, such as encryption and electronic signatures are currently available to protect data when transmitted across sites, a truly comprehensive approach for data protection must also include mechanisms for enforcing access control policies based on data contents, subject qualifications and characteristics, and other relevant contextual information, such as time. It is well understood today that the semantics of data must be taken into account in order to specify effective access control policies. Also, techniques for data integrity and availability specifically tailored to database systems must be adopted. In this respect, over the years, the database security community has developed a number of different techniques and approaches to assure data confidentiality, integrity, and availability. However, despite such advances, the database security area faces several new challenges. Factors such as the evolution of security concerns, the "disintermediation" of access to data, new computing paradigms and applications, such as grid-based computing and on-demand business, have introduced both new security requirements and new contexts in which to apply and possibly extend current approaches. In this research paper, we first survey the most relevant concepts underlying the notion of database security and make a sincere effort to design and develop an advanced database system with a highly advanced secure mechanism keeping in view of the latest advancements in database security.***

**Keywords:** Advanced Security Transparent Data Encryption, Data Redaction, Multenant Architecture, Enterprise Manager Sensitive Data Discovery, Clustering, Replication, Recovery Manager

## 1. Introduction

In the present day scenario, ever increasing security threats, diversifying compliance requirements, consolidation and cloud computing technology are just a few of the reasons to establish the fact that data security has become critical. Almost a decade after the first U.S. breach notification law, the need for strong preventive controls continues to increase as access to data expands. Stolen client devices, including tablets and smart phones have the potential to easily expose sensitive information as users move beyond the laptop. Outsourcing, offshoring, corporate mergers, and nearly continuous organizational change create additional risks by making it easier for malicious insiders to obtain sensitive data and for outside hackers to gain access to servers using social engineering attacks. These growing trends are just one reason why centralized and efficient protection of sensitive data regardless of the applications being used is more important than ever.[1] Putting in place security measures that consistently protect sensitive data at the source is a critical control needed as stored data continues to proliferate and access to data expands beyond traditional boundaries. Protecting data requires a defense in depth, multi-layered approach that encompasses preventive, detective, and administrative controls. Advanced Security option delivers two essential preventive controls covering encryption of data-at-rest and redaction of sensitive data displayed by applications.[2] These controls help protect sensitive data from being exposed directly from storage or through applications. Oracle Advanced Security Transparent Data Encryption (TDE) helps prevent attacks that attempt to bypass the database and read sensitive information from data files at the operating system level, from database backups, or from database exports. Oracle Advanced Security Data Redaction complements TDE by reducing the risk of unauthorized data exposure in applications, redacting sensitive data in query results before the data leaves the database. This research paper describes TDE and Data Redaction and explains how these valuable preventive controls can work together to help secure users' sensitive data.

## 2. Objectives of Research Study

### 1) Preventing Database Bypass with Encryption

Data-at-rest encryption is an important control for blocking unauthorized access to sensitive data using methods that

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*RESEARCH ARTICLE*

# Retinal Blood Vessels and Optical Disc Segmentation in Branch Retinal Vein Occluded Fundus Images Using Digital Image Processing Techniques

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**ABSTRACT:**
The segmentation of retinal blood vessels and optical disc is the most vital and challenging task to investigate the rigorousness of the various retinal diseases such as branch retinal vein occlusion. There are lot of methods and algorithms are developed to address this issue i.e., for the precise segmentation of optical disc and blood vessels. However, every method has its own pros and cons. Retinal vein occlusion (RVO) happens due to the obstruction (blockage) of veins transporting blood with required nutrients and oxygen to the nerve cells in the eye's retina. An obstruction in any one of the four smaller branch veins is referred to as a branch retinal vein occlusion (BRVO). It is one of the main retinal illnesses next only to diabetic retinopathy. Our proposed approach is a simple image processing based detection of optical disc and retinal blood vessels of branch retinal vein occluded fundus images.

**KEYWORDS:** Branch Retinal Vein Occlusion, Mathematical Morphology, Retinal Blood Vessel Segmentation, Optical Disc, Contrast Enhanced Adaptive Histogram Equalization, Median Filtering.

## 1. INTRODUCTION:

The retina is a very thin film of light sensitive nerve tissue that positions the third inner layer of the eye[1]. When light fall on the eye, it penetrates through the iris to the retina. In retina, image is focused and there is a conversion of chemical substances into electrical impulses that eventually activate the nerve impulses[2-3]. These impulses are transmitted to the brain through the optic nerve to the brain resulting in sight. The function of the retina is same as the photographic film in a camera[5-8]. So a scene of the visual is created in retina through the lens and cornea. Retinal vein occlusion (RVO) happens due to the obstruction (blockage) of veins transporting blood with required nutrients and oxygen to the nerve cells in the eye's retina[4].

If the obstruction is due to the main vein of the retina, it is termed as central retinal vein occlusion (CRVO), whereas an obstruction in any one of the four smaller branch veins is referred to as a branch retinal vein occlusion (BRVO) [19-22].

Branch retinal vein occlusion (BRVO) is one of the main retinal illnesses next only to diabetic retinopathy[23]. Approximately one percentage of population suffering from BRVO. BRVO could cause macular edema, intra retinal haemorrhage and vitreous haemorrhage etc., which would finally lead to vision impairment or even blindness[24]. There is a lot of possibility for elderly people with cardiovascular disease and /or hypertension to endure from BRVO. BRVO is not properly diagnosed and well treated; it could severely impair the patient's vision. It could cause a potential damages as retinal edema, blurred vision, or blindness.

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# The Impact of Distance Measures in *K*-Means Clustering Algorithm for Natural Color Images

**P. Ganesan, B. S. Sathish, L. M. I. Leo Joseph, K. M. Subramanian, and R. Murugesan**

**Abstract** In image processing, clustering algorithms applied to the segmentation of images. Image segmentation is the practice of clustering a complete image into many meaningful non-overlapped clusters. This is a vital step in computer vision and data analytics because the result of the segmentation process has an impact on other subsequent processes. In image processing, distance is expressed as distance in pixels or shortest path between two data points on the grid, two centers of pixels. Most clustering algorithms utilize distance measures to cluster alike data points (pixels in the case of image) into the same group, while unalike data points are clustered into different groups according to image attributes. The proposed work evaluates the efficiency of the *K*-means clustering with three distinct distance measures.

**Keywords** *K*-means clustering · Distance measure · Color model · CIELAB · Euclidean · City block

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# Implementation of Hybrid Cloud Approach for Secure Authorized Deduplication

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**Abstract:** this paper represents that, many techniques are using for the elimination of duplicate copies of repeating data, from that techniques, one of the important data compression technique is data duplication. Many advantages with this data duplication, mainly it will reduce the amount of storage space and save the bandwidth when using in cloud storage. To protect confidentiality of the sensitive data while supporting de-duplication data is encrypted by the proposed convergent encryption technique before out sourcing. Problems authorized data duplication formally addressed by the first attempt of this paper for better protection of data security. This is different from the traditional duplication systems. The differential privileges of users are further considered in duplicate check besides the data itself. In hybrid cloud architecture authorized duplicate check supported by several new duplication constructions. Based on the definitions specified in the proposed security model, our scheme is secure. Proof of the concept implemented in this paper by conducting test-bed experiments.

**Keywords:** De-Duplication, Hybrid Cloud, Authorized Duplicate Check, Confidentiality, Encryption.

## I. INTRODUCTION

Unlimited "virtualized" resources to users as services across the whole internet providing by the cloud computing to hide platforms and implementation details. Highly available storage and massively parallel computing resources providing by the cloud services at low costs. Cloud computing widely spread in the world, maximum amount of data stored in the clouds and shred by the users with specified rights, which define as access rights of the stored data. One of the critical challenge of cloud storage services is the management of the duplication is one of the best technique to make the data management in the cloud computing. It has attracted more and more attention recently. In the data Storage to reduce the data copies we go for duplication techniques. This duplication technique is a data compression technique[2]. The technique is used improve storage utilization and can also applied for network data transfer to reduce the number of byte that must be sent. De-duplication eliminates redundant Data to reduce multiple data copies with the same content. Duplication only keeps one physical copy and referring other redundant data to that copy. Either the file level or block level, de-duplication can take place. Same file duplicate copies eliminated in file level de-duplication. In non-identical files, blocks of data that occur, this blocks of data eliminate with the block de-duplication. The detailed system architecture is shown in fig.1.

Although data de-duplication brings a lot of advantages, security and privacy concerns arise as users sensitive data are susceptible to both the insider and outsider attacks. When compares the traditional encryption with data duplication. It will provide data confidentiality. In the traditional encryption requires different users to encrypt data with their own keys. Thus identical copies of different users will lead to different cipher texts, making de-duplication impossible. One of the new technique has been proposed to encrypt data confidentiality while making de-duplication feasible, i,e convergent encryption. This convergent encrypt provides one convergent key to encrypt/decrypt the data, which is obtained by computing the cryptographic hash value of the content of the data copy. After completion of key generation and data encryption, users retain the keys and send the cipher text to the cloud. Since the encryption operation is deterministic and is derived from the data content, identical data copies generate the same convergent key and hence the same cipher text. A secure proof of ownership protocol [11] is also required to provide the proof that the user indeed owns. This is all for prevent unauthorized access, the same file duplicate will found, this process will occur. A pointer from the server will provide to user, after the proof submission, who are having the subsequent file without needing upload the same file.

The encrypted file can be downloaded by the user and also decrypted by the corresponding data users with their convergent keys. Thus, convergent encryption allows the cloud to perform de-duplication on the cipher texts and the proof of ownership prevents the unauthorized user to access the file. "Differential Authorized De-Duplication Check" cannot supported by the previous de-duplication systems. With the authorized de-duplication system, each user issued a set of the privileges during system initialization. To specify which type of user is allowed to perform the duplication check and access the files is decided by the uploading each file to the cloud and is also bounded by the set of privileges. The user have to take the file and the own privileges as




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RESEARCH ARTICLE

# A Framework for Evaluating Medical Blog and Camera Opinions Based on Opinion Mining and Sentiment Analysis

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Opinion mining also called sentiment analysis is a process of finding users opinion about particular topic. The key challenge faced in opinion mining is that the natural language is highly unstructured in nature and interpretation of the meaning of a particular word, phrase or sentence by a machine is cumbersome. But the usefulness of the sentiment analysis is increasing day by day as large source of user generated contents (in the form of blogs, comments, reviews, wikis) act as important source for web mining which can be used for product feedback analysis, and for decision making to users. In this work, the efficiency of the feature extraction methods and classification algorithms for classifying cameras reviews were investigated. Opinions expressed on cameras are taken from Amazon website. TDF × IDF is utilized for the extraction of features from camera reviews. Features transformation is undertaken by using PCA and kernel PCA. Three classification algorithms Naïve Bayes, K Nearest Neighbour and Classification and Regression Trees (CART) algorithms were used to investigate the quality of the extracted features. Experimental results demonstrate that features extracted using TDF × IDF with kernel PCA enhances the classification precision of the classifiers. Outcomes reveal that CART algorithm has higher classification accuracy than other classifiers.

**Keywords:** Opinion Mining, Sentiment Analysis, Web Mining, Naïve Bayes, K-Nearest Neighbor, Classification, Regression Trees.

## 1. INTRODUCTION

Opinion Mining (OM) is a kind of natural language processing for the purpose of recording attitudes and sentiments of the common people regarding certain topics, products or service. OM recognizes subjectivities as well as objectivities of texts and classifies them with regard to the opinions orientation of subjective texts.[6] Cameras are popular in social as well as computing landscapes and implanted in customer gadgets such as smart phones, tablets, laptops as well as wearable gadgets like Google Glass, Narrative Clips and Aerographers. They are on the fringe of becoming a ubiquitous device. Opinion holders are persons or enterprises holding a particular opinion. In product review sites, forums or blog posts, opinion holders are the writers of those posts. Online reviews express opinions about a product or service and users evaluate a product or service based on these opinions before buying or using the product. Due to the huge amount of reviews available in different websites, it is hard to comprehend all the opinions. Opinion mining summarizes and the polarity of the various reviews which helps in gaining a overall picture about a product or service. The Sentiment is classified as negative, neutral or positive on retrieving the information from the review. Various techniques such as clustering, supervised learning methods classify sentiment polarity. Sentiment classification has been widely researched and several approaches are surveyed in literature.[7] The efficacy of the feature extraction methods and classification algorithms for classifying cameras reviews were investigated. Opinions expressed on cameras are taken from Amazon website. TDF × IDF is utilized for the extraction of features from camera reviews. Features transformation is undertaken by using PCA and kernel PCA. Naïve Bayes, K-Nearest Neighbour classifiers and CART algorithms performance evaluations are investigated.

## 2. LITERATURE SURVEY

Vo et al. proposed method to extort and sum up product features and related opinions from a huge amount of

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RESEARCH ARTICLE

# A Modified Method for High Dimensional Data Clustering Based on the Combined Approach of Shared Nearest Neighbor Clustering and Unscented Transform

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This paper presents a novel approach to lessen the hubness dilemma and identify the curse of dimensionality present in the high dimensional data by means of the shared nearest neighbor clustering (SNNC) based on unscented transform (SNNC-UT). The main function of SNNC is to determine the cluster points such that the points inside a cluster are almost related to each with respect to any one of the characteristics other than to other points in a different cluster. SNNC based on unscented transform (SNNC-UT) is utilized to compute the probability (relative) to achieve a superior clarification of density. In addition, Unscented Transform estimation achieves the best results on distance measure utilizing the performance improvement with Gaussians model. The experimental result clearly shows that SNNC-UT method attains the improved cluster quality, minimal time consumption for clustering and decreases the consumption of energy compared to other existing methods.

**Keywords:** Shared Nearest Neighbor Clustering, Unscented Transform, Hubness, High Dimensional Data, Clustering.

## 1. INTRODUCTION

A Shared nearest neighbor clustering algorithm is used to identify the core points and effectively removed the noise present in the point data set. The merits of SNN similarity is, it cannot handle the direct similarity and resolves some of the problems.[1] In this similarity, an object is close with another object and these objects belong to the different cluster. In addition, the SNN similarity is comparatively less sensitive to the changes of density and spatial dimensions since it reveals the local structure of data. SNN is applied to control the large multidimensional and dynamic databases. Subspace clustering determines the efficient cluster validation except the problem of hubness is not discussed.[3] But Shared Nearest Neighbor Clustering based on Unscented Transform (SNNC-UT) method to conquer the draw backs present in the traditional clustering approaches especially on high dimensionality, hubness problem with determination of cluster data and metric limitations. The quality measures such as clustering quality, clustering time, distance measurement ratio, and energy consumption are utilized to evaluate the recital of SNNC-UT and k-nearest neighbor hubness in clustering. It is relatively not sensitive to variations in normal density and high dimensionality. The border, core and noise points are determined by using the SNN density. The SNN method is used in different applications namely Earth science data and word clustering. The nearest-neighbor algorithm method is used to perform different types of agglomerative hierarchical clustering in cluster analysis.[4] Nearest neighbor search is an accumulation problem for determining the most similar or closest points. It is otherwise recognized as proximity search, similarity search or closest point search. Closeness is specified in conditions of dissimilarity function as the fewer related points are the objects and the larger similar points are conveyed in terms of function values. The SNN method decreases the hubness and also improves the accuracy of the clustering.[5] A shared nearest neighbor is handled by different densities and other difficult situations. The SNN scheme is suited to deal with data complexity, heterogeneity and high dimensional.[6]

Figure 1 illustrates the SNN method. The shared nearest neighbors clustering methods is a graph based method. By using different parameters, the similarity makes less sensitive graph based on the shared nearest neighbors.[7] For clustering, the distance or a measure of similarity is needed

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*RESEARCH ARTICLE*

# Detection and Segmentation of Retinal Blood Vessel in Digital RGB and CIELUV color space Fundus Images

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**ABSTRACT:**
The identification of retinal blood vessels is very important but crucial task to analyze the severity of the retinal diseases such as diabetic retinopathy, macular degeneration, central retinal vein occlusion, central retinal artery occlusion, retinal detachment and branch retinal vein occlusion. It is evident that huge number of computer based automated algorithms are developed for the accurate detection of blood vessels and optical disc. Most of the work utilizes the retinal fundus images in RGB color space. The proposed work implements the detection and segmentation of retinal blood vessel in RGB and device independent CIELUV color space. The proposed work for the segmentation retinal blood vessel is based on adaptive histogram equalization, median filtering and morphological operations.

**KEYWORDS:** Segmentation, Retinal Blood Vessel, Adaptive Histogram Equalization, Median Filtering, Mathematical Morphology

## 1. INTRODUCTION:

Retinal blood vessel detection and segmentation is a vital process for the precise illustration, analysis, diagnosis, planning of early treatment and surgery for retinal diseases such as diabetic retinopathy, macular degeneration, central retinal vein occlusion, central retinal artery occlusion, retinal detachment and branch retinal vein occlusion[1-3]. Recent years, due to the advancement of latest technologies, a huge number of automated methods developed for the segmentation of blood vessels from retinal color fundus images[4-6]. However, identification and segmentation of retinal blood vessels still remains an exigent assignment due to the abnormalities, non-uniform illumination, varying shape and size of the vessels, and anatomical variability between subjects[5].

Number of works presented innovative methods[21-27] for the automatic detection and segmentation of retinal vessels ns in color fundus images. The proposed work implements the detection and segmentation of retinal blood vessel in RGB and device independent CIELUV color space. A color space is nothing but a method or way of creating and visualizing colors[9]. Human eye describes color as three important attributes of hue, brightness and colorfulness[10]. But a computer monitor define color as the percentage of red (R), green (G), and blue (B) phosphor emissions[11]. Various color spaces had developed for different applications[13]. The input image taken from image sensor is usually in RGB color space. However, this device dependent and non uniform color space is not suitable for objects identification and recognition of colors[12]. Moreover, it is very difficult to find out an exact color in RGB color space. So it is very important to transform RGB color image into other color spaces such as CIELuv[14]. The main advantage of CIELuv color space is that it is device independent. i.e., the same color information is displayed irrespective of equipment[18]. CIELuv color space is uniformly derived from CIEXYZ color space[17]. In perceptual uniform

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# SPECTRAL CLUSTER BASED DECISION TREE DATA MINING TECHNIQUE FOR ANALYZING STUDENT PERFORMANCE IN HIGHER EDUCATION INSTITUTIONS

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*ABSTRACT*

*Data mining is the method of determining patterns in large datasets with artificial intelligence, machine learning, statistics and database systems. The main goal of higher education institution is to employ data mining methodologies for learning student's performance in the educations. Data mining offers many tasks that are used to analysis the student performance. The classification task is designed applied to calculate student's performance. In addition to, many approaches are used for data classification to support decision tree method. The decision tree technique is employed to accurately predict the student performance. The existing work presented a SVM Prediction technique for evaluating the student Grade Point Average (GPA) in computer education and instructional technology at the end of first, second, and third-year courses.*

*Three kinds of procedures are involved in SVM prediction data mining technique, that are data preparation, formulation of prediction model and evaluation of the SVM prediction model. By using linear arithmetic, the SVM prediction model performs tasks of classification and regression using linear combination of features based on variables. However, the SVM technique does not provide suggestive methods for enhancing the student GPA. This technique fails to determine the exact recollect values and does not carried out subjective analysis. To overcome these drawbacks, the proposed work presents Spectral Cluster based Decision Tree Data Mining Technique for analyzing Student Performance in Higher Education Institutions.*

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# Framework for Evaluating Camera Opinions

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**Abstract:** Opinion mining plays a most important role in text mining applications in brand and product positioning, customer relationship management, consumer attitude detection and market research. The applications lead to new generation of companies/products meant for online market perception, online content monitoring and reputation management. Expansion of the web inspires users to contribute/express opinions via blogs, videos and social networking sites. Such platforms provide valuable information for analysis of sentiment pertaining a product or service. This study investigates the performance of various feature extraction methods and classification algorithm for opinion mining. Opinions expressed in Amazon website for cameras are collected and used for evaluation. Features are extracted from the opinions using Term Document Frequency and Inverse Document Frequency (TDF×IDF). Feature transformation is achieved through Principal Component Analysis (PCA) and kernel PCA. Naïve Bayes, K Nearest Neighbor and Classification and Regression Trees (CART) classification algorithms classify the features extracted.

**Keywords:** K nearest neighbor and Classification and Regression Trees (CART), naïve bayes, opinion mining, Principal Component Analysis (PCA) and kernel PCA, TDF×IDF

## INTRODUCTION

Opinion mining in textual materials like Weblogs is another technologies dimension facilitating search and summarization. Opinion mining identifies author's viewpoint on a subject instead of just identifying subject alone. Present approaches divide problem space into sub-problems. For example, creating a useful features lexicon classifies sentences into positive, negative or neutral categories. Present techniques identify words, phrases and patterns indicating viewpoints (Conrad and Schilder, 2007). This was difficult, as it is not just a keyword which matters, but the context. For example, this is a great decision, reveals clear sentiment and but that the decision announcement produced much media attention is neutral.

Opinion mining is also termed as sentiment analysis/sentiment classification. Opinion mining emphasis is not on topic of the text, but the author's attitude to the topic. Recently, opinion mining was applied to movie reviews, commercial products and services reviews, to Weblogs and to News. Such subtasks include.

**Subjectivity analysis:** Involves determining if a text is objective or subjective; this is also a binary classification task.

**Polarity analysis:** Includes predicting whether a text established as subjective is positive or negative in polarity.

**Polarity degree:** Measures polarity degree, positive/negative in subjective text.

Generally, opinions are expressed on anything, e.g., a product, service, topic, individual, organization, or event. The term object denotes the entity commented on. An object has components (or parts) and attributes. Each component also has sub-components and attributes. Thus, based on part-of relationship an object can be hierarchically decomposed.

**Definition (object):** An object O is a unit which is a product, event, person, organization or topic. It is connected with a pair, O: (T, A), where T is components (or parts) hierarchy or taxonomy and O's sub-components and A an attributes set of O. Each component has own sub-components and attributes sets.

**Definition (opinion passage on a feature):** A feature f opinion passage of object O evaluated in d is a consecutive sentences group in d expressing positive/negative opinion on f. It is possible that a single sentence states opinions on more than one feature, e.g., "This camera's picture quality is good, but has a short battery life".

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# PERFORMANCE EVALUATION OF FEATURE EXTRACTION AND CLASSIFICATION ALGORITHM FOR OPINION MINING

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## Abstract

In brand and product positioning, consumer attitude detection, customer relationship management, and market research, opinion mining has an important role in text mining applications. Applications lead to new generation companies/products for online content monitoring, online market perception, and reputation management. Web expansion inspires users to contribute/express opinions through blogs, videos, and social networking sites. These platforms ensure information for sentiment analysis regarding a product or service. This study investigates performance of varied feature extraction methods and classification algorithms for opinion mining. Opinions expressed in Amazon website for cameras are collected and evaluated. Features are from opinions using feature selection based on information gain and are classified using kNN Boosting algorithm.

***Keywords:*** *Opinion mining, Feature Extraction, Feature Selection, Classification, K Nearest Neighbour and Boosting Algorithm.*

## 1. INTRODUCTION

Opinion Mining (OM) is a sub-discipline of computational linguistics focusing on extracting people's opinion from the web. It is a Natural Language Processing (NLP) and Information Extraction (IE) task to get a writer's feelings expressed in positive / negative comments, questions/requests, by analysing documents. Generally, sentiment analysis determines a speaker's or a writer's attitude regarding some topic or a document's overall tonality. The recent huge increase in internet usage and exchange of public opinion is the force behind OM now [1].

OM operates at the level of documents, text pieces of varying size/formats, e.g., web pages, comments, product reviews, or blog posts. Definition 1 (Document) Document D is text in natural language. Assuming that every document discusses one topic, not all topics discussed in same document are to be related. Definition 2 (Topic) Topic T is a event, abstract concept, or named entity, mentioned in a document D. Definition 3 (Sentiment) Sentiment S is an author's attitude, opinion, or emotion expressed on topic T. Definition 4 (Sentiment Polarity) sentiment polarity is a point on an evaluation scale corresponding to positive or negative evaluation of the sentiment's meaning [2].

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*SPECIAL ISSUE ON RECENT RESEARCH CHALLENGES IN BIO-MEDICAL APPLICATIONS*

# Fish Swarm Optimization for Feature Subset Selection in Medical Information Blog Opinion Mining

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**With search for health related information increasing in the web and availability of various blogs for medical information, analysis of subjective information is challenging. Opinion Mining is an emerging area, which labels an opinion as positive or negative. Opinion mining has been extensively used in product / movie reviews and to the best of our knowledge has not been investigated on data collected from medical question and answer blogs. Feature selection for labelling is challenging, due to the various medical terminology used. For example, the common cold is also called rhino pharyngitis, upper respiratory tract infection or naso-pharyngitis. This work investigates a novel feature selection technique using Fish Swarm Optimization, which identifies key medical concepts found in blogs and labels whether the opinion of the patient is positive or negative for the treatment undertaken.Three classification algorithms Naïve Bayes, K Nearest Neighbour and Classification and Regression Trees (CART) algorithms were used to investigate the quality of the extracted features.**

**Key words:** Opinion Mining, Principal Component Analysis (PCA), Kernel PCA, Fish Swarm Optimization (FSO).

Opinion is what a person thinks about something. It detects and extracts subjective information in text documents[1]. Opinions are subjective expressions describing people's sentiments/appraisal/feelings to entities/events/properties[2].Opinion mining studies opinions at word level, sentence level and document level[3].It is a new discipline, which attracted attention in fields like marketing, personal affective profiling and financial market prediction.

Opinion mining (OM), also called Sentiment classification or Polarity classification, is a binary classification task labelling an opinionated document expressing either overall positive or overall negative opinion. A technique to analyze subjective information in many texts and studies is sentiment classification. An approach to sentiment classification is using machine learning algorithms. Sentiment analysis tasks include classifying a text polarity at document, sentence or feature/aspect level expressing opinions, which are positive, negative or neutral. Sentiment analysis is performed at document, sentence and feature levels[4].

Feature extraction identifies/selects sufficient features set to characterize a texture. Image coding provides a compact texture description from chosen features. By representing a complex texture with limited measurable features/parameters, texture analysis achieves dimension-reduction enabling automated texture processing[5].

Feature Selection (FS) identifies significant features and eliminates irrelevant/dispensable ones. FS, also called feature subset

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# A NOVEL RESOURCE PROCUREMENT MECHANISM SCHEME WITH EFFICIENT COST AND PERFORMANCE OPTIMIZATION USING CLOUD

**Dr.P.Latha**
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**Abstract**—We present a cloud resource procurement approach which not only automates the selection of an appropriate cloud vendor but also implements dynamic pricing. Three possible mechanisms are suggested for cloud resource procurement: cloud-dominant strategy incentive compatible (C-DSIC), cloud-Bayesian incentive compatible (C-BIC), and cloud optimal (C-OPT). C-DSIC is dominant strategy incentive compatible, based on the VCG mechanism, and is a low-bid Vickrey auction. C-BIC is Bayesian incentive-compatible, which achieves budget balance. C-BIC does not satisfy individual rationality. In C-DSIC and C-BIC, the cloud vendor who charges the lowest cost per unit QoS is declared the winner. In C-OPT, the cloud vendor with the least virtual cost is declared the winner. C-OPT overcomes the limitations of both C-DSIC and C-BIC. C-OPT is not only Bayesian incentive-compatible but also individually rational. Our experiments indicate that the resource procurement cost decreases with an increase in a number of cloud vendors irrespective of the mechanisms. We also propose a procurement module for a cloud broker which can implement C-DSIC, C-BIC, or C-OPT to perform resource procurement in a cloud computing context. A cloud broker with such a procurement module enables users to automate the choice of a cloud vendor among many with diverse offerings and is also an essential first step toward implementing dynamic pricing in the cloud.

**Index Terms**—Cloud computing, mechanism design, cloud broker, resource procurement, reverse auctions, multi-attribute auctions, dynamic pricing

## 1 INTRODUCTION

CLOUD computing is an increasingly popular paradigm of offering services over the Internet [1]. It is also an active area of research, and the popularity of this paradigm is growing rapidly. Many companies like Amazon, IBM, Google, salesforce.com, Unisys, and so on, now offer cloud services. The main advantage of cloud computing is the ability to provision IT resources on-demand (thus avoiding the problems of over-provisioning and under-provisioning which are commonly seen with organizations that have widely variable requirements due to growth/shrinkage, seasonal peaks, and

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# Applications of Biometrics and Facial Recognition in the Remote Learning Environment

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**Abstract**

As cameras have become an critical aspect in present day computer systems and cellular devices, and the capability of these cameras in computer systems and mobile devices are ever increasing, facial awareness is turning into an without difficulty reachable functionality for many laptop applications. Another place that has benefited from the quick advancement of technology, together with skills of computers as nicely as the pace and bandwidth of the Internet, is distance learning. Online schooling and coaching are nowadays an emerging and prosperous region of business. More and greater ordinary greater academic institutes are offering on-line classes, joining their pure on line counterparts and competitors. In this paper, we first talk about frequent algorithms and methods used in facial recognition. We then existing methods to integrating facial recognition into Web purposes and explore how facial recognition may also be employed in distance getting to know surroundings to improve the effectiveness and effectivity of distance learning. At last we describe practical methods to integrate facial cognizance modules into current learning administration systems.

**Keywords:** Distance Learning, Learning Management Systems, Facial Recognition, Biometrics,

## I. Introduction

Facial awareness is turning into a more and greater famous and on hand biometric method to enhance computer applications. Government agencies and banks have been actively integrating facial consciousness into their systems. The TSA is working on a Registered Traveler software the use of biometrics in order to conduct safety screenings in a faster trend [1]. Several banks nationwide are looking for approaches to implement facial focus into ATMs [2]. Another place that has been through a speedy growing due to advancement in technologies is distance learning. According to the 13th annual record of the nation of online getting to know in US Higher education, an on line record titled Tracking Online Education in the United States, there have been in whole of 5.8 million distance studying college students in the US in Fall 2014, amongst which 2.85 million had been taking all publications on-line and the other 2.97 million have been taking part of their route load on-line [3]. In this paper, we strive to research and discover methodologies to put in force facial focus systems and

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# An Efficient ECG Detection and Compression Scheme for Wearable Sensor

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**Abstract**

This paper affords a (ECG) conversion approach for an environment friendly ECG blonding and propagate format for wearable sensor. The supplied algorithm is artwork movie at lowering the common boggle per obligation by way of communion the new release load school harmonic analyze signal-conversion responsibility surplus for wearable traps. The propagate algorithm, which is adjustable on a linear datum presage plan, accumulate a lossless bit propagate ratio of 2.286x. The QRS blonding algorithm effort a refined (Se) of 99.68% and sensitivity prediction (+P) of 99.90% when examined with the MIT/BIH Arrhythmia search. Lower brocade superior and appropriate charge improves the scoping tinning follow for wearable/day room ECG traps.

Keywords

Wearable Traps, Wireless Sensors, Quantize Wavelet Convert, ECG-on-chip, Lossless Datum Compression, QRS Blonding.

## I. Introduction

Alternative medicinal drug authorization is asymptotic turning into the capital contributor of expenditure in many countries .U.S. separate spends roughly 18% of its GDP on healthcare [1]. Cardiovascular diseases are one of the leading causes of the brocade drain. These defray are anticipated to scarlet gilia in the coming years due to an growing old malthasian, as a result of growing time expectantly. The deceit of time in this continuity can be first-class by using awareness on prevention and early blonding of diseases. This can be gather by way of reactionary and stride-term console of individual's cardiovascular health using low cost wearable electrocardiogram (ECG) nano diploma traps (e.g. [2-3]).The major points of the ECG, i.e., the P, Q, R, S, and T points, supply communicate derwent the digitoxin sanitary of the operator. A wearable ECG sensor, as display in Figure. 1, can be used to obtain, conversion, and broadcast transmit ECG wave to a console center. The predominant gauntlet complication in the stage of the sensor is to make the trap low prodirectory, unobtrusive, handy to use with stride battery time for session each.A excessive flat of integration with inbuilt wave acquisition and datum sickness of consuption a sensor. The electricity ration in aspect. a administrator is the wireless transceiver, and hence, to lift out preliminary ECG information obligation like QRS blonding [4] and RR interval recognition soviently. This lets in the broadband to be

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# A Study on Missing Data Management

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**Abstract**
Missing data, a power hassle in most scientific research, need to be handled very carefully, as positions of data are fundamental in each analysis. Mishandling missing values may additionally cause distorted evaluation or may also generate biased results. Valid and reliable fashions require accurate statistics preparation. Dozens of methods have been proposed by means of methodologists to tackle the problem. Appropriate method be taken into consideration for a precise study in order to acquire environment friendly and valid analysis. In this find out about we talk about special methods to cope with missing records and examine three imputation methods: Arithmetic Mean Imputation, Regression Imputation and Multiple Imputation using EMB algorithm, performed on three facts sets from UCI repository under the assumption of MAR primarily based on Root Mean Square Error (RMSE) as evaluation criteria.

**Keywords -** Multiple Imputation, Expectation Maximization with Bootstrap approach (EMB), Root Mean Square Error (RMSE)., UCI database, Missing At Random (MAR), Missing Completely At Random (MCAR), Missing Not At Random (MNAR)

## I. INTRODUCTION

In most scientific research domain like Biology [1], Medicine [2] missing statistics are common problems. One of the most difficult decision confronting researcher is to select the most terrific approach to take care of lacking data. Numerous techniques are used in literature to manage lacking data. Moreover dealing with missing statistics are no longer typically addressed in most literature. Unfortunately most of the statistical packages implement historic standby methods which are prone to statistical bias. There are exceptional techniques which are being used by people: Delete the data containing lacking data;

- Use attribute mean;
- Use attribute median;
- Use a global consistent to fill in for lacking values two which appear no longer applicable to the decision attribute;
- Use a data mining method.

In this learn about we examine one-of-a-kind imputation methods. We use three datasets – UCI Breast Cancer Dataset, UCI Chronic Kidney Disease Dataset and UCI Hepatitis Disease Dataset without missing value, based on evaluation standards Root Mean Square Error (RMSE). The paper is organized as follows. In area II, missing data mechanisms are discussed. Section III explains the methods of handling missing data. Section IV describes statistics units used in this study. Section V

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# Estimation of sufficient number of Groups in Partitioned Techniques using Data Clustering Approach

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**Abstract** - The partitioned clustering techniques, such as k-means, have advantages in applications involving a large amount of data, however a particularity of this kind of clustering is to set up a priori the number of enter groups (k). So in practice, it is vital to repeat the test with the aid of organising one of a kind numbers of groups, deciding on the solution that exceptional fits the objective of the problem. Therefore, to validate the effects received it is crucial to have validation mechanisms that allow evaluating the formation of the agencies appropriately. An evaluation strategy is thru validation indexes that assist decide if the formation of the groups is adequate. These methods are based on estimates that pick out how compact or separate the fashioned businesses are. This paper offers validation indexes used as a approach to decide the wide variety of relevant groups. The effects got point out that this assessment strategy ensures an adequate way the dedication of the preferred quantity of groups.

Keywords: Clustering, data mining, k-means, businesses number, validation indexes.

## 1. Introduction

A modern-day reality of data mining is its role as a supportive technological know-how that can remedy two primary challenges: a) work with facts sets to extract and find out facts of interest, and b) use appropriate methods to analyze, apprehend and perceive developments and behaviors that facilitate a better understanding of the phenomena that encompass us and assist us in the decision-making procedure (Molero, 2008; Molero, 2014). One of the tasks of data mining and pattern cognizance to assemble models of expertise extraction is clustering, whose goal is to consider similarities between the records to signify them in a few groups, that is, a heterogeneous populace of statistics is divided into a quantity of homogeneous subgroups according to the similarities of their documents (Berry and Linoff, 2004; Sumathi and Sivanandam, 2006). Deciding the quantity of agencies or partitions in which a data set need to be divided is an vital problem to be faced when working with clusters (Larose, 2005). In some cases, the received groups, after making use of some algorithm of clustering, not represent the actual structure that the data supply owns. For this reason, it is fundamental to have quantitative measures to consider the formation of groups. This article offers the clustering as one of the tremendous duties of information mining, which is addressed with the aim of publicizing the importance of the evaluation of companies acquired through partitional techniques, such as k-means. Validation indexes had been used as a strategic approach to evaluate if the formation

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# High Speed CMOS Comparator

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**Abstract**

Analog-to-Digital conversion method is an digital procedure in which an analog sign is changed, except altering its quintessential contents, into a digital signal. Latched comparators use positive remarks mechanism (aids in the input signal) to re-generates (amplifies) the analog input sign into a Full-scale digital stage output signal .This paper presents a CMOS comparator that reduces the common propagation prolong and hence gives greater speed. The proposed design is simulated in 0.25µm CMOS Technology by means of using Tanner EDA Tools. CMOS Comparator shows that the universal propagation extends of the comparator, TPD, is 1.7872e-9 seconds, with a 1.0 V supply voltage.

**Keywords:** Comparator, CMOS, Dynamic Latched Comparator.

## Introduction

Cmos entirely dynamic latched comparators are majorly used in Analog to Digital converters (ADCs), statistics receivers and Memory Sense Amplifiers (SAs) because they grant high speed, decreased energy consumption, full swing output and high enter impedance[2]. Dynamic latched comparators hire re-generative stage, which consist of cross coupled inverters, to provide a effective remarks mechanism. This regenerative stage is used to convert a differential voltage, from the input stage, into a full swing digital output country at a very quick price [8].

## Literature assessment and objectives

D. Y. Kim et. al. [3] "The Design of the High Speed Amplifier Circuit for Using in the Analog Subsystems" a excessive velocity cmos based totally an amplifier circuit and this amplifier circuit is further used to design a high pace cmos comparator, which is further utilized in specific analog to digital converters. The designed amplifier and comparator circuit is connected in complementary trend to grant the reap stage to make bigger speed.

Daniel Schinkel et. al. [6] investigated "A Double-Tail Latch-Type Voltage Sense Amplifier" a latch type voltage sense amplifier that has one tail transistor which limits the total modern-day flowing via the both of the output branches; it shows sturdy dependency on pace and offset voltage with one-of-a-kind common-mode input voltage Vcom. To alleviate this disadvantage, the comparator with separated input-gain stage and output-latch stage was introduced. This separation made this comparator have a lower and extra steady offset voltage over huge input common-mode voltage (Vcom) degrees and function at a decrease provide voltage (VDD) as well.

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# Effective Utilization of Data Mining Techniques for Digital Security

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## ABSTRACT

In this paper we recommend and present about various information mining strategies that we have successfully associated for computerized security. These applications join anyway are not limited to damaging code area by mining twofold executables, framework intrusion acknowledgment by mining framework development, characteristic disclosure, and data stream mining. Information mining based interference area instruments are incredibly profitable in discovering security breaks. Information mining and Cyber security assumes a crucial job in viable use and subsequently the proposals depend on the Support Vector Machines (SVM).
**Keywords:** Cyber Security, Data Mining, SVM

## INTRODUCTION

Guaranteeing the trustworthiness of PC frameworks, both in association with security and with regards to the institutional presence of the nation all things considered, are a creating concern. Security and obstruction frameworks, selective investigation, ensured advancement, and data build advertise segments that depend in light of unhindered and undistorted access would all have the capacity to be to a great degree exchanged off by pernicious intrusions. We need to find the best way to deal with secure these systems. Also we expect strategies to recognize security bursts. Data mining has various applications in security joining into national security (e.g., perception) and in advanced security (e.g., disease area). The perils to national security fuse striking structures and obliterating fundamental systems, for instance, control systems and telecom structures. Data mining frameworks are being used to recognize suspicious individuals and bundle, and to discover which individuals and social events are fit for finishing fear based oppressor works out. Advanced security is stressed with protecting PC and framework systems from pollution in view of harmful programming including Trojan stallions and diseases. Data mining is also being associated with give courses of action, for instance, interference disclosure and looking at. In this paper we will focus generally on information digging for advanced security applications. To understand the frameworks to be associated with safeguard the nation's PCs and frameworks, we need to fathom the sorts of threats. In this we portrayed steady perils and non progressing risks. A steady hazard is a threat that must be followed up on inside an obliged time to keep some destructive condition. Note that non consistent threats can end up being constant perils as new information is uncovered. For example, one could connect that a social affair with psychological oppressors will over the long haul play out some exhibition of fear based oppression.

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# Upcoming and Prominent Technology on Mobile Computing using 5G

**Dr.M.EDWIN JAYASINGH**
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**Abstract -** 5G Technology stays for fifth Generation Mobile technology.5G is a identify utilized as a section of some exploration papers and ventures to suggest the following enormous duration of portable data transfers measures previous the up and coming 4G benchmarks. Presently, 5G is no longer a term authoritatively utilized for any specific dedication or in any professional report yet made open via telecom corporations or institutionalization bodies, for example, 3GPP, WiMAX Forum or ITU-R. New widespread discharges previous 4G are in development via institutionalization bodies, but proper now are not regarded as new versatile eras on account that usage and rollout of frameworks agreeable with 4G is still under way; the goals of a 5G-based data transfers machine would in a perfect world answer the difficulties that a 4G mannequin would exhibit once it has entered far achieving utilization.

**Index Terms** — Nanotechnology, Cloud Computing , Flat IP Network, BDMA, 5G Architecture.

## I.INTRODUCTION

The world has seen a wonderful deal of adjustments in the area of correspondence. Today we no greater utilize landlines. Everybody has a cell phone that capacities 9 to seven. Our handsets now not just maintain us related with the world everywhere additionally fill the need of amusement device. From 1G to 2.5G and from 3G to 5G this universe of records transfers has viewed a variety of changes alongside superior execution with every passing day[2,3,4]. 5G innovation is headed to exchange the route by way of which the greater phase of the purchasers get to their handsets. Clients will trip a stage of name volume and records transmission with 5G pushed over a VOIP empowers contraption. With increasing interest to customers concerning coming near near advancements, sensible bundles and splendid looks; it is essential that versatile makers ought to provide an inside and out OK bundle for maintaining up the client devotion. The most vital and using thinking method of using mobilephone smartphone makers is the production of first-class and most current innovation to rival innovative commercial enterprise sector monsters[9]. We have viewed fantastic mobile phones in a consistent progression, with staggering attributes. Apple has stayed fruitful in inserting so as to shudder the digital world ahead its most recent I-Phone 4G that take the commercial enterprise sector through tempest. In such a little electronic piece substantial aspects are getting inserted. There are not very many mobiles left besides mp3 participant or/and camera. Individuals are concentrating on getting the whole lot barring spending a penny more. Remembering the client's pocket, financial phones are presented with most severe elements [11]. With 5G innovation you can snare you mobile cell phone to your transportable PC for broadband

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# Real time Processing of Global Positioning System Data Using Digital Signal Processing Techniques

**Dr.P.Latha**
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**Abstract:** The Global positioning system (GPS) accuracy can also be affected by a variety of inherent error sources such as satellite TV for pc errors, receiver clock blunders and orbital mistakes etc. In this paper digital signal processing methods such as awful statistics identification and change (BDIM) approach and Kalman filter has been used to beautify the accuracy of GPS altitude. In this paper, the Kalman filter after BDIM substantially decreased the blunders in GPS measurements

**Keywords:** Global positioning device (GPS), Kalman filter, Recursive filter, terrible records identification and modification approach (BDIM).

## 1. Introduction

The NAVSTAR Global positioning gadget (GPS) used in global presents function records at any point at any time, somewhere on earth in the form of longitude, latitude, and altitude. It was first designed and operated via the U.S. Department of Defense [1]. Twenty-nine satellites revolve round the earth each 12 hours at 12 miles away from the earth, consequently overlaying the higher location of the earth. To evaluate the user's role via the usage of the distance, the receiver wished at least 4 satellites. It requires very clear environment for appropriate accuracy. Each satellite TV for pc revolves around the earth by means of one time in 12 hours. The GPS gadget precisely measures the unknown place of a user on earth the use of the integral principle of trilateration [2]. The GPS satellites are placed in such a way that at least 5 to eight satellites are accessible at any factor on earth at any time. Basically, GPS works in three segments- space segment, the control segment, and user segment. The space segment consists of satellites which broadcast signals, user phase consists of special GPS receivers and manipulate segments consists of the grasp manipulate station, base manage station, and floor antennas.

While 5 base station in the manage segment sends facts to the grasp manipulate station, the place grasp manage station corrects the information and send it back to satellites through floor antennas [3]. The accuracy of GPS receiver is affected due to a range of inherent error sources. These error

# A STUDY OF ADAPTIVE CLUSTER DISTANCE BOUNDING FOR HIGH-DIMENSIONAL INDEXING

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***Abstract*** *-Clustering is an important technique for examining data analysis and concentric effort has been taken in different domains including statistics, pattern recognition and data mining for decades. High Dimensional Information retrieval provides significant way to manage the use of various data sources for efficient learning and feature selection. Clustering high-dimensional mathematical data remains a challenging issue. When clustering high dimensional data, the efficiency and accuracy of clustering are very poor. To improve the quality and incorporate machine learning tasks hubness mechanism is used. Hubness is a mechanism related to vector-space data deliberated by the propensity of certain data points also referred to as the hubs with a small expanse to numerous added data points in high dimensional spaces which is associated to the phenomenon of distance concentration. The performance of hubness on high dimensional data unable to cope with many machine learning tasks namely classification, nearest neighbor, outlier detection and clustering. Hubness is a newly unknown problem of machine learning in high dimensional data spaces, which is unsuccessful in automatically determining the number of clusters in the data*

## I. INTRODUCTION

Clustering in high-dimensional spaces is a repeated problem in many domains like pattern recognition and data mining. Later, clustering analysis also helps in gaining the deep knowledge from the distribution of data. Clustering is the process of combining the similar objects together while objects in different groups are dissimilar to the objects of other clusters depending on the predefined similarity measurement. It is an effective technique for analyzing the patterns of high dimensional non-linear data.Clustering real-world data sets have regulardis advantages which are known as curse of dimensionality. Many real-world data sets are comprised of high dimensional feature space. Normally, many algorithms do not produce significant results due to the inherent sparsity of the data space.

Clustering on high dimensional data have low accuracy and quality of the clustering algorithm is poor because of the data objects from a variety of clusters in various subspaces containing dissimilar groupings of dimensions. To improve the quality and to incorporate the machine learning tasks, hubness mechanism is used. Hubness is one of the new issues of machine learning in high dimensional data spaces that could not find out the number of clusters in the data. Nowadays, it is a very challenging job to cluster the non-linear objects. In this research, the above issues are solved. The objective of the proposed work is to improve the efficiency and quality of the cluster in the search retrieval.And also overcomes the clustering based hubness problem and handles the non-linear relationships in high dimensional data variables.

## II CLUSTERING ON HIGH DIMENSIONAL DATA

Clustering is one of the data mining techniques for diversity range of applications. Cluster analysis help in combining the items together which appears as similar one. Clustering is an unverified learning process that partitions the data such that similar data items grouped together in sets referred as clusters which are in a way that they are highly important for identifying the patterns in data. Clustering is the efficient technique for examining the

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# EFFICIENT AUTHENTICATION FOR MOBILE AND PERVASIVE COMPUTING

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**ABSTRACT-** An application in which messages that need to be exchanged are short and both their privacy and integrity need to be preserved, rely on the existence of small devices that can exchange information and form communication networks. In a significant portion of such applications, the confidentiality and integrity of the communicated messages are of particular interest. In this, two narrative techniques for authenticating short encrypted messages that are directed to meet the requirements of mobile and pervasive applications. By taking advantage of the fact that the message to be authenticated must also be encrypted, we propose provably secure authentication codes that are more efficient than any message authentication code in the literature. The key idea behind the proposed techniques is to utilize the security that the encryption algorithm can provide to design more efficient authentication mechanisms, as opposed to using standalone authentication primitives.

**Keywords:** Pervasive, Primitives

## 1. INTRODUCTION

Preserving the integrity of messages exchanged over public channels is one of the classic goals in cryptography and the literature is rich with message authentication code (MAC) algorithms that are designed for the sole purpose of preserving message integrity. Based on their security, MACs can be either unconditionally or computationally secure. Unconditionally secure MACs provide message integrity against forgers with unlimited computational power. On the other hand, computationally secure MACs are only secure when forgers have limited computational power. We utilize the fact that the message to be authenticated is also encrypted, with any secure encryption algorithm, to append a short random string to be used in the authentication process. Since the random strings used for different operations are independent, the authentication algorithm can benefit from the simplicity of unconditional secure authentication to allow for faster and more efficient authentication, without the difficulty to manage one-time keys.

## 2. LITERATURE REVIEW

The Auto-ID Center is developing low-cost radio frequency identification (RFID) based systems with the initial application as next generation bar-codes. We describe RFID technology, summarize our approach and our research, and most importantly, describe the research opportunities in RFID for experts in cryptography and information security. The common theme in low-cost RFID systems is that computation resources are very limited, and all aspects of the RFID system are connected to each other. Understanding these connections and the resulting design trade-offs is an important prerequisite to effectively answering the challenges of security and privacy in low-cost RFID systems.
In cryptography, secure channels enable the confidential and authenticated message exchange between authorized users. A generic approach of constructing such channels is by combining an encryption primitive with an authentication primitive (MAC). In this work, we introduce the design of a new cryptographic primitive to be used in the construction of secure channels. Instead of using general purpose MACs, we propose the employment of special purpose MACs, named \E-MACs". The main motive behind this work is the observation that, since the message must be both encrypted and authenticated, there can be a redundancy in the computations performed by the two primitives.

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# SDF: psychological Stress Detection Framework from Microblogs using Pre-defined rules and Ontologies

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***Abstract:*** Spreading of Unwanted microblogs from Social Networking Sites (SNS) is pervasive in social media that leads to unaccountable disturbances such as Mental disorders, Wastage of precious time, Break-up of relationships, Stressness giving birth to psychological health problems and many more. To overcome these problems, the immense necessity is to ignore those unwanted microblogs in SNS, which is uncontrollable by humans due to addiction towards social media. Even the literate people fall prey to psychological stress from SNS. This seriousness of stress related issues is very rarely attended by researchers, to tackle such vicious microblogs. The prediction strategy is proposed named as Stress Detection Framework (SDF) to analyze the stress in microblog. SDF is developed using *Ontology based Information Extraction technique using Probabilistic Model (GSHL & TreeAlignment Algorithm), set of pre-defined knowledge based logical rules* that constitutes of low-level attributes (simple textual, linguistic words) and visual features (emoticons & Images) and social Interaction (Likes and Dislikes) to detect and predict stress in microblog messages.SDF is compared with TeniStrength that has shown an increase of 94.2% of stress detection rate. The experimental results obtained will aid to take precise decision for blocking/eradicating/ segregating stress related microblogs from Social media (especially SNS).

***Keywords:*** *Psychological stress, Social Networking Sites (SNS), microblogs, Ontology, Stress Detection Framework (SDF), low-level attributes, Social interaction attributes.*

## 1. Introduction

Predicting of Stress related messages in social media especially from Social Networking Sites (SNS) has made adverse affect on human health condition and their behavior. Pew Research reports briefed the upsurge of social media and its impact on civic life due to sharing of information leading towards psychological stress on human minds [1]. The dark face of Facebook SNS is it could collect and then uncover immmerable hidden facts of the individual's privacy unintentionally with other individuals unknowingly. The affordances of Facebook is programmed in such a way that explore the individual profiles, likes, dislikes, relationships, negative psychological emotions, thoughts, events, visibility and persistence resulting in unusual stressfulness [2]. The Surveillance of Facebook Offline and Online contacts had revealed the ex-partners relationships, break-ups and their association of sexual desire ended in degradation of personal growth and stressful life [3]. No doubt, the feasibility of Facebook's social interaction provides the users with uncountable advantages of Fast and economic communication for sharing of information, providing updates, personal satisfaction through entertainment and establishing reliable connectivity with other groups along the wide area networks at cheaper costs.

The accumulation of psychological stress words in microblogs from various SNS (Facebook, WhatsApp, Linkedin, Twitter) of same user is bit difficult task due to different architectures of SNS. As it is well-known fact that, Facebook has its own methodology for collecting of individual profile information at different point of time, where as WhatsApp does not support this facility instead, it uses mobile number through which various activities of the users are attached at one location. Similarly, Twitter has its own affordance of collecting, sharing and responses of user's tweets from different users.

In SNS, Identifying the behavior of user varies from person to person as it depends on various artifacts such as linguistic, usage of patterns, words and their mentality of responses for a given context. To detect those words, WordNet Ontology can be effectively used for this purpose, WordNet Ontology is an intelligent logical dictionary that assists to detect the various synonyms for a single or multiple words [4]. Further, the Probabilistic Greater Similarity Hierarchy Learning (GSHL) and TreeAlignment Algorithms assists in categorizing the predicted synonym of a particular word precisely under a specified Ontology through learning process [16].

Predicting the context from set of existing words is an intelligent mining process, for this machine learning techniques are used which relies on historical knowledge. Most of these techniques are efficient, but are deployed on well-defined data to get the results from which logical rules are formulated.

The hindrance of machine learning technique is they make use of statistical measures which exploit topic-related terms, but the results obtained are not satisfactory in practical applications [5]. TensiStrength program uses the lexical approach with set of logical rules to predict the stress from tweets has given better results when compared to machine learning and sentimental analysis techniques [5]. Thus, studies suggest embedding of well-defined rules in real-time applications, assist for fast and quick retrieval of useful information.

For spying of suspicious messages from Instant Messaging Applications, the Suspicious Message Detection (SMD) framework was developed using Ontology and domain expert

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# SCALABLE DISTRIBUTED SERVICE INTEGRITY ATTESTATION FOR SOFTWARE-AS-A-SERVICE CLOUDS

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**ABSTRACT**: Software-as-a-service (SaaS) cloud systems enable appli- cation service providers to deliver their applications via massive cloud computing infrastructures. However, due to their sharing nature, SaaS clouds are vulnerable to ma- licious attacks. In this paper, we present IntTest, a scal- able and effective service integrity attestation framework for SaaS clouds. IntTest provides a novel integrated at- testation graph analysis scheme that can provide stronger attacker pinpointing power than previous schemes. More- over, IntTest can automatically enhance result quality by replacing bad results produced by malicious attackers with good results produced by benign service providers. We have implemented a prototype of the IntTest system and tested it on a production cloud computing infrastructure using IBM System S stream processing applications. Our experimental results show that IntTest can achieve higher attacker pinpointing accuracy than existing approaches. IntTest does not require any special hardware or secure kernel support and imposes little performance impact to the application, which makes it practical for large-scale cloud systems.

Index Terms:
Distributed service integrity attestation, cloud computing, secure distributed data processing.

## 1. INTRODUCTION :

CLOUD computing has emerged as a cost-effective re- source leasing paradigm, which obviates the need for us- ers maintain complex physical computing infrastructures by themselves. Software-as-a-service (SaaS) clouds (e.g., Amazon Web Service (AWS) [1] and Google AppEngine [2]) build upon the concepts of software as a service [3] and service-oriented architecture (SOA) [4], [5], which enable application service providers (ASPs) to deliver their applications via the massive cloud computing infra- structure.

In particular, our work focuses on data stream processing services [6], [7], [8] that are considered to be one class of killer applications for clouds with many real-world ap- plications in security surveillance, scientific computing, and business intelligence. However, cloud computing infrastructures are often shared by ASPs from different security domains, which make them vulnerable to mali- cious attacks. For example, attackers can pretend to be legitimate service providers to provide fake service com- ponents, and the service components provided by benign service providers may include security holes that can be exploited by attackers. Our work focuses on service integ- rity attacks that cause the user to receive untruthful data processing results. Although confidentiality and privacy protection problems have been extensively studied by previous research service integrity attestation problem has not been properly addressed. Moreover, service integ- rity is the most prevalent problem, which needs to be ad- dressed no matter whether public or private data are pro- cessed by the cloud system. Although previous work has provided various software integrity attestation solutions , those techniques often require special trusted hardware or secure kernel support, which makes them difficult to be deployed on large-scale cloud computing infrastructures. Traditional Byzantine fault tolerance (BFT) techniques can detect arbitrary misbehaviours using full-time major- ity voting (FTMV) over all replicas, which however incur high overhead to the cloud system. A detailed discussion of the related work can be found in Section 5 of the on- line supplementary material, which can be found on the Computer SocietyDigital Libraryathttp://doi.ieeecomput- ersociety.org/10.1109 TPDS.2013.62. IntTest, a new in- tegrated service integrity attestation framework for mult itenant cloud systems. IntTest p rovides a practical service integrity attestation scheme that does not assume trusted entities on third-party service provisioning sites or require applicat ion modifications. IntTest builds upon our previ- ous work RunTest and AdapTest but can provide stronger malicious attacker pinpointing power than RunTest and AdapTest.

Specifically, both RunText and AdapTest as well as tra- dit ional majority voting schemes need to assume that benign service providers take majority in every service function. However, in large-scale multitenant cloud sys- tems, mult

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# Optimization of Coagulant Using Artificial Neural Network

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*Abstract*-The complex nature of drinking water treatment unit processes, utilities have quantifying the relationships that exist between process input and output. Process models, where they exist, are often site specific and they are unable to handle continous variations in one or two key process variables. The artificial neural network technology is a robust artificial intelligence technology that can handle the treatment process. In water treatment, ANNs have enormous potential, especially to support workers in plant operation. Water plants are taking large volumes of data, especially information about water quality parameters, ANNs can be used for the prediction of water quality. With use of ANNs in real time, system will get more efficient, so reducing costs and increasing the quality of water. In this paper, the artificial neural network is used for the prediction of optimum coagulant dosage in Pillur water treatment plant, Coimbatore

## 1. Introduction

*1.1 General:* Water treatment is a well known process and it is used for many years. The raw water quality available in India varies significantly, resulting in modifications to the conventional water treatment scheme consisting of aeration, chemical coagulation, flocculation, sedimentation, filtration and disinfection. The water is treated differently in many water treatment plants depending upon the quality of water entering into the treatment plant. The rapid growth of population has exerted the portable water demand, which requires exploration of raw water sources, developing treatment and distribution systems.

*1.2 Water Quality Parameters:* The water quality parameters which are relevant to this project work and which are used in the artificial neural network development model are discussed. 1.2.1 PH of Water: PH indicates the level of acidity of the water but it actually a measurement of the potential activities of hydrogen ions (H+) in the water sample. The PH range is about 6.0 to 7.8 but for drinking purposes WHO has set a standard PH level between 6.5 to 8.5. The factors affecting the PH value of water is the concentration of carbon dioxide (CO2) in the water.Natural and unpolluted rainwater can be used as acidic as PH 5 to 6 because it absorbs CO2 during the day and release it during the night, PH levels in water can change from day to night.

*1.2.2 Turbidity:* The turbidity may be caused by large amount of clay, silt, sawdust, wood ash, microorganisms and plant fibres. Such particles can cause tastes, carry bacteria and plant nutrients can cause chlorine in the disinfection process. The flow rate of water body is a primary factor influencing turbidity level. High flow rate of water can carry more particles and larger sized

sediment which causes higher turbidity level. In general, turbidity will increase significantly during and afterb rainfall, which causes sediment to be carried in to the stream.

*1.2.3 Colour*: The colour of the stream water is an indication of a source and it can provide important information about the water quality. Darker colour water absorb more of sun heat

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# Extending the Performance of the MANETs by Implementing Distribute Key Verification Mechanism

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**ABSTRACT**—***Generally, in the MANETs different mobile nodes are involved for the communication purpose. And different types are attacked on our network while communication as well due to energy loss of the routing nodes, we can loss the packets. By losing packets, the packet delivery ration will be reduced in the MANETs. To avoid the MANETs breaches or violations, in this paper we implemented distribution key management scheme for MANETs. The key verification done by the sender node to its neighbor nodes; in existing, if the neighbor node key verification may failed, then the packet will dropped or the communication will be stopped there. To avoid this problem means to reduce the network overhead; the implemented mechanism is best mechanism. The proposed mechanism can verify the neighbor node key and it fails then next genuine node will be choosing to send the data. By this we can reduce the network overhead and improve the packet delivery ratio of the MANETs.***
***Keywords— MANETs, Key management, network breaches, network overhead***

## 1. INTRODUCTION

Mobile Adhoc Networks (MANETs) encompass nodes that change role regularly. Each node in a mobile ad hoc network features as each the host and the router, and additionally manipulate of the network is shipped some of the nodes present. The network topology is dynamic because the connectivity many of the nodes varies with time due to node departures, new node arrivals, and also due to movement of nodes. The re-energetic routing protocols [6], [7] (or on-demand protocols) begin a route discovery procedure whilst needed. When a path from the supply to the destination is wanted, direction searching technique is began. Due to increase in the motion of nodes in cellular ad hoc networks (MANETs), frequent link breakages happens regularly which leads to common direction disasters and needs course discoveries. [2], [3], [9] The traditional reactive routing protocol uses flooding to find the routes between supply and vacation spot. It surely broadcast the direction request packet while the direction is wanted. The process keeps till it finds the path to the vacation spot. This broadcasting induces the redundant retransmission. This similarly causes overhead in course discovery. Broadcasting is the simple and essential information dissemination mechanism, wherein a cell node rebroadcasts the path request packets till it has a route to the required vacation spot, and this reasons the broadcast storm problem.

Wireless networks are inherently liable to safety troubles. The intrusion at the transmission medium is easier than for stressed networks and it's far possible to conduct denial of server assaults via scrambling the used frequency bands. The ad hoc context will increase the wide variety of potential security vulnerabilities [4].

Ad hoc networks cannot benefit from the security services offered with the aid of committed gadget along with firewalls, authentication servers and so forth. The safety offerings should be disbursed, cooperative and constant with the available bandwidth. One of the serious assaults to be considered in ad hoc network is DDoS attack. A DDoS assault is a massive-scale, coordinated attack at the availability of offerings at a sufferer machine or network resource. The DDoS assault is released by means of sending a very massive volume of packets to a target system thru the simultaneous cooperation of a massive quantity of hosts that are distributed at some point of the network. The attack traffic consumes the bandwidth resources of the network or the computing resource on the target host, so that valid requests might be discarded. A bandwidth depletion attack is designed to flood the victim network with unwanted traffic that forestalls valid traffic from achieving the victim system.

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# A Review on Reactive & Proactive Routing Protocols and Security Breaches and Remedies in MANETs

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*Abstract*— **In the Mobile Ad hoc Networks (MANETs), Routing protocols have a major role. Depending on the route discovery time the Routing Protocols have been classified into Two Major Categories as Reactive and Proactive. . We know today's popularity and more usage of MANETs in every field which also attracts the intruders to sabotage the privacy of the data and will attack on the security. This paper tries to provide the information about the day by day popularity and more usage of MANETs and overall security breaches and possible solutions.**

*Keywords*— **MANETs, Security, Security Breaches, Remedies, Routing Protocols, Attacks.**

## I. INTRODUCTION

In the MANETS all the autonomous nodes are configured dynamically without any pre-existing routes and without any centralized management system. Depending on the requirements at all the time a new route is established for each node and moreover the data moves freely among all the nodes without any centralized control system. The Nature of Decentralization and dynamic network or route establishment causes a vulnerable to various security attacks which are not common in wired networks. Due to the Dynamic and Temporary route establishment nature of MANETs many researchers have proposed several Safe and secure routing protocols, but the resistance of those proposed and secure routing protocols towards various types of security attacks and efficiency are primary points of concern at all the time in implementing these protocols. Wireless links make MANETs more susceptible to attacks. It is easier for hackers to eavesdrop and gain access to confidential information. It is also easier for them to enter or leave a wireless network because no physical connection is required. They can also directly attack the network to delete messages, inject false packets or impersonate a node. This violates the network's goal of availability, integrity, authentication and nonrepudiation. Compromised nodes can also launch attacks from within a network. Most proposed routing algorithms today do not specify schemes to protect against such attacks.

## II. ROUTING PROTOCOLS

An ad hoc routing protocol is a convention, or standard, or set of rules that controls how nodes decide which way to route packets between routing devices in a mobile ad hoc network.

In the MANETs, all the nodes moves freely without knowing their networks topology, so they have to discover network topology on their own. Here every new node will announce about its inclusion in the network and will get the information about its neighbour's broadcast information too. Apart from that each new node will learn how to reach to nearby neighbour's and will provide the rout information about itself to all others.
In a wider sense all the routing protocols have been classified into the following categories.

- On-Demand Routing Protocol (Reactive)
- Table-Driven Routing Protocol (Proactive)
- Hybrid Routing Protocol (Both Proactive and Reactive)
- Hierarchical Routing Protocol (Proactive or Reactive)

### *A. On-Demand Routing Protocols (Reactive)*

In this type of routing protocol the route is established when it is needed. Source node initiates the route discovery phase by flooding the network with Route Request Packets (RRP). When the packet forwarding process is finished then the route is terminated and route information is discarded from the routing table. Reactive protocol Examples are On Demand Distance Vector (AODV) [2], Dynamic Source Routing (DSR) [3], Flow State in the Dynamic Source Routing (FSDSR) and Power – Aware DSR based.
The main disadvantages of these routing protocols are

- Latency Time is very High to find the Route
- Flooding of RRPs may leads to the blocking of networks
- More RRPs from different nodes may cause congestion problem in the network columns.

Some of the existing Reactive/On Demand Routing protocols are:

- Ad-hoc On-demand Distance Vector routing (AODV)
- Dynamic Source Routing (DSR)
- Light-weight Mobile Routing (LMR)
- Associativity Based Routing (ABR)
- The Enhanced On Demand Multicast Routing Protocol (EODMRP)

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# A Review on Layer Wise Security Issues and Possible Remedies in Mobile Ad hoc Networks

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**ABSTRACT**: There is no doubt many researchers have proposed several safe and secure routing layer design, but the resistance of those proposed and secure routing layer design towards various types of security attacks and efficiency are primary points of concern. In this paper we tried to concentrate on security issues and possible solutions layer wise.

**KEYWORDS**: Security Issues, Possible Remedies, MANET, Network Architecture, Network Topology,Protocols.

## I. INTRODUCTION

An ad hoc routing protocol is a convention, or standard, or set of rules that controls how nodes decide which way to route packets between routing devices in a mobile ad hoc network. In the MANETs, all the nodes moves freely without knowing their networks topology and design, so they have to discover network topology on their own. These challenges include open network architecture, shared wireless medium, stringent resource constraints, and highly dynamic network topology. Consequently, the existing security solutions for wired networks do not directly apply to the MANET domain. Security has become a primary concern inorder to provide protected communicationbetween mobile nodes in a hostile environment. Unlike the wire line networks, the unique characteristicsof mobile ad hoc networks pose a numberof nontrivial challenges to security design,such as open peer-to-peer network architecture,shared wireless medium, stringent resource constraints,and highly dynamic network topology.These challenges clearly make a case for buildingmultifence security solutions that achieveboth broad protection and desirable networkperformance. In this article we focus on the fundamentalsecurity problem of protecting themultihop network connectivity between mobilenodes in a MANET. We identify the securityissues related to this problem, discuss the challengesto security design, and review the state-of-the-art security proposals that protect theMANET link- and all the layer operations ofdelivering data over the multihop wirelesschannel. The complete security solution shouldspan both layers, and encompass all three securitycomponents of prevention, detection, and reaction. Information is the heart of any business or industry. It provides sustenance toorganizational units: empowering and strengthening its users as groups andindividuals. It can be used for or against us, naturally concerning us with thesafety and integrity of our information. If the nature of our information is to bedistributed for accessibility then so must our efforts to secure it.Over the past two decades, the distributed computing industry has utilized theInternational Standards Organization's (ISO) Open System Interconnection (OSI)Model for better standardization of hardware and software components.Some layers have more impact than others when securing information.Networking is a prime concern for information security. The ubiquitous nature of network connectivity may let us access the world from our computer, but it also lets that same world gain access back to us in ways we may not desire.Today's network engineer has no choice but to be security-conscious, and the securityengineer has no choice but to understand the network he is tasked to secure. A great deal of formalized study has been devoted to the science and methodology of designing and maintaining networks. One formal system that network engineers discuss and apply frequently is the OSI Seven Layer Model for Networking, developed by the ISO (International Standards Organization) to define a standardized method for designing networks



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# GLOBAL JOURNAL OF ENGINEERING SCIENCE AND RESEARCHES

## REDUCING THE NETWORK OVERHEAD BY IMPLEMENTING DISTRIBUTED KEY MECHANISM IN MANETS

**Mohammed Aziz Ahmed*[1], Mohammed Sirajuddin[2] & Nazia Kouser[3]**

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**ABSTRACT**

In the wireless sensor networks, the Mobile Ad hoc Networks (MANETs) is a type of networks. The difference between wireless network and MANETs is, in the wireless network the nodes are stable and in MANETs no one node is stable which means these are mobile nodes. Generally, any network hasinformation security breaches.The closing purpose of the security answers for MANETs is to provide protection offerings, which includes authentication, confidentiality, integrity, anonymity, and availability, to cellular user. In order to acquire this goal, the security solution required to provide complete protection spanning the entire protocol stack.And different type of attacks is providing violations to the network user's data. Hence, in this paper we are focusing on the Mobile Ad Hoc Networking (MANET) and Routing overheads for MANETs. And also we will provide the key mechanism to avoid the security violations or breaches.

***Keywords:*** *MANETs, Seurity Breaches, Attacks, Integrity, Anonymity.*

## I. INTRODUCTION

MANET is dynamically establishing cellular nodes networks and not using a fixed infrastructure. Each mobile node is ready with wi-fi transmitter and a receiver with a suitable antenna. Nodes in cell ad hoc networks move freely in the network and they are able to organize themselves in a random way. The crucial zone of ad hoc network is routing protocols [5] because network topologies hold on changing because of the motion of the nodes. All the network related sports like discovering of topology and transport of packets is achieved by way of the nodes itself. The nodes communicate over wireless hyperlinks; they need to compete with the results of radio verbal exchange, such as noise and interference. In Manet the links typically have less bandwidth than a stressed out network. Each node in a wireless ad hoc network features as a number as well as a router. The control of the network is shared among all the nodes of the network.

Since MANET's have special characteristics[1], [8], [9] there are a few crucial metrics in MANET safety which can be important in all security approaches; we call them "Security Parameters". Being unaware of these parameters might also motive a security method vain in MANET. Each security method should be aware of safety parameters All mechanisms proposed for protection elements, must be aware of these parameters and don now not push aside them; otherwise they will be useless in MANET.

The essential vulnerability of MANETs comes from their open peer-to-peer architecture. Unlike stressed networks which have dedicated routers, every cellular node in an ad hoc network may also characteristic as a router and forward packets for different nodes. The wireless channel is obtainable to both valid network users and malicious attackers. As a end result, there is no clean line of protection in MANETs from the security layout angle. The boundary that separates the internal network from the outside international turns into blurred. There is not any properly defined place/infrastructure where we can also installation a single safety solution. Moreover, portable devices, as well as the system security data they store, are vulnerable to compromises or physical seize, in particular low-stop gadgets with susceptible safety. [3], [10] Attackers may additionally sneak into the network through those

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# Fractal Tree Patch Antenna for Wireless Applications

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**Abstract** - This paper gives a fractal tree patch antenna for multiband applications. The proposed antenna consists of scaled variations of round patch with a square slot and rectangular connectors. The antenna has been printed on FR4 epoxy substrate with thickness 1.6mm and relative permittivity of 4.4. All simulations in this work have been carried out by way of using the High Frequency Structure Simulator software (HFSS 13). The proposed antenna with fractals produces a penta-band operation for the S, C, X, Ku and K band applications.
Index Terms - Circular patch, Fractal, Multiband.

## I. INTRODUCTION

Wireless communication is one of the terrific areas in the communication field. To accommodate special requirements in wi-fi verbal exchange we want to design multiband antenna. The patch antenna is commonly used in verbal exchange structures due to the fact of its more than a few benefits such as simple design, high efficiency, low profile and low fabrication cost. The main disadvantage of early patch antenna designs consists of the enormously large size and the narrow bandwidth. Different designs have been developed to overcome the inadequacy in the characteristics of patch antennas and the problem lies in the graph of compact antennas for UWB purposes [1-5].

The fractal nature of the antenna shrinks its size, barring the use of any factors such as capacitors, inductors and diodes. This makes the fractal antenna a fantastic design for wideband and multiband applications. The key characteristic of the fractal antennas is the repetition of their motif over two or extra iterations. The fractal antennas are very compact, multiband or wideband, and have beneficial purposes in cellular and microwave communications.

Nowadays a lot of fractal antennas are added with one of a kind shapes [6-9]. A pentagonal shape with Koch fractal etched internal the patch is developed in [10]. A hexagonal fractal antenna for UWB and multiband operation is brought in [11].

This paper gives a tree structured fractal antenna for multiband applications. The antenna offers suitable performance in five one-of-a-kind frequency bands (3.35–7.47 GHz, 9.28–11.84 GHz, 12.78–14.35 GHz, 14.7–16.52 GHz and 18.3–25 GHz) and is appropriate for military, radar, satellite applications. Section II offers the details of the antenna design. Section III discusses simulations and optimizations of performance of the antenna. The results are discussed in area IV. Conclusion is summarized in Section V.

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