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Energy-Efficient Routing Protocol for Node Lifetime Enhancement in Wireless Sensor Networks

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ABSTRACT

Wireless sensor networks (WSNs) countenance some deceitful attack which may damage instructions and capacity in an elegant way and with irregular performance to fabricate the premier damage without being exposed. WSNs often consist of tiny devices with limited energy, computational power, transmission range, and memory. Energy is one of the most important resources in such networks. Therefore, optimal use of energy is necessary. In this paper, we present a novel energy-efficient routing protocol for WSNs. The suggested protocol may be hierarchic and group built. Every bunch comprises from claiming one cluster head (CH) node, two agent CH nodes, also a percentage conventional sensor hubs. Those reclustering the long haul Also vitality necessities need been minimized Eventually Tom's perusing presenting the idea from CH board. Recent approaches use selective encryption to minimize energy consumption. WSNs are resource con-strained. Moreover, exchange ways need aid utilized to information transmission the middle of An CH hub and the bs. Thorough reproduction effects portray those vitality efficiency, throughput, and prolonged lifetime of the hubs under that impact of the suggested protocol. Future scope from claiming this worth of effort will be delineated.

Key words: Wireless Sensor Network, mobile base station, Path tracing, mo-bile nodes, Energy efficiency, reliability, routing protocol, sensor nodes, Heterogeneous WSN.

1. INTRODUCTION

A Wireless Sensor Network (WSN) consists of the self-directed nodes that are spread spatially for preservation of environmental or substantial states such as humidity, gravity, temperature, etc. WSN integrates an access, between the nodes and a client, to provide wireless connectivity to both the wireless distributed nodes and wired surroundings.

As shown the figure 1, the Common applications of WSNs are Health Care monitoring; Earth sensing, Forest fire detection, data recording, enemy intrusion detection and geo-fencing [1]. In this work, we provide a comprehensive survey on energy-efficient WSN protocols [2].

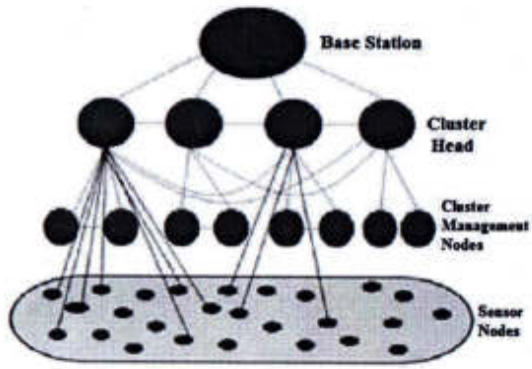

Figure 1: WSN System Basic Architecture

WSN schemes used in routing messages are classified into four categories i.e. Communication model, Network structure, Reliable routing schemes and topology-based routing schemes. It takes the amount of power and energy into consideration to minimize the energy consumption and to increase the lifetime of WSNs. We also discuss and compare their metrics such as scalability, mobility, and power usage [3].

2. RELATED WORK

The most important factor when developing WSN routing protocols is energy efficiency of a node, which has a direct impact on the network lifetime. Several surveys are there including current efforts and future work to develop energy efficient routing protocols. Some of those literatures on routing protocols are presented below with the discussion of comparison of existing protocols and our work.

A survey done on routing protocols on WSNs is discussed in [3] which classifies the routing protocols into three categories according to structure of the network: Flat, location-based and hierarchical infrastructure. These protocols are further classified into query-based, multipath-based, QoS (Quality of service) based and negotiation-based routing techniques according to protocol operations. Thus, the survey describes the limited supply of energy, computing power and bandwidth of the wireless sensor nodes along with the advantages and disadvantages of each routing protocol. In this work, we compare energy efficient routing protocols comprehensively focusing on energy efficiency issues to help the researchers on their work.

This full-text paper was peer-reviewed and accepted to be presented at the IEEE WiSPNET 2017 conference.

Smart Embedded System to Building Strong Physical Embedded Barrier for Security Related Issues of IoT

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***Abstract*—The IoT is very familiar technology. It has created a huge revolution in Internet era. The common people are also getting the benefits of IoT. We can't imagine our world without internet. IoT created a huge income in e-commerce and enterprise which is a part of the internet. But, security is the major issue of IoT. This paper deals with security related issues. In general the IoT is having its own security to protect from burglars. The embedded devices which are connected over internet are also facing the security threats because of limited resources to these devices. These devices are incurable when security issues are aroused. Some sophisticated devices are having secure algorithms to prevent certain level of issues. But in low end embedded devices no such prevention algorithms are build. Now this paper will assist us to control the authorized activities and take them into custody. Here low end embedded devices plays a vital role in protection. These devices respond with high speeds and initiate alerts to nodal centers (hubs), Security of the device can be achieved by operating them at a speed of the processor. But, no I/O device is capable to match the speed of the processor; other way is a high efficient algorithm and smart embedded devices that can help to build a strong Embedded Physical barrier for Security of IoT.**

***Index Terms*—Internet of Things (IoT), embedded device security, Embedded Network management, security lavel implementation, abstraction security with embedded devices & Low end embedded device response.**

I. Literature Survey

Wireless and mobile communication have come into existence long back, but now-a-days there usage is increasing rapidly at high pace. As of now, some of the trending technologies such as WIMAX, 4G Networks, ZigBee and Wireless Mesh Networks are ruling the present day computing. According to Mark Weiser famous article (1991) "Computer of the 21st century" it can be elaborated as "the most exceptional technologies are those that disappear; they weave themselves into the fabric of everyday life until they are indistinguishable from it," has become a reality now. Dix et al. describes present computing as: "Any computing activity that permits human interaction away from a single workstation". From then onwards, there have been a lot of advancements in mobile and wireless technologies towards present and continues computing environment, subsequently these new technologies have been spreading through our lives [4]. Day-to-day embedded computing is widely increasing from cars to Smartphone's and refrigerators to multi media player but security for this mode of communication had been a major concern. Security for these kind of systems are having long-term difficult problems the method of resolving it had been a open challenge rather than desktop and enterprise computing. Security as per today is not a new concept but due to more and more embedded systems are connected to existing internet the means of protecting it has become difficult. Embedded systems design is complicated that includes multiple independent processor cores and secondary bus masters. In accordance with functional components there is parallel system such as boundary scan as well as Built-in-self-test (BIST). Many giant research companies have taken security as major issue and are developing solution for general purpose computing and communication systems [1], [3].

A. Security

However, security is often misconstrued by embedded system designers as the addition of features, security protocols, to the system. In reality, it is a new parameter that designers should keep in mind throughout the design process and also the metrics like cost, performance, and power. The challenges which are unique in embedded systems design require new approaches to security covering all aspects of embedded system design from architecture to implementation. The diverse security requirements are especially essential in embedded systems where increased connectivity, portability, and pervasive design objectives are need to be considered. In fact, pervasive networks have led to an increase in use of embedded systems, like cell phones, PDAs, RFIDs etc., in increasingly diverse applications. Many of these embedded system applications handle sensitive data (e.g., credit card information on a mobile phone/PDA) or perform critical functions (e.g., medical devices or automotive electronics), and the use of security protocols is crucial to maintain confidentiality, integrity and authentication of these applications. Evolution of embedded systems in devices which are connected through Internet, wireless communication or other interfaces as well as the trend towards always growing numbers of devices (IoT) requires a reappraisal of embedded systems engineering processes. It is not possible to meet the minimum level of security required by adding security measures late in the development process. Security engineering as mentioned above needs to be a part of the system development in every stage of the process.

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Efficient Energy Routing Protocol based on Energy & Buffer Residual Status (EBRS) for Wireless Sensor Networks

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Abstract- ***Wireless networks consist of nodes, having the ability that, they can sense and collect the information from the nearby surroundings. It has the responsibility of designed protocol to send this collected information by data gathering and forward it to the outside network via a sink node. Furthermore, WSNs doesn't need any predetermined network structure; all the nodes used in WSN can operate as a router as well as the host. It uses multiple hops to send information to the node outside the communication range through different neighbor nodes. All the sensor nodes in WSN have their range of communication and can send and collect messages straight to each other until they were in the communication range. Moreover, the Self-organizing property of nodes in the network made WSN outstanding amongst the major applications. Nevertheless, the wireless nodes there in the network have a battery with restricted energy and can't be recharge or change once deployed. Hence, the node energy must be utilized efficiently for various functions as sensing the information, processing the sensed information, and transmitting the processed information to another node. With the enhancements of the innovation and cost-effective hardware, our visualization presents a tremendous life enhancement of WSN into several new applications. To modify following such background, the energy-efficient routing protocol is extremely desirable and can be achieved by clustering in WSN. In the literature survey, various energy-efficient routing techniques based on cluster have been given to attain the energy-efficiency and enhance the lifetime of the network. However, these protocols were suffering from the bottleneck node issue. It is the situation in the network where the router node subjected to heavy traffic due to its presence in energy-efficient routing path or high remaining energy. This paper aims to moderate the possibility of the node to become a bottleneck node throughout the application. Thus, we attain the objective by design and develop the cluster-based efficient-routing protocol by selecting the head nodes of the cluster based on their residual energy and buffer status. Performance outcome shows that the projected work out-performs in contrast with present cluster-based routing protocols.***

Keyword: - Wireless Sensor Network; Sink Node, Cluster Head, Energy efficiency, Buffer, Routing, Network Lifetime, Mobile Sink Node, and Control Packets.

I. INTRODUCTION

The wireless sensor networks (WSNs) are built up of "nodes" commencing a small amount to numerous hundreds or sometimes thousands. Moreover, all nodes are associated with one or numerous sensor nodes.

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These wireless nodes have different parts: like an energy source, an electronic circuit for interfacing, a microcontroller, a radio transceiver, and usually a battery or nowadays a power harvesting module in the embedded form [1].

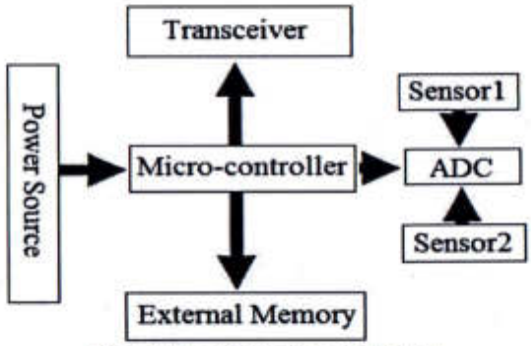

Fig. 1: Basic Structure of Sensors

The three main functions performed by all the wireless nodes are sensing the nature, preprocessing & storage of data information with transmission along with the nodes and with the destination (sink). The WSNs is an isolated system with different sensor nodes to gather and forward the data from surrounding sensor nodes or environment after processing them [2]. The figure below shows various SNs which collects the information from the nearby atmosphere and transfer the collected information to the target node (sink) through gateway [3].

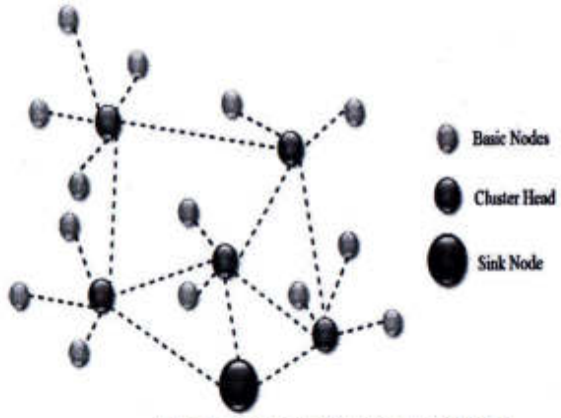

Fig.2. the basic structure of WSN

Characteristics of a good wireless network includes the minimization in consumption of energy for nodes with battery as a source, scalability to a large scale of distribution, node failure handling capacity

DESIGN & IMPLEMENTATION OF MEMORY ARCHITECTURES IN QUANTUM DOT CELLULAR AUTOMATA TECHNOLOGY

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Abstract: The QCA technology is used for designing and implementation of digital circuits efficiently due to its features like smaller feature size, high speed, low power dissipation and high switching frequency. These characteristics prompt memory cell architecture and implementation in QCA as an appealing choice for manufacturing storage devices. CMOS technology is experiencing power dissipation, short channel effects and quantum effects problems with its relation to chip size, which makes it too hard for integrating more transistors, reaching its scaling limits. Quantum Dot Cellular Automata (QCA) is one of emerging nanotechnologies in recent times to overcome this flaw. This paper discusses architectures of several line and loop based memory cells to compare in terms of density, low power, complexity and switching frequency and to deduce an architecture method which is significant for designing memory cells

Keywords: Quantum Dot Cellular Automata, memory cell, architecture, density, complexity, low power

1.INTRODUCTION

In CMOS computing components are becoming smaller in size based on the Moore's law. This has caused CMOS based computing devices to experience several limitations (Misra et al., 2014). Some of important CMOS limitations are high power consumption, interconnection effects, short channel effects, fabrication difficulties and its high cost as a result of CMOS devices, high performance capability and device density which is making difficulties for CMOS technology advancement (Bhoi et al., 2021).

A new alternative paradigm for conventional CMOS technology in nanotechnology called QCA technology has emerged which overcomes flaws which are experienced with CMOS technology (Misra et al., 2015). The QCA technology used quantum cells, which makes it reversible in nature and has a relatively small feature size, low power dissipation and low delay compared to conventional CMOS (Bhoi et al., 2017).

The QCA technology features are very suitable for implantation of memory cells, while designing QCA memory cell architecture, important issue to consider is switching frequency and feedback paths so that so that arrangement of clocking zones are accurate in order for correct operation by means of pipelining (Frost et al., 2002).

Memory architecture, designing in QCA technology cannot be done similar to that of CMOS technology due to QCA's unique characteristics like the placement of the cells, clocking need to be considered so that memory is always in movement.

In this paper, our objective is to discuss and study memory architectures, which are broadly based on the prior line based and loop based memory cell designs, then discuss both line and loop based memory designs for their characteristics like density, low power, design complexity and latency. Lastly, we conclude why loop based architecture design approach of memory cells is suitable.

The paper organization is as follows. Section II briefly discusses fundamentals of QCA technology such as QCA cells, clocking schemes of QCA, and basic QCA gates and memory in motion. Section III discusses existing line and loop based memory cell architectures.

2.FUNDAMENTAL OF QCA TECHNOLOGY

2.1.QCA Cell

A QCA cell consists of four quantum dots placed at each of four corners of a square shaped cell as shown in Figure 1. Two electrons can move diagonally in between any two quantum dots due to coulombs interaction. Based on the position of electrons, polarization of the QCA cell is determined. There are only two possible states of a QCA cell based on polarizations -1 and +1. The QCA cell is in state low or logic '0', if electrons are diagonally arranged on the left side of a QCA cell, then the polarization of the cell is considered to be -1. The

Proceedings of 4th International Conference on Innovations in Electronics & Communication Engineering (ICIECE-2015)

An Electronic Voting System for Haptic Touch Screen Interface

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Abstract

Touch panel interface is becoming a popular technology in many fields. It has been used in specific application systems such as ATMs (automated teller machines), museum displays, and ticketing counters in airports and stations for a while. Now it consolidates its position as a general-purpose interface used in notebook PCs, PDAs (personal digital assistants), and cell phones. The user can easily moves, rotates, zooms in and out, and some other 3D operations by directly touching and dragging the model. The touch panel interface eliminates keyboards and mice for interaction in small devices. It also enables a single device to provide a variety of application interfaces by customizing display layouts. Large-scale touch screen devices such as Microsoft Surface tabletop display efficiently support multiuser collaboration environment. In this project, we propose an approach for effectively designing user-friendly haptic applications especially targeted at supporting the weak users such as the elderly users. Then, we exemplify how the tactile feedback function helps the weak users through the design and development of an electronic voting system. The system uses a touch panel haptic display for allowing the weak to easily confirm, select, and vote their supporting candidate without any assisters. The data will be store in the memory cards and also store in the pc.

Keywords: Haptic Technology, E- voting, ATMs, Touch Interface, 3D operation & PDAs.

INTRODUCTION

In this project, we propose an approach for effectively designing user-friendly haptic applications especially targeted at supporting the weak users such as the elderly users. Then, we exemplify how the tactile feedback function helps the weak users through the design and development of an electronic voting system. The system uses a touch panel haptic display for allowing the weak to easily confirm, select, and vote their supporting candidate without any assisters. The data will be store in the memory cards and also store in the pc.

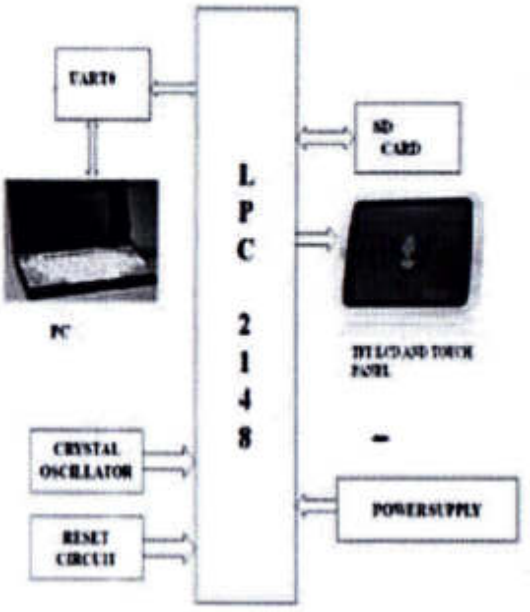
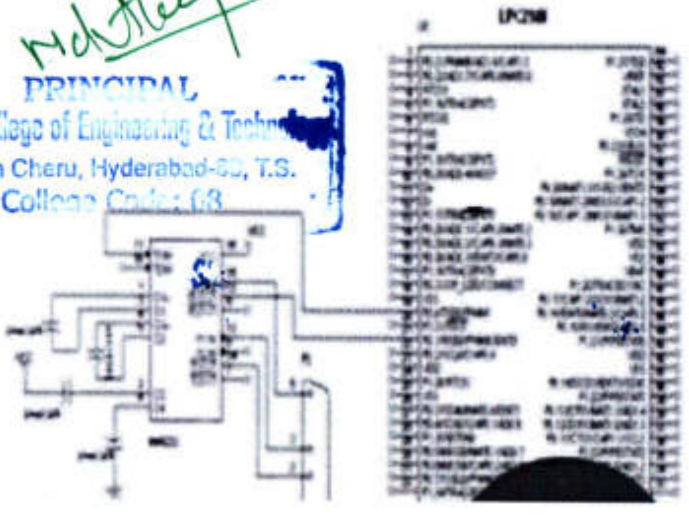


Fig. 1Block diagram of an Electronic Voting machine with HAPTIC touch screen interface



Proceedings of 4th International Conference on Innovations in Electronics & Communication Engineering (ICIECE-2015)

Design of Low Power and High Speed Modified Carry Select Adder for 16 bit Vedic Multiplier

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Abstract

In this paper the high speed and low power 16×16 Vedic Multiplier fundamental block is designed by using low power andhigh speed modified carry select adder. Modified Carry Select Adder employs a newly incremented circuit in the the Carry Select Adder (CSA) which is known to be the fastest adder among the conventional adder structures. multiplication namely Vedic multiplication has been introduced which is quite different from normal multiplication by shift and addition operations. Normally a multiplier is a key block major power dissipation source. This paper presents a new design methodology and less power efficient Vedic Multiplier based up on ancient Vedic Mathematic techniques. This paper presents a technique for N×N multiplication is implemented and gives very less delay for calculating area efficient Vedic multiplier based on the crosswise and vertical algorithm. Comparisons with existing conventional fast adder architectures have been made to prove its efficiency. The performance analysis shows that the proposed architecture achieves three fold advantages in terms of delay-area-power. The synthesis results of the Vedic multiplier has compared with the booth, array multiplier by different technologies.

Keywords: CSA, Multiplier, Vedic multiplier, LP-gate, high delay block.

I. INTRODUCTION

Multiplication is one of the fundamental block in almost all the arithmetic logic units. This Vedic multiplication is mainly used in the fields of the Digital Signal Processing (DSP) and also in so many applications like Fast Fourier Transform, convolution, applications[2,3,9]. In most of the DSP algorithms multiplier is one of the key component and hence a high speed and area efficient multiplier is needed and multiplication time is also one of the predominant factor for DSP algorithms. The ancient mathematical techniques like Vedic mathematics used to reduce the computational time such that it can increases speed and also requires less hardware. There are sixteen sutras and sixteen sutras (sub formulae) constructed by swahiji. Vedic is a word obtained from the word "Veda" and its meaning is "store house of all knowledge". Vedic mathematics mainly consists of the 16 sutras which it can be related to the different branches of mathematics like algebra, arithmetic geometry.

II. ANCIENT VEDIC MATHEMATICAL ALGORITHMS

The Vedic mathematics mainly reduces the complex typical calculations in to simpler by applying sutras as stated above. These Vedic mathematic techniques are very efficient and take very less hardware to implement. These sutras are mainly used for multiplication of two decimal numbers and we extend these sutras for binary multiplications. Some of the techniques are discussed below.

A. Urdhva -Tiryagbhyam Sutra (Vertically and Crosswise):

Booth multipliers are generally used for multiplication purposes. Booth Encoder, Wallace Tree, Binary Adders and Partial Product Generator are the main components used for Booth multiplier architecture. Booth multiplier is mainly used for 2 applications are to increase the speed by reduction of the partial products and also by the way that the partial products to be added. In this section we propose a Vedic multiplication technique called "Urdhva-Tiryakbhyam - Vertically and crosswise." Which can be used not only for decimal multiplication but also used for binary multiplication? This technique mainly consists of generation of partial products parallel and then we have to perform the addition operation simultaneously[3]. This algorithm can be used for 2x2, 4x4, 8x8....N×N bit multiplications. Since the sums and their partial products are calculated in parallel the Vedic multiplier does not depends upon the processor clock frequency. Hence there is no need of increasing the clock frequeffcy and if the clock frequency increases it will automatically leads to the increase in the power dissipation. Hence by using this Vedic multiplier technique we can reduces the power dissipation. The main advantage of this Vedic multiplier is that it can reduces delay as well as area when compared with the other multipliers.

B. Example for Decimal Multiplication Using Vedic Mathematics:

To illustrate this technique, let us consider two decimal numbers 252 and 846 and the multiplication of two decimal numbers 252×846 is explained by using the line diagram shown in below figure1. First multiply the both numbers present on the two sides of the line and then first digit is stored as the

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***Index Terms*—Internet of Things (IoT), embedded device security, Embedded Network management, security lavel implementation, abstraction security with embedded devices & Low end embedded device response.**

I. Literature Survey

Wireless and mobile communication have come into existence long back, but now-a-days there usage is increasing rapidly at high pace. As of now, some of the trending technologies such as WIMAX, 4G Networks, ZigBee and Wireless Mesh Networks are ruling the present day computing. According to Mark Weiser famous article (1991) "Computer of the 21st century" it can be elaborated as "the most exceptional technologies are those that disappear; they weave themselves into the fabric of everyday life until they are indistinguishable from it," has become a reality now. Dix et al. describes present computing as: "Any computing activity that permits human interaction away from a single workstation". From then onwards, there have been a lot of advancements in mobile and wireless technologies towards present and continues computing environment, subsequently these new technologies have been spreading through our lives [4]. Day-to-day embedded computing is widely increasing from cars to Smartphone's and refrigerators to multi media player but security for this mode of communication had been a major concern. Security for these kind of systems are having long-term difficult problems the method of resolving it had been a open challenge rather than desktop and enterprise computing. Security as per today is not a new concept but due to more and more embedded systems are connected to existing internet the means of protecting it has become difficult. Embedded systems design is complicated that includes multiple independent processor cores and secondary bus masters. In accordance with functional components there is parallel system such as boundary scan as well as Built-in-self-test (BIST). Many giant research companies have taken security as major issue and are developing solution for general purpose computing and communication systems [1], [3].

A. Security

However, security is often misconstrued by embedded system designers as the addition of features, security protocols, to the system. In reality, it is a new parameter that designers should keep in mind throughout the design process and also the metrics like cost, performance, and power. The challenges which are unique in embedded systems design require new approaches to security covering all aspects of embedded system design from architecture to implementation. The diverse security requirements are especially essential in embedded systems where increased connectivity, portability, and pervasive design objectives are need to be considered. In fact, pervasive networks have led to an increase in use of embedded systems, like cell phones, PDAs, RFIDs etc., in increasingly diverse applications. Many of these embedded system applications handle sensitive data (e.g., credit card information on a mobile phone/PDA) or perform critical functions (e.g., medical devices or automotive electronics), and the use of security protocols is crucial to maintain confidentiality, integrity and authentication of these applications. Evolution of embedded systems in devices which are connected through Internet, wireless communication or other interfaces as well as the trend towards always growing numbers of devices (IoT) requires a reappraisal of embedded systems engineering processes. It is not possible to meet the minimum level of security required by adding security measures late in the development process. Security engineering as mentioned above needs to be a part of the system development in every stage of the process.

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Smart Embedded System to Building Strong Physical Embedded Barrier for Security Related Issues of IoT

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***Abstract*—The IoT is very familiar technology. It has created a huge revolution in Internet era. The common people are also getting the benefits of IoT. We can't imagine our world without internet. IoT created a huge income in e-commerce and enterprise which is a part of the internet. But, security is the major issue of IoT. This paper deals with security related issues. In general the IoT is having its own security to protect from burglars. The embedded devices which are connected over internet are also facing the security threats because of limited resources to these devices. These devices are incurable when security issues are aroused. Some sophisticated devices are having secure algorithms to prevent certain level of issues. But in low end embedded devices no such prevention algorithms are build. Now this paper will assist us to control the authorized activities and take them into custody. Here low end embedded devices plays a vital role in protection. These devices respond with high speeds and initiate alerts to nodal centers (hubs), Security of the device can be achieved by operating them at a speed of the processor. But, no I/O device is capable to match the speed of the processor; other way is a high efficient algorithm and smart embedded devices that can help to build a strong Embedded Physical barrier for Security of IoT.**

***Index Terms*—Internet of Things (IoT), embedded device security, Embedded Network management, security lavel implementation, abstraction security with embedded devices & Low end embedded device response.**

I. Literature Survey

Wireless and mobile communication have come into existence long back, but now-a-days there usage is increasing rapidly at high pace. As of now, some of the trending technologies such as WIMAX, 4G Networks, ZigBee and Wireless Mesh Networks are ruling the present day computing. According to Mark Weiser famous article (1991) "Computer of the 21st century" it can be elaborated as "the most exceptional technologies are those that disappear; they weave themselves into the fabric of everyday life until they are indistinguishable from it," has become a reality now. Dix et al. describes present computing as: "Any computing activity that permits human interaction away from a single workstation". From then onwards, there have been a lot of advancements in mobile and wireless technologies towards present and continues computing environment, subsequently these new technologies have been spreading through our lives [4]. Day-to-day embedded computing is widely increasing from cars to Smartphone's and refrigerators to multi media player but security for this mode of communication had been a major concern. Security for these kind of systems are having long-term difficult problems the method of resolving it had been a open challenge rather than desktop and enterprise computing. Security as per today is not a new concept but due to more and more embedded systems are connected to existing internet the means of protecting it has become difficult. Embedded systems design is complicated that includes multiple independent processor cores and secondary bus masters. In accordance with functional components there is parallel system such as boundary scan as well as Built-in-self-test (BIST). Many giant research companies have taken security as major issue and are developing solution for general purpose computing and communication systems [1], [3].

A. Security

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Intrusion Defence Mechanisms for Mems Integrated Diversified IOT Networks

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Abstract—— The Internet of Things (IoT) is one of the largest technological evolutions of computing; by 2022 it is estimated that a trillion IP addresses (objects) will be connected to the Internet. The obscurity and low accessibility of many of these devices in this vast heterogeneous network will make it difficult to holistically monitor information flow. Nonetheless, to safeguard networks, unauthorized intruders must be detected within the constraints of each type of device or sub-network before any system information can be disseminated. Since the Internet of things (IoT) is still in its infancy and has attracted much interest in many industrial sectors including medical fields, logistics tracking, smart cities and automobiles. However, as a paradigm, it is susceptible to a range of significant intrusion threats. This research contributes the soft computing-based threat analysis strategies for the IoT and also devises heuristic and meta-heuristic models to combat these threats.

Keywords— Denial of Service, Internet of Things, Interaction Ability Values, Computational Intelligence.

I. INTRODUCTION:

The internet of things (IoT) is a network of distributed (sensor) nodes, (cloud) servers, and software. This paradigm permits measurands to be sensed and processed at in real-time creating a direct interaction platform between cyber-physical systems. Such an approach leads to improved efficiency in the generation and usage of data leading to economic benefits [1]. Research conducted by Cisco reports there are currently 10 billion devices connected, compared to the world population of over 7 billion and it is believed it will increase by 4% by the year 2020 [2].

Threats to the IoT paradigm are on the rise; however, patterns within recorded data can be analysed to help predict threats [3]. Intruder types are categorized into two:

- External Intruders – these are people who fall outside the network and hence do not have permissions on the network. They operate by sending malware, or by using exploits to gain access to systems [4].
- Internal Intruders – these people have rights and privileges to access the network but misuse them malevolently. These types of attack include changing important data content or theft of confidential data. All these threats can be done physically by hacking into the computer system or by accessing a network remotely without permission [4].

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IoT threat can be classified into four types [5]:

- Denial of Service (DoS) – This threat denies or prevents user's resource on a network by introducing useless or unwanted traffic
- Malware – Attackers use executable code to disrupt devices on the IoT network. They may gather sensitive information or gain unauthorized access to the devices. The attacker can take advantage of flaws in the firmware running on the devices and run their software to disrupt the IoT architecture.
- Data breaches – This is a security incident where sensitive, protected or confidential data is retrieved from the network. Attackers can spoof ARP packets to listen on the communication between peers on the network.
- Weakening Perimeters – IoT network devices are currently not designed considering the pervasive security. Network security mechanisms are not often present in the devices making the network a vulnerable one for threats [5][6].

While earlier IDS proposals focused on the specific components, within the last five years IoT research has matured enough to realize the need for unilateral intrusion detection support across the different technologies. This approach will continue to evolve over time and will also need to take into consideration the maker movement and the DIYs, in a way that can harness both the potential for innovation and the threat this segment may pose by driving the development of things without regard to any industry standards for IoT expansion, which will be essential for security of the network.

II. REVIEW OF LITERATURE

The ability to interact with protocol characteristics at various layers in the network is not the same thing as the traditional host or network IDS placement categories. The Interaction Ability is an indicator of the ability to perform real time analysis and generate a timely response at each layer as needed. At the higher layers an IDS is more energy efficient and responsive because there are less packets to examine. In a node, not all of the received packets are destined to the application layer. For the same reason, the IDS detection ability is more accurate at the lower layers. All of the

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MEMS, RFIDS AND SENSORS: THE KEY ENABLERS OF INTERNET OF THINGS

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Abstract

The Internet of Things includes the establishment of a network between resource-limited equipment such as sensors, MEMs, and RFIDs, however these networks often face challenges of security breach, less reliable connectivity. Some of the researchers suggested the implementation of malware defending strategies like data encryption, but the possibility of wireless intrusion from inside the 6LoWPAN continues to exist. As these within-network intrusions are highly likely to cause damage, incorporating effective malware identification strategies is mandatory. IoT technology continues to gain wide attention from both business and residential consumers globally. The flow of numerous devices with connectivity requirements and growth in internet access worldwide is encouraging companies and researchers to focus on developing new technologies. Specifically, most of the current studies are working on handling intrusion issues while boosting the speed and performance of proposed technologies. The current safety scenario depicts that no malware identification methods adhering to the needs of the IPv6-connected Internet of Things have been in-built. This is due to the fact that current approaches of malware identification in the context are designed by tailoring the WSN and traditional internet approaches. The current research work analyses the available models, implementation approaches and assessment of new defensive strategies proposed for IoT environment. The study basically explores the nomenclature of the existing framework, needs, potential intrusion and counter-defensive possibilities. Further, the current studies associated with safety and malware identification in IoT is provided. The research identified that the current approaches possess large limitations in identifying attack nodes associated with specific features like sink-hole or selected packet forwarding intrusions. Further, the research suggests that a huge scope and requirement for handling malware identification and designing defensive strategies in IoT environment. Humans interact with the environment through their senses Sensors can enrich human interaction with the surroundings Sensors create a more interactive and immersive world.

Keywords: IoT, WSN, defensive strategies, Sink-hole attacks, malware identification, IPv6 Protocols, attack nodes, and selective forwarding.

OVERVIEW

The IoT is a continuously developing network that consists of numerous sensors, MEMS, and RFID objects. These sensors, MEMS, and RFID objects include a range of computing or cellular devices and also physical devices such as watches, wearable sensors, MEMS, and RFID objects and many more smart devices, as referred in [1], [2]. In addition, IoT is often referred as an intrinsic relationship of nodes and actuators, which comprise a specific architecture to ensure reliable and effective information distribution. It is significant to note that, the IoT operates with any kind of existing contemporary approaches and improves it to achieve the maximum range [3], [4]. Thus, it is clear that, the IoT not only applicable to a particular approach. Moreover, when every

VOICE CONTROLLED ROBOTIC ARM AND HOME AUTOMATION USING ZIGBEE

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Abstract— ***we present a system whereby the human voice may specify continuous control signals to manipulate a real 3D robotic arm and to control all lights and electrical appliances in a home or office using voice command. The automation centers on recognition of voice commands and uses low-power ZigBee wireless communication modules along with microcontroller. Our goal is to move towards making accessible the manipulation of everyday objects to individuals with motor impairments and to deal with automation. It is indeed possible for a user to learn to effectively manipulate real-world objects with a robotic arm using only verbal voice as a control mechanism. Our results provide strong evidence that the further development of verbal voice- controlled robotics and to perform automation will be successful.***

Index Terms— ***Automation, Microcontroller, Voice Recognition, ZigBee, Power Supply, motor impairment, Robotics.***

I. INTRODUCTION

Prime objective of our project is to develop a voice recognition system that can be used as "command and control" for any machine. For that, we have chosen robotic arm. Since it has an extensive set of commands, which can be used to train our voice recognition system. Voice command and control has many applications from military to air force and from telephony to people with disabilities.

Individuals with motor impairments such as those with paraplegia, spinal cord injuries, war-time injuries, or amputations rely on others to assist them in their daily activities. Advances in assistive technologies have begun to provide an increase in independence for these individuals, but there is great potential for further technological developments to significantly improve their abilities, independence, and overall quality of life. One of the greatest challenges faced in assistive technology, however, is that control options are extremely limited when the target users have little or no use of their limbs. For example, a mouse is useless to some-one without arms. Spoken language and automatic speech recognition (ASR) systems are often considered the natural solution to such problems. Unfortunately, natural speech is limited to discrete commands, falling short especially on steering tasks which require smooth continuous control.

In this work, we take a step towards vocal controlled robotics by considering a real 5 degrees-of-freedom (DOF) three-dimensional robotic arm and performing home automation.

The Wireless Home Automation System is an integrated system to facilitate elderly and disabled people with an easy-to-use home automation system that can be fully operated based on speech commands. The system is portable and constructed in a way that is easy to install, configure, run, and maintain.

A typical wireless home automation system allows one to control house hold appliances from a centralized control unit which is wireless. These appliances usually have to be specially designed to be compatible with each other and with the control unit for most commercially available home automation systems. The project demonstrates a system that can be integrated as a single portable unit and allows one to wirelessly control lights, fans, air conditioners, television sets, security cameras, electronic doors, computer systems, audio/visual equipment's etc. and turn on or off any appliance that is plugged into a wall outlet, get the status of different sensors and take decision accordingly. The overall system is controlled from a microphone which is connected with HM 2007 speech recognition chip. This chip sends the voice commands in binary sequence to microcontroller. The base station unit takes decision and send the commands to remote station by ZigBee transceiver. The remote system receives the commands through ZigBee transceiver and performs the request function. The sensors unit is capable of detecting when the user enters or leaves the room by measuring the change in signals strength between the access Point and can accordingly turn on or off appliances such as lights and fans and in the meantime send its status back to base station.

II. DESIGN METHODOLOGY

This section will discuss the methodology involved in the design of the Voice Controlled Robotic Arm and Home Automation System using ZigBee. The project is divided into two parts to make the design process modular.

A. ROBOTIC ARM CONTROL USING VOICE

Having demonstrated the feasibility of the 2D simulated

Energy-Aware Architecture of Reactive Routing in WSNs Based on the Existing Intermediate Node State: An Extension to EBRS Method

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Abstract— Sensor networks consist of spatially spreading independent sensor nodes that are fond of sensing and maintaining physical and ecological states for the sensors. With these sensors, the batteries are fitted with a small amount of power and serve as a power source. Energy performance is an important obstacle for WSN; the location of the sink node in an appropriate position in the WSN is, therefore, a very important design problem and affects the WSN's efficiency. Thus, energy-efficient routing strategies are required for WSN's corporate operations to allow the network's communication and data transmission accessible through minimal energy consumption. An important mechanism for deploying the sink node to an appropriate location is built in the paper. One of the main significant factors for reducing energy consumption and developing network lifetime is a routing protocol. Based on the current energy state of an intermediate node, the proposed work computes the route-finding metric. The deployment is focused upon the residual buffer and energy status of the sensor nodes. The resulting outcome indicates that with the energy efficiency of the network, the predicted process increases the lifespan of the network, furthermore, the proposed work outperforms in contrast with the current one.

Keywords— Energy Consumption, Energy Efficiency, Network Lifetime, Routing Protocol, Throughput, Packet Loss & Wireless Sensor Network.

I. INTRODUCTION

Most of the Wireless Networks consist of independent sensor nodes. In the case of sensor networks (SNs), these nodes are distributed spatially for maintenance of environmental or physical states such as gravity, temperature, humidity, etc [1]. This system is built up of small nodes that can compute, sensing and can communicate wirelessly. It integrates a gateway between the nodes and a user to provide wireless connectivity to both wirelesses distributed nodes and wired environments [2]. Common applications of wireless sensor nodes are Forest fire detection, Health Care monitoring, Earth sensing, data recording, enemy intrusion detection, and geo-fencing. The sensors detect the changes in these events and instantly report to the base station. These are mobile nodes as well as heterogeneous. Nodes need to act as a router to route the traffic towards the source and the sink. To properly transmit or route the packets, the wireless sensor nodes need a power source and hence, they are equipped with batteries with a finite amount of energy and are scalable to large-scale deployment [3, 22].

The WSN schemes are classified into four categories i.e. topology-based routing schemes, Reliable routing schemes, Network structure schemes, Communication model schemes, etc. We further classified these routing schemes as follows [4, 23-28]: Network structure scheme is further classified into hierarchical and Flat scheme and, Communication scheme into Coherent & Non- coherent and negotiation-based and Query-based, Reliable routing scheme into Location-based and mobile-agent based protocols and finally, Topology based routing scheme is divided into QoS and Multipath based schemes.

This proposed work gives a wide-ranging review on energy-aware reactive routing and Secure WSN protocols and proposes a reactive energy-efficient routing algorithm. The projected algorithm reduces the energy utilization and elaborates WSN lifetime by considering the left behind energy status of an intermediary node concerning its available power. The remainder of the paper organized as section 2 provides the related work which presents a survey of several routing protocols, section 3 gives proposed work which provides deployment and energy utilization in WSN, Section 4 provides calculation of the current processing condition of a node using Knapsack algorithm and 5th section give presentation

Low Pass – IIR Filter Design on Posit Numbers Format using Verilog

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Abstract—
Designing of IIR filter is one of the complex tasks and an essential Digital component for the present high precision technology of era on 120 nm Technology of today's no Time to Market world. The augmented usage of filters is highly unstoppable and needless to mention in the ever-changing demand of Digital versatility. With the inclusion of new word format apart from Fixed Point and Floating point which can play an important role in increasing the resolution, accuracy, and Dynamic range for representation has been introduced. This new impact of a word size is Posit Numbers of the UNUM-iii category (1). The architectural Algorithm of such filter including an Adder, Subtraction, Multiplier, and Divisor along with the Logarithmic and Trigonometric function play a vital role in efficient Filter design with efficient algorithm has been implemented in FPGA with proper Data Path design that develops a new and unique categorical study for several many more implementation and prototypes. The abstract also showers light on the Verilog domain for the presentation of the Data path design and Posit number Extracting, Detecting, Shifting, Rounding, and lastly packaging for presentation for various arithmetic operations.

Keywords-IIR Filter, Posit numbers, Modified Booths Radix-4 Algorithm, Wallace Tree, Compressors 8:2, 4:2, Full Adder, Tools: Xilinx 14.7, ISim, Verilog HDL & Microsoft Visio 2013.

I. INTRODUCTION

IIR Filters are the backbone of VLSI & DSP technology of almost all the competitive domains of Electronics. Here we are presenting and emulating the details of an IIR Filter using Posit Arithmetic multi-core word format for Data path as an example of the Filter Architecture. The implementation is based on the IIR Low Pass Direct Form-1 Filter with transfer function as shown in equation 1.

$$\frac{Y[z]}{X[z]} = \frac{1-2\cos\omega\, z^{-1}+z^{-2}}{1-2\alpha\cos\omega\, z^{-1}+\alpha^2 z^{-2}} \quad \text{..... (1)}$$

The Direct Form-1 IIR Filter possesses the following properties [1]:
1) The filter is also known as 2 zeros and 2 Poles filters because of the second-order polynomial present.
2) By using One Summation node, the Wrapping condition is avoided at the output. (This is more benefits of using Posit Format since there is no issues and intricacies related for Wrapping) [2] [3].
3) The order of the filter is defined by the number of delays in each section. [1]
4) The Transfer function is very sensitive to the coefficients, hence any truncation or rounding (i.e. Quantization) results in much frequency change hence the behavioral [2] [4]. In turn, this supports the Posit Format representation since the fractional bits are more precise in Posit numbers as compared to the Floating-point or Fixed point presentation. The implantation is carried out with full use of the vertex-3 Xilinx DSP board. The first stage of the project is implemented and emulated for Posit numbers for N=32(word size) bits with ES=2 (exponent size) which is extracted and made available for described Arithmetic processes required in the function shown. The next stage is the modeling of the IIR filter with the properly designated coefficients required for a Low Pass, the output, and the result has been mentioned in detail. The function appears to be simple second-order IIR filter which can be and easily calculable and implemented, along with the damping

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ANALYSIS AND EXECUTION OF ROAD WORKS

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Abstract: Road Transport is vital to India's economy. It enables the country's transportation sector contribute 4.7 percent of India's gross domestic product, in comparison to railways that contributed 1 percent, in 2009-2010, despite railways handling of passenger and pure cargo. Road transport has gained in importance over the years despite significant barriers and inefficiencies in inter-state freight and passenger movement compared to railways and air. The government of India considers road network as critical to the country's development, social integration and security needs of the country. India's road network carries over 65 percent of its freight and about 85 percent of passenger traffic. Indian road network is administered by various government authorities, given India's federal form of government. National highways connect capitals, important places, ports and places of strategic importance of various states. Though national highways account for only 2% of the total road length, they carry nearly 1/3 of the total traffic. Flexible pavement is composed of a bituminous material surface course and underlying base and sub base courses. The bituminous material is more often asphalt whose viscous nature allows significant plastic deformation. Most asphalt surfaces are built on a gravel base, although some 'full depth' asphalt surfaces are built directly on the sub grade. Depending on the temperature at which it is applied, asphalt is categorized as hot mix asphalt (HMA), warm mix asphalt, or cold mix asphalt. Flexible Pavement is so named as the pavement surface reflects the total deflection of all subsequent layers due to the traffic load acting upon it. The flexible pavement design is based on the load distributing characteristics of a layered system. It transmits load to the sub grade through a combination of layers. Flexible pavement distributes load over a relatively smaller area of the sub grade beneath. The initial installation cost of a flexible pavement is quite low which is why this type of pavement is more commonly seen universally. However, the flexible pavement requires maintenance and routine repairs every few years. Highway surveys involve the location of alignments and computation of volumes materials that must be added, removed, or moved. It initially requires a topographic survey of the site. For large projects, photographic method will be used to develop the base map. The base map is used by surveyors and other professional to create a base plan for the project. After the alignment has been established, the quantities of earth that must be added or removed are computed. The goal of most projects is to minimize the hauling distances of the earth. This is done using mass diagrams. Eventually surveyor's layout the elevation and slope of the various sub-grades, base, and top coat materials. The end result is a smooth alignment with smooth transitions from straight to curved sections allowing for safe public transportation.

1. INTRODUCTION AND LITERATURE REVIEW

National Highway 5 (NH-5) is a major National Highway in India that runs along India's east coast through the states of Orissa, Andhra Pradesh and Tamil Nadu. The northern terminal is at Jharpokharia in Orissa and the southern terminal is at Chennai in Tamil Nadu. NH 5 is a part of the golden quadrilateral project undertaken by National Highways Development Project. Under the new national highway numbers NH 5 is renamed as NH 16. NH 5 runs for a distance of 1533 km. In Tamil Nadu NH 5 starts from Chennai and shortly enters Andhra Pradesh from Gummidipundi. In Andhra Pradesh, it passes through most of the coastal towns in nine coastal districts including Nellore, Ongole, Chilakaluripet, Guntur, Vijaywada,Eluru, Tanuku, Rajahmundry, Tuni , Visakhapatnam, Srikakulam, Tekkali and Palasakasibugga. In Orissa, it passes through Baipada, Balasore, Bhadrak, cuttack, Bhubaneswar and Berhampur. Our project is on Six Laning of Chilakaluripet - Nellore section of NH 5 from km 1182.802 to km 1366.547 (approx. length-

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TIME IMPACT ANALYSIS OF CONSTRUCTION PROJECTS USING PRIMAVERA

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Abstract—Delay is one of the most common problems in the construction industry. At the time of bidding contractors plan tasks and assign resources according to the site visits, the information given in the contract and specifications related with the project. However, as the project progresses some conditions of the work may change. These changes may affect originally planned means and methods. Finally, the affected activities cause the project total cost and duration to increase. In construction projects, if not managed properly in accordance with the contract, changes are likely to result in claims between the project participants. In this study, a delay analysis methodology which is based on time impact analysis is proposed. The aim of this methodology is to quantify impacts of work changes on the schedule and identify the responsible parties for these changes. The proposed methodology comprises of 3 steps: identification and quantification of delays, allocation of these delays to responsible parties and to calculate overall impact of changes on time. The major benefits of this methodology are; a) its ability to handle and quantify changes in a step by step procedure b) it helps decision makers to give reliable decisions by monitoring the impact of changes during the project"s life cycle. Construction professionals may use it to apportion impact of changes in a systematic and reliable way. An application of this methodology on a project demonstrates the superiority of the process in explaining the dynamic nature of changes and in apportioning the impacts between different parties in a systematic way

1. INTRODUCTION

The construction industry mainly caters to the need of providing shelter, harnessing energy and creates public access. The basic human needs have not changed over time even though the process and environment in which designer or constructor operate have become increasingly more complicated. Rapidly escalating technology has made challenging construction possible which were impossible to imagine in the previous generations. India is the one of the developing countries which is concentrating in the development of the new buildings and at the same time maintaining all existing building. The government is spending a lot of money for the new infrastructure works especially schools, hospitals, universities and low cost housing projects. With this investment, many contracting companies are being set up. At the same time multinational companies are looking forward in exploring the construction industry in India. By looking for the expenditure of the construction industry, the project management profession is being very valuable for the construction companies in order to make sure the projects can be completed successfully. The project management knowledge becomes the critical part in the project because it contains the knowledge in controlling the cost, scheduling, and resources. In this Project Management field, project manager plays very important role in the construction project. Project management professionals are responsible for ensuring the project completes successfully, thus it is important for them to have experience and knowledge in Project Management techniques.

Case Study:

The project"s name is ORCHID VILLA, situated in Abids, Hyderabad.

M/s EDGE CONSULTING ENGINEERING SOLUTIONS, India is the project management consultants and M/s SK Constructions and Co. is the contractor for the building project.

Project Details:

Name of the project : ORCHID VILLA Total Site area : 500 sq meters

Built up area : 310 sq meters

Number of Floors : Ground + First Total Project Duration : 12 Months Civil works Duration : 8 Months Cost of the Project : 26 Lakhs INR

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ESTIMATING THE RUNNING COSTS OF COMMERCIAL BUILDINGS: ARTIFICIAL NEURAL NETWORK MODELING

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Abstract Running costs of a building is a substantial share of its total life-cycle cost (LCC) and it ranges between 70-80% in commercial buildings. Despite its significant contribution to LCC, investors and construction industry practitioners tend to mostly rely on construction cost exclusively. Though the early stage estimation of running costs is limited due to the unavailability of historical cost data, several efforts have been taken to estimate the running costs of buildings using different cost estimation techniques. However, the prediction accuracy of those models is still challenged due to less quality and amount of data employed. This study, therefore, developed an artificial neural network (ANN) model for running costs estimation of commercial buildings with the use of building design variables. The study was quantitively approached and running costs data together with 13 building design variables were collected from 35 commercial buildings. The ANN model developed resulted in a 96.6% perfect correlation between the running cost and building design variables. The testing and validation of the model developed indicate that there is greater prediction accuracy. These findings will enable industry practitioners to make informed cost decisions on implications of running costs in commercial buildings at its early stages, eliminating excessive costs to be incurred during the operational phase.

Keywords: Cost modeling, Operations cost, Maintenance cost, Building design variables, Decision-making, LCC.

1. INTRODUCTION

Usually, costs incurred during the operational phase of a building responsible for a substantial share of its Life Cycle Cost (LCC). Some buildings have inherently higher running cost than others, such as commercial buildings. For example, the running costs of commercial buildings account for over 69% of the total LCC (Wang *et al.* 2014). Similarly, Wong *et al.* (2010) revealed that the running cost of an office building varies between 72 to 81% of its total LCC. Despite its contribution to the LCC structure, often running cost is given less focus in investment decision making and investors tend to mostly rely on initial cost alone.

A recent study on the review of existing models for LCC estimation revealed that there is no simple model for estimating the running cost of buildings to date (Krstić and Marenjak 2017). The application of available methods and models for the running cost estimation of buildings are also limited to the later stage of building life cycle as these models require an extensive set of operational cost data (Krstić and Marenjak 2017). For example, Al-Hajj and Horner (1998) have presented a running costs model for institutional buildings, with eleven cost elements and to an accuracy of 1.13%. Similarly, Kirkham *et al.* (2002) and El-Haram *et al.* (2002) have developed

WLCC models for hospital buildings where cost components such as facilities management costs, energy costs, maintenance costs, residual costs, and discount rate were determinants of WLCC. Early-stage supportive running cost estimation models are therefore essential as it provides implications of costs to be incurred during the operating phase of buildings at early design stages of building constructions.

Estimation of cost of a product, system, or service based on its determinants is a well-known and approved method for cost estimation over the years. For example, Kirkham *et al.* (1999) have developed an energy cost model for sports centres based on building design variables such as the number of users and floor area. However, Krstić and Marenjak (2017) stressed that these models are not based on adequate historical cost records and not based on the available cost structure, rather than standard cost structure. Authors further indicate that the models developed so far ignore some important factors

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"MIX DESIGN OF CONCRETE BY BIS METHOD"

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ABSTRACT The quality of concrete in a structure is determined not only by the proper selection of its constituents and their proportions, but also by appropriate techniques in the production, transportation, placing, compacting, finishing, and curing of the concrete of the actual structure, often at a job site..Although these processes have an impact on the actual quality of concrete
In order to obtain a strong, durable and economical concrete mix, it is necessary to understand the characteristics and behavior of the ingredients

1. INTRODUCTION

Concrete is the most widely used man-made construction material. It is obtained by mixing cement, water and aggregates (and sometimes admixtures) in required proportions. The mixture when placed in forms and allowed to cure becomes hard like stone. The hardening is caused by chemical action between water and the cement and it continues for a long time, and consequently the concrete grows stronger with age. The hardened concrete may also be considered as an artificial stone in which the voids of larger particles (coarse aggregate) are filled by the smaller particles (fine aggregate) and the voids of fine aggregates are filled with cement. In a concrete mix the cement and water form a paste called cement water paste which in addition to filling the voids of fine aggregate acts as binder on hardening, thereby cementing the particles of the aggregates together in a compact mass.
The strength, durability and other characteristics of concrete depend upon the properties of its ingredients, on the proportions of mix, the method of compaction and other controls during placing, compaction and curing. The popularity of the concrete is due to the fact that from the common ingredients, it is possible to tailor the properties of concrete to meet the demands of any particular situation. The advances in concrete technology have paved the way to make the best use of locally available materials by judicious mix proportioning and proper workmanship, so as to produce concrete satisfying performance requirements.

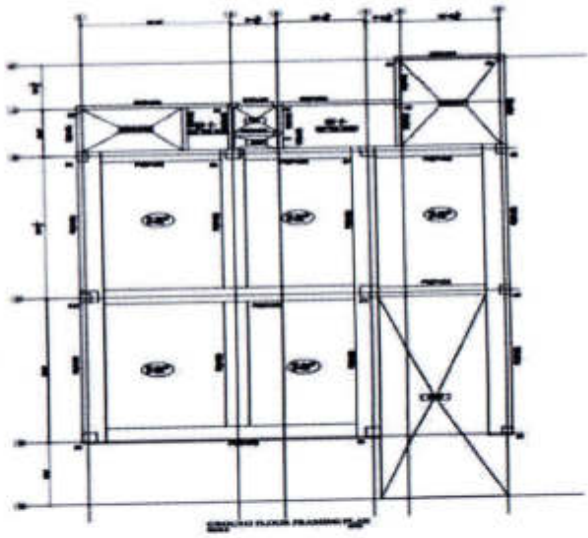
2. CONSTITUENTS OF CONCRETE

The constituents of modern concrete have increased from the basic four (Portland cement, water, stone, and sand) to include both chemical and mineral admixtures. These admixtures have been in use for decades, first in special circumstances, but have now been incorporated in more and more general applications for their technical, and at times economic benefits in either or both fresh and hardened properties of concrete.
The main constituents of concrete are:

(i) Cement
(ii) Aggregates
(iii) Water
(iv) Admixtures

CEMENT

Cement is a well-known building material and has occupied an indispensable place in construction works. There is a variety of cements available in the market and each type is used under certain conditions due to its special properties. The cement commonly used is portland cement, and the fine and coarse aggregates used are those that are usually obtainable, from nearby sand, gravel or rock deposits. In order to obtain a strong, durable and economical concrete mix, it is necessary to understand the characteristics and behaviour of the ingredients



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STRUCTURAL ANALYSIS OF MULTISTORY BUILDING OF DIFFERENTSHEAR WALLS LOCATION AND HEIGHTS

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Abstract Abstract: Shear walls are structural systems which provide stability to structures from lateral loads like wind, seismic loads. These structural systems are constructed by reinforced concrete, plywood/timber unreinforced masonry, reinforced masonry at which these systems are sub divided into coupled shear walls, shear wall frames, shear panels and staggered walls. The present paper work was made in the interest of studying and analysis of various research works involved in enhancement of shear walls and their behaviour towards lateral loads. As shear walls resists major portions of lateral loads in the lower portion of the buildings and the frame supports the lateral loads in the upper portions of building which is suited for soft storey high rise building, building which are similar in nature constructed in India, As in India base floors are used for parking and garages or officers and upper floors are used for residential purposes.
Keywords: Multistory building (G + Structure), Shear wall, STAAD. Pro etc.

1. INTRODUCTION

In structural engineering, a shear wall is a structural system composed of braced panels (also known as shear panels) to counter the effects of lateral load acting on a structure. Wind and seismic loads are the most common loads that shear walls are designed to carry.Shear walls resist in-plane loads that are applied along its height. The applied load is generally transferred to the wall by a diaphragm or collector or drag member. They are built in wood, concrete, and CMU (masonry).

Shear walls must provide the necessary lateral strength to resist horizontal earthquake forces. When shear walls are strong enough, they will transfer these horizontal forces to the next element in the load path below them. These other components in the load path may be other shear walls, floors, foundation walls, slabs or footings.

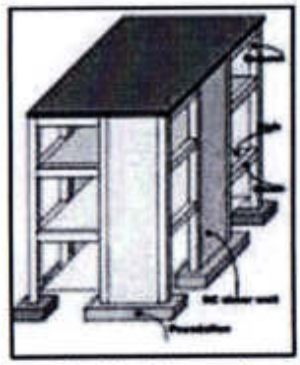

Fig 1.1: Shear wall

Shear walls also provide lateral stiffness to prevent the roof or floor above from excessive side-sway. When shear walls are stiff enough, they will prevent floor and roof framing members from moving off their supports. Also, buildings that are sufficiently stiff will usually suffer less nonstructural damage.

The strength of the shear wall depends on the combined strengths of its three components: lumber, sheathing and fasteners. Later in this section you will learn how each component affects the strength and how strength is lost by improper installations. When all of the components are properly in place, the shear wall can provide its intended strength. For shear wallsheathing, the 1994 Uniform Building Code (UBC) permits the use of gypsum wallboard, cements plaster, fiberboard, wood particleboard, plywood and oriented strand board. Previous editions of the UBC also allowed wood lath and plaster, horizontal and diagonal sheathing for shear walls. All of these sheathing materials provide different strengths. The UBC shows these strengths in pounds per foot of wall length. Fasteners for shear wall construction may bestaples, screws or nails. Denser lumber species provide stronger fastener strengths. Values for shear wall strengths assume a dense lumber species like douglas fir-larch or southern pine. Thicker framing members also increase wood structural panel sheathing strengths.

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Design & Analysis of Multi-Storied Building using Sap 2000

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Abstract—The technique of sensor fusion addresses the issues relating to the optimality of decision making in the multiple-sensor framework. The advances in sensor fusion enable to perform intrusion detection for both rare and new attacks. This project discusses this assertion in detail, and describes the theoretical and experimental work done to show its validity. The attack-detector relationship is initially modeled and validated to understand the detection scenario. The different metrics available for the evaluation of intrusion detection systems are also introduced. The usefulness of the data set used for experimental evaluation has been demonstrated. The issues connected with intrusion detection systems are analyzed and the need for incorporating multiple detectors and their fusion is established in this work. Sensor fusion provides advantages with respect to reliability and completeness, in addition to intuitive and meaningful results. The goal for this work is to investigate how to combine data from diverse intrusion detection systems in order to improve the detection rate and reduce the false-alarm rate. The primary objective of the proposed project work is to develop a theoretical and practical basis for enhancing the performance of intrusion detection systems using advances in sensor fusion with easily available intrusion detection systems. This project introduces the mathematical basis for sensor fusion in order to provide enough support for the acceptability of sensor fusion in performance enhancement of intrusion detection systems.

Keywords: What is sap 2000, Types of load considered, Fundamental natural period, Dynamic analysis, Analysis of load, Structure and support, Beam design, Column design.

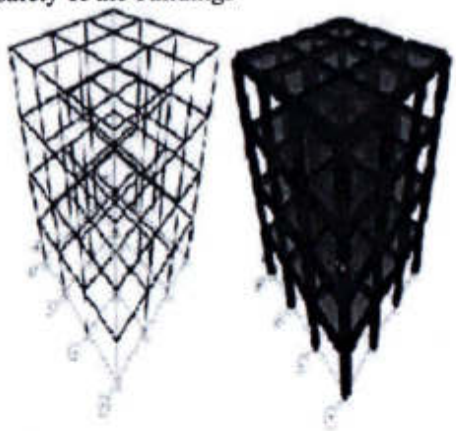
1. INTRODUCTION

The principle objective of this project is to analyze and design a multistoried building [G + 3 (3 dimensional frame)] using SAP 2000. The design involves load calculations manually and analyzing the whole structure by SAP 2000. The design methods used in SAP 2000 analysis are Limit State Design conforming to Indian Standard Code of Practice. SAP 2000 features a state-of-the-art user interface, visualization tools, powerful analysis and design engines with advanced finite element and dynamic analysis capabilities. From model generation, analysis and design to visualization and result verification, SAP 2000 is the professional's choice. Initially we started with the analysis of simple 2 dimensional frames and manually checked the accuracy of the software with our results. The results proved to be very accurate. We analyzed and designed a G + 3 storey building [2-D Frame] initially for all possible load combinations [dead, live, wind and seismic loads].

Our project involves analysis and design of multistoried [G+3] using a very popular designing software SAP 2000. We have chosen SAP 2000 because of its following advantages:

- Easy to use interface.
- Conformation with the Indian Standard Code.
- Versatile nature of solving any type of problem
- Accuracy of the solution.

The design of the building is dependent upon the minimum requirements as prescribed in the Indian Standard Codes. The minimum requirements pertaining to the structural safety of buildings are being covered by way of laying down minimum design loads which have to be assumed for dead loads, imposed loads, and other external loads, the structure would be required to bear. Strict conformity to loading standards recommended in this code, it is hoped, will not only ensure the structural safety of the buildings



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EXPERIMENTAL STUDY AND THE EFFECT OF ALKALI TREATMENT WITH TIME ON JUTE POLYESTER COMPOSITES

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ABSTRACT: The main aim of the work is the treatment that is to be given to enhance the surface properties of the fibers in view of obtaining better interfacial reaction between the matrix and the fiber of the composite, which in turn enhances the mechanical properties of the laminate on the whole. The work also focuses on the effect of alkaline solution treatment on the fibers. Numbers of laminates are prepared with different soaking time to be able to subject them to various test methods.

Key words: Alkali treatment, Natural fiber, laminate

INTRODUCTION

Currently, many research projects are devoted to the utilization of cellulose-based fibers as reinforcement for plastics. However, these fibers are mainly composed of cellulose, hemi- cellulose, and lignin. In order to expand the use of cellulose-based fibers for composites, it is useful to have the information on fiber characteristics and factors which affect performance of the fibers

P. J. Roe, M. P. Ansell in (1985),

[1] studied the behavior of the jute fiber. Raw jute fiber has been incorporated in a polyester resin matrix to form uni- axially reinforced composites containing up to 60 vol % fiber. The tensile strength and Young's modulus, work of fracture determined by Charpy impact and inter-laminar shear strength have been measured as a function of fiber volume fraction. Derived fiber strength and Young's modulus were calculated. Polyester resin forms an intimate bond with jute fibers up to a volume fraction of 0.6, above which the quantity of resin is insufficient to wet fibers completely. He compared properties of jute and glass fibers, and on a weight and cost basis jute fibers are seen in many respects to be superior to glass fibers as a composite reinforcement. Jute fiber forms an intimate bond with polyester resin, and can fully or partially replace glass fiber without entailing the introduction of new techniques of composite fabrication.

A.K. Mohanty, Mubarak A. Khan,

G. Hinrichsen in (1998),[2] investigated on surface modifications of two varieties of jute fabrics, i.e. hessian cloth (HC) and carpet backing cloth (CBC), involving de waxing, alkali treatment, cyanoethylation and grafting, were made with a view to their use as reinforcing agents in composites based on a biodegradable polymeric matrix,Dipa Ray, B.K.Sarkar, A.K.Rana and N.R .Bose in (2001),[3] investigated the effect of alkali treatment of 5% alkali (Noah) solution for 0, 2, 4, 6 and 8 h at 30°C.

Joung-Man Park, Son Tran Quang, Byung-Sun Hwang, K. Lawrence De Vries in (2005),[4] investigated on interfacial evaluation of the untreated and treated Jute and Hemp fibers reinforced different matrix polypropylene-maleic anhydride polypropylene copolymer (PP-MAPP) composites by micromechanical technique combined with acoustic emission (AE) and dynamic contact angle measurement.

Thi-Thu-Loan Doan, Hanna Brodowsky Edith Mader in (2006),[5] studied the thermal, dynamic mechanical and aging behavior are critical issues for the application of jute/polypropylene composites.

H.M.M.A. Rushed, M. A. Islam and F. B. Rizvi in (2006),[6] experimented on natural fibers such as flax, hemp, jute, kenaf. In the research work, jute fiber reinforced polypropylene matrix composites were developed by hot compression molding technique with varying process parameters, such as fiber condition (untreated and alkali treated), fiber sizes (1, 2 and 4 mm) and percentages (5%, 10% and 15% by weight). An attempt was made by U. S. Ishiakul, X. Y. Yang, Y.W. Leong, H. Hamada, T. Semba, and K. Kitagawa in (2007),[7] at increasing both toughness and rigidity by simultaneous toughening and reinforcement.

E. Sinha1,S.K. Rout P.K. Barhai in (2007),[9] all together treated the jute fibers with argon cold plasma for 5,

10 and 15 min. Structural macromolecular parameters of untreated and plasma treated fibers were investigated using small angle X-ray scattering (SAXS), and the crystallinity parameters of the same fibers were determined by using X-ray diffraction (XRD). K. Sabeel Ahmed, S. Vijayaranga in (2008),[10] investigated on the effect of stacking sequence on tensile, flexural and

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FRICTION STIR WELDING OF DISSIMILAR AA2014 AND AA6061 ALUMINIUM ALLOYS

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Abstract: Friction Stir Welding (FSW) is a solid state joining technique which is universally used for joining of aluminium alloys in marine, aerospace, automotive and many other applications of commercial importance. In this present study, the effect of FSW parameters on the weldability of dissimilar aluminium alloys such as AA2014 and AA6061 were investigated. The two plates were aligned perpendicular to the rolling directions and the welding was carried out. The main objective of the experiment is to find out the maximum tensile strength. The experiments were conducted on a milling machine. Three factor three levels Central-Composite matrix in Response Surface Methodology (RSM) is employed to carry out the experimental investigation. The "Design Expert 8.0", software was used for regression and graphical analysis of data collected. ANOVA was used to check the validity of the model. A designed FSW experiments were carried out to get a high strength welding by controlling the rotational, welding speed and tool pin diameter. The tensile tests were carried under tension at room temperature in order to analyze the mechanical response
Keywords;.Response Surface MethodologyMaximum tensile strengthDesign Expert 8.0ANOVA

1: INTRODUCTION

1.1Introduction of the Friction Stir Welding Technique

In Today's modern world there are different welding techniques to join metals. They range from the conventional oxyacetylene torch welding to laser welding. The two types of welding can be divided as fusion welding and pressure welding.

The fusion welding process involves bonding of the metal in the molten stage and may need a filler material if required such as a consumable electrode or a spool of wire. Some processes may also need an inert ambience in order to avoid oxidation of the molten metal. A flux material or an inert gas shield in the weld zone protects weld pool to avoid defects. Examples of fusion welding are metal inert gas welding (MIG), tungsten inert gas welding(TIG) and laser welding. There are many disadvantages in the welding techniques where the metal is heated to its melting temperatures and let is solidify to form the joint. The melting and solidification causes the mechanical properties of the weld in some cases to deteriorate such as low tensile strength, fatigue strength and ductility. The disadvantages also include porosity, oxidation, micro segregation, hot cracking and other microstructural defects in the joint. The process also limits the combination of the metals that can be joined because of the different thermal coefficients of expansion.

The solid state welding is the process where coalescence is produced at temperatures below the melting temperatures of the base metal without any need for the filler material or any inert ambience in many cases. Examples of solid state welding are friction welding, explosion welding, forge welding, hot pressure welding and ultrasonic welding. The three important parameters time, temperature and pressure individually or in combinations produce the join in the base metal. As the metal in solid state welding does not reach its melting temperatures, there are fewer defects caused due to the melting and solidification of the metal. In solid state welding the meals being joined retain their original properties as melting does not occur in the joint and the heat affected zone (HAZ) is also very small compared to fusion welding techniques where most of the deterioration of the strength and ductility begins. Dissimilar metals can be joined with ease compared to fusion welding.

Friction stir welding (FSW) is an advanced friction welding process. The conventional friction welding is done by moving the parts to be joined relative to each other along a common interface also applying compressive forces across the joint. The frictional heat generated at the interface due to rubbing softens the metal and the soft metal gets extruded due to the compressive forces and the joint forms in the clear material, the relative motion is stopped and compressive forces are increased to form a sound weld before the weld is allowed to cool.

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DESIGNING THE HVAC SYSTEM FOR A SHOPPING MALL

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ABSTRACT;The objective to design Heating, Ventilation & Air conditioning (HVAC) system for a commercial Building, with simultaneously controls its temperature, humidity, cleanliness, proper distribution, noise level, heat load calculation, fresh air, exhaust, duct design, pipe design, equipment selection and layout of accessories such as indoor and outdoor unit of the project. Cooling load will be calculated on E20 form.
Indeed, today the emphasis is no more on understanding air conditioning 'products' but on creating 'solutions' and not just solutions, but 'customized solutions' that suit specific cooling needs of specific business and establishments
Every air-conditioning application has its own special needs and provides its own challenges. Airports, hotels, shopping malls, office complexes and banks need uniform comfort cooling in every corner of their sprawling spaces and activities involving computers, electronics, aircraft products, precision manufacturing, communication networks and operation in hospitals. In fact many areas of programming will come to halt, so air-conditioning is no longer a luxury but an essential part of modern living.
With reference to the building plan and requirement of the case problem air-conditioning load is estimated for seasonal conditioning. The project is carried out on "Designing the HVAC system for a Shopping Mall". To provide human comfort, it is very essential to maintain steady temperature at public places like malls.

1. INTRODUCTION

HVAC (heating, ventilating, and air conditioning; also heating, ventilation, and air conditioning) is the technology of indoor and vehicular environmental comfort. Its goal is to provide thermal comfort and acceptable indoor air quality. HVAC system design is a sub discipline of mechanical engineering, based on the principles of thermodynamics, fluid mechanics, and heat transfer. Refrigeration is sometimes added to the field's abbreviation as HVAC&R or HVACR, or ventilating is dropped as in HACR (such as the designation of HACR-rated circuit breakers). HVAC is important in the design of medium to large industrial and office buildings such as skyscrapers and in marine environments such as aquariums, where safe and healthy building conditions are regulated with respect to temperature and humidity, using fresh air from outdoors.
Ventilating or Ventilation (the V in HVAC) is the process of "changing" or replacing air in any space to provide high indoor air quality which involves temperature control, oxygen replenishment, and removal of moisture, odors, smoke, heat, dust, airborne bacteria, and carbon dioxide. Ventilation removes unpleasant smells and excessive moisture, introduces outside air, keeps interior building air circulating, and prevents stagnation of the interior air.
Ventilation includes both the exchange of air to the outside as well as circulation of air within the building. It is one of the most important factors for maintaining acceptable indoor air quality in buildings. Methods for ventilating a building may be divided into mechanical/forced and natural types.

2. LITERATURE SURVEY

2.1 Types of Air-Conditioning Systems

2.1.1 Commercial Air-Conditioning According To Applications
2.1.2 Industrial Air-Conditioning

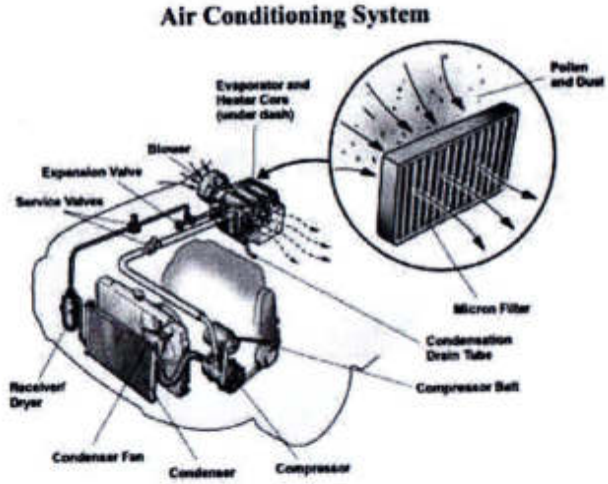

Fig 2.1: Air-Conditioning system

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EXPERIMENTAL DETERMINATION OF OPTIMAL PROCESS PARAMETERS OF FRICTION WELDED JOINTS OF DISSIMILAR MATERIAL BY USING DOE

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ABSTRACT; Friction welding is used in many fields because the procedure is easily automated and it is possible to weld similar and dissimilar materials.It can be used to weld the materials which can not be welded by resistance welding due to electrical and heat conductivity. One of the biggest incentives for choosing friction welding as joining process is that it allows you to combine dissimilar materials. Other conventional welding doesn't allow the joining of different materials, but friction welding does.

Friction welding provides a strong bond without the use of bolts and/or screws or the additional of extra weight from fillers. Friction welding tends to clean the surface between the materials- removing any debris or dirt. This usually eliminates a need to prepare the two joining surfaces prior to the friction welding process.

In this research the material which is selected it cannot be weld by resistance welding and arc welding due to high conductivity and it cannot be welded by friction welding at normal working parameters due to low co-efficient of friction, but by controlling the parameters it is possible to weld with equally good tensile strength and other mechanical properties. Hence this research mainly concentrates on, The suitable friction welding parameters likeRPM, friction pressure,frictional time,and quenching medium for the material by friction welding to attain the required hardness and tensile strength.Further, statistical analysis software like minitab is used to predict the optimal process parameters for basis of taguchi analysis.

1.INTRODUCTION

Friction welding machine (FWM) were utilized in different fields in light way that methodology was effectively robotized & it was conceivable to weld relative & unmistakable materials. It tends to be utilized to weld materials which can't be welded by obstruction welding because electrical & warmth conductivity. A standout amongst other main thrusts for picking pounding welding as joining process was that it stipends combining particular materials. Other ordinary welding doesn't permit joining various materials, yet contact welding does. Contact welding gives a solid bond without utilization hooks or possibly screws or extra additional weight from fillers. Contact welding tends to clean surface between materials-expelling any garbage or soil. This all else fails disposes a need to setup 2 joining surfaces before pounding welding process.

i) sensible rubbing welding parameters for SS 431 & En-8 material by contact welding to accomplish required rigidity & hardness materials & make conceivable substitution SS 431 to a level 3/fourth shaft material, to lessen expense. material investigation has running with properties their parent metals.

2.LITERATURE SURVEY

Shubhavardhan RN [1] researched mechanical & metallurgical properties rubbing welded AA6082 aluminum mix & AISI 304stainless steel.in this paper these exceptional materials were joined by steady drive granulating welding process which consolidates shine produced using crumbling between 2 surfaces & plastic misshapening. Tests were composed with various welding process parameters. outcomes were investigated by systems for flexible test, Vickers little scale hardness test, exhaustion test, Charpy v-score impact test, & SEM-EDX (centrality dispersive X-shaft) examination to pick stages that happened amidst welding.

Ideajoints shifted with broadening pounding weight & contact time keeping upset weight & ponder time steady. joint quality expanded, & after that diminished ensuing to achieving a greatest respect, with developing granulating weight & pulverizing time. A section welds had low quality because aggregate alloying parts at joint interface. Right when thickness response layer stretched out over a major respect, joint was weak & broken at weld interface. joint was sound when there was no unbounded territory & a thin response layer shaped along whole weld interface.

A. Rajasekhar [2] researched about impact welding strategy & post weld warm medicines on microstructure & mechanical properties AISI 431 martensitic hardened steel. welding system was considered in this paper were pulverizing welding & electron shaft welding. Weld

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INVESTIGATION OF OPTIMUM STACKING SEQUENCE IN GLASS FIBER REINFORCED POLYMER STRUCTURES USING CLASSICAL LAMINATE THEORY

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Abstract- The popularity/usage of composites has increased recently in the aerospace, automobile and defense industries due to their lower production costs, light weight, higher fracture toughness, low thermal expansion, corrosion resistance and better control over the thermo- mechanical properties. The demand for improved performance of these structural materials makes it necessary to evaluate these materials under axial loading. Fiber-reinforced composites show strong anisotropic mechanical behavior due to their fiber orientations. These orientations cause a variety of failure mechanisms, which are more complex under axial loading conditions. In these work the stress, strain and deformation value has been evaluated to know the better understand and behavior of laminate of different unidirectional fiber orientation under plane stress conditions using MATLAB and ANSYS software. The graphical representations have been made to understand behavior of GFRP composite material.

Keywords-Matlab, Ansys, GFRP, classical laminate theory.

1. INTRODUCTION

A. Composite Materials

Over 95% of the fibers used in reinforced plastics are glass fibers, as they are inexpensive, easy to manufacture and possess high strength and stiffness with respect to the plastics with which they are reinforced. Their low density, resistance to chemicals, insulation capacity are other bonus characteristics, although the one major disadvantage in glass is that it is prone to break when subjected to high tensile stress for a long time.

Therefore, data on the effects of moisture on retention of the mechanical properties of GFRP during long term environmental exposure are crucial for them to be utilized in outdoor applications. The environmental stress cracking characteristics of GFRP were studied using fracture mechanics samples under constant tensile load and water environment. For GFRP the characteristics of crack length as a function of exposure time. Ductile aramid fibers seemed to project the glass fiber reinforcement from stress cracking due to higher chemical resistance and complex failure mechanisms. In addition to the prediction of load transfer in the joint stress analysis was conducted to investigate the effect of bonded on the peel and shear stress distribution in the adhesive. The main objective of this work is to investigate the effects on flexural strength of GFRP composite materials subjected to hydrothermal aging and its life predication by mathematical modeling. In this work, the effects of environmental ageing on retention of flexural properties of GFRP are studied and qualitative correlation to between results from ageing and accelerated ageing is discussed [1].

2. LITERATURE SURVEY

To understand the physical changes that take place at the bonding interface between the fibres matrix, as it is of prime importance due to its link to the stress transfer, distribution of load and it also governs the damage accumulation & propagation[1]. Work describe the development and mechanical characterization of new polymer composites consisiting of glass fibre reinforcement, epoxy resin and filler materials such as TiO_2 and ZnS. Experimental [2]. The classical lamination theory is very important in analysis of laminate because it will predict the stresses, strains, forces and moments relationships with reasonable accuracy. The composite materials are widely used in military aircraft, civil aircraft, space and automobile applications. ANSYS 11 software is used for analysis of composite laminate. First order shear stress deformation theory is used for the analysis of laminate in finite element technique [3]. The mechanical properties such as tensile, flexural, compression and Impact properties are studied as per ASTM standards. From the Experimental analysis, it was observed 20% ash reinforced polymer composite is having better tensile strength in comparison with other ash percentages [4]. desired properties by reducing the weight as much as possible [6]. The objective of this research was to gain a better understanding of tensile properties of epoxy resin composites reinforced with glass fiber. The effect of

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DIFFERENT MODELS FOR ZNO NANOTUBE BASED PHOTO-ELECTRODES FOR DYE-SENSITIZED SOLAR CELLS: A REVIEW

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Abstract— ZnO photo-electrodes modified by two-steps coating-etching process with chemical wet etchants for dye-sensitized solar cell were investigated. The ZnO films were coated on a fluorine-doped tin oxide glass substrate and etched by mixed acid solution of HC_l: HNO_3: distilled water, washed, and thermally treated for the first step. The second step, films coating process was repeated and etched by base solution of diluted NH_4OH in distilled water. Surface morphologies of unmodified and modified ZnO films look similar DSSCs with modified photoelectrodes showed efficiency enhancement with maximum power conversion efficiency of 2.29%. Surface-grown ZnO nanotubes have to be synthesized by a chemical solution method, hydrothermal method and by surfactant- assisted in-situ chemical etching on a glass plate coated with ZnO seed layer via thermally decomposing zinc acetate at proposed temperature 280°C. The morphological and structural analyses have to be investigated by optical polarizing microscope, Atomic Force Microscopy (AFM), Field-emission scanning electron microscopy (FE-SEM) and X-ray diffraction (XRD) spectral analysis. It is proposed to investigate that the ZnO nanotubes will be synthesized via surfactant-assisted in-situ chemical etching strategy to produce mesoflower-like structures with hexagonal structure everywhere and has to be confirmed through FE-SEM analysis. The ZnO nanotube based photo-anodes produced by the proposed investigations are to be highly expected to contribute towards the improvement in the efficiency of nanocrystalline Dye-Sensitized Solar Cells (DSSCs). This will be more beneficial in future usage of ZnO NTs in different fields and applications. Particularly, this approach opens the ways in research and development for high volume manufacturing of low-cost, flexible optoelectronics devices on disposable paper substrates and can be used in the future miniaturization trends.

Keywords—ZnO, nanotubes, Photoelectrodes, DSSC.

1. INTRODUCTION

Conventional dye-sensitized solar cell (DSSC) composed of three main parts included photoelectrode, counterelectrode and electrolyte. Wide band gap semiconductor is generally coated on transparent conducting oxide films (TCO) to form as the photoelectrode. TiO2 and ZnO are mostly reported in DSSC due to stability and simple for synthesis One-dimensional nanostructures of ZnO are very important semiconductor building blocks with unique and novel physical and chemical properties.Various morphologies of ZnO nanostructures, such as nanowire arrays, nanorods, nanobelts and nanotubes, have been synthesized using physical, chemical and electrochemical methods. As for energy harvesting, ZnO nanowire (NW) array based piezoelectric nanogenerators have been demonstrated to convert mechanical energy into electricity by utilizing the coupled semiconducting and piezoelectric properties of ZnO. Dye-sensitized solar cells (DSSC) have been studied extensively as a potential alternative to conventional inorganic solid solar cells. Considerable efforts have been devoted to the development of more efficient photoanode materials including ordered meso-structured materials. Highly ordered semiconductor oxide nanotube arrays are particularly attractive, which enhances power conversion efficiency due to its enhanced surface area for the attachment of dye molecules on the photoactive oxide material. ZnO is a promising, but less explored wide band gap semiconductor oxide used for DSSC fabrication. The photoelectrode is focused as an important part because it looks like electron generator of the device. Surface modification techniques can be used to improve the photoelectrode such as plasma treatment, sparking process and etching process [6-8]. It's much higher carrier mobility is more favorable for the collection of photo induced electrons. Taking into account of these factors the present problem is framed to have a detailed study of the effect of morphological and structural parameters on the fabrication of photoelectrodes for DSSC applications. The proposed

MULTIPURPOSE AGRICULTURE ROBOT

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Abstract;The paper aims on the design, development and the fabrication of the robot which can dig the soil, put the seeds, leveler to close the mud and sprayer to spray water, these whole systems of the robot works with the battery and the solar power. More than 40% of the population in the world chooses agriculture as the primary occupation, in recent years the development of the autonomous vehicles in the agriculture has experienced increased interest. The vehicle is controlled by Relay switch through IR sensor input. The language input allows a user to interact with the robot which is familiar to most of the people. The advantages of these robots are hands-free and fast data input operations. In the field of agricultural autonomous vehicle, a concept is been developed to investigate if multiple small autonomous machine could be more efficient than traditional large tractors and human forces. Keeping the above ideology in mind, a unit with the following feature is designed. Our project focuses on remote controlling and slight automating the tractor with sensors so as to get daily farming tasks done with ease. Here we try to automate some farming tasks such as remote controlled tractor and water spraying

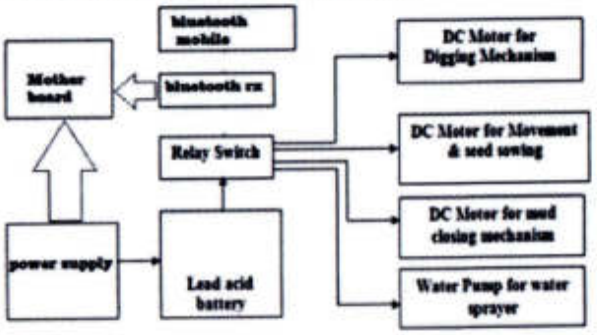
Keywords: Agricultural Robot, Solar Powered, Relay

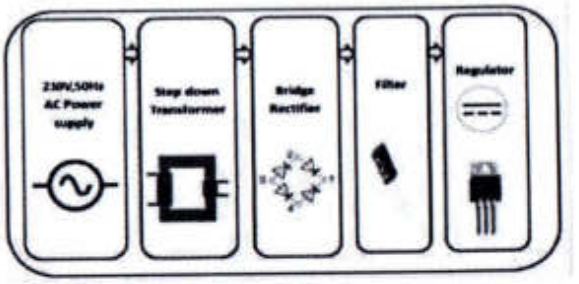
1. INTRODUCTION

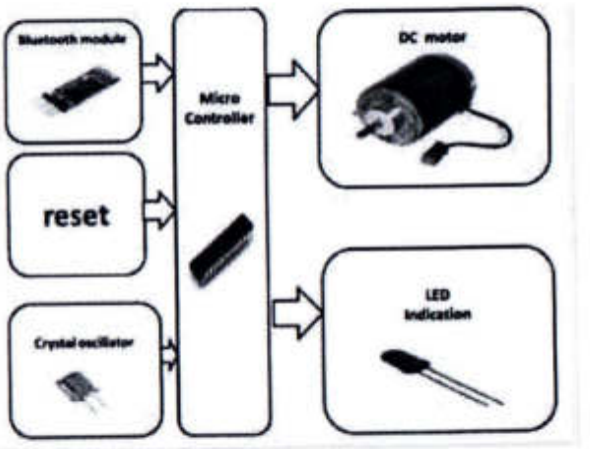
The project aims in designing a Robot that can be operated using Android mobile phone. The controlling of the Robot is done wirelessly through Android smart phone using the Bluetooth feature present in it. Here in the project the Android smart phone is used as a remote control for operating the Robot. The robot in the project can be made to move in all the four directions using the Android phone. The direction of the robot is indicated using LED indicators of the Robot system. In achieving the task the controller is loaded with a program written using Embedded 'C' language.

1.1 Block Diagram

Bluetooth device is interfaced to the control unit on the robot for sensing the signals transmitted by the android application. This data is conveyed to the control unit which moves the robot as desired. An AVR microcontroller is used in this project as control device. Remote operation is achieved by any smart-phone/Tablet etc., with Android OS, upon a GUI (Graphical User Interface) based touch screen operation.







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A HI-5 POWER GENERATION FROM SOLAR, HYDEL, WIND, MAIN AND FOOT STEP FORWIRELESS POWER TRANSMISSION

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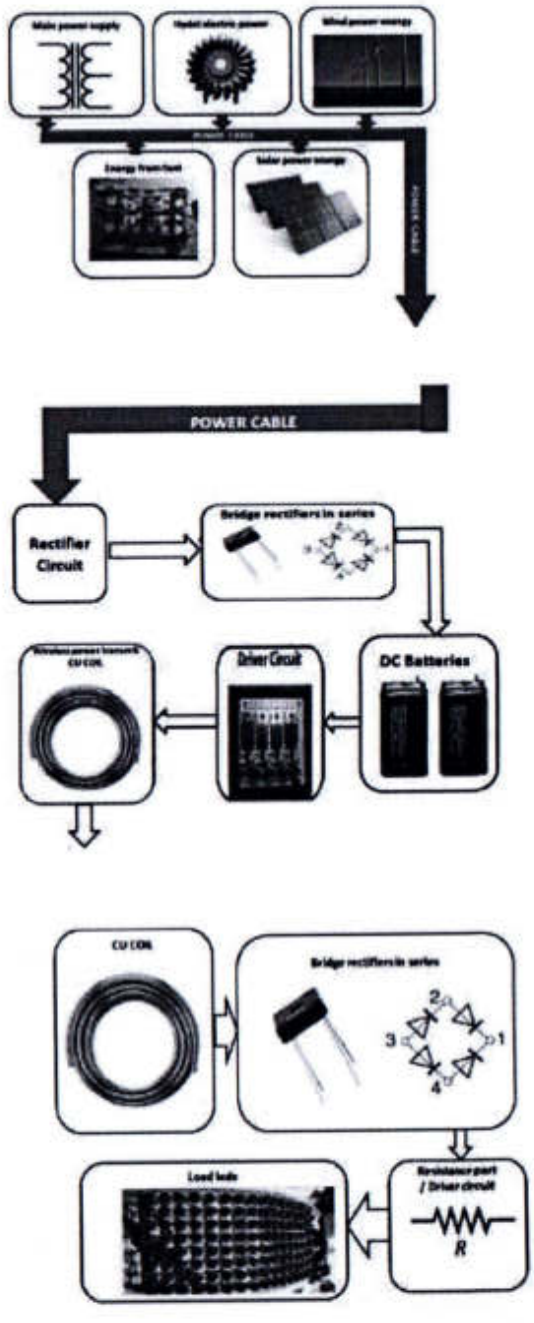
Abstract: Generating electrical power from different parameters these voltages are need to boost to give charging capacity for battery. Now we are converting this power as wireless power transmission by using CU coils. Wireless Electricity transmission is based on strong coupling between electromagnetic resonant objects to transfer energy wirelessly between them. This differs from other methods like simple induction, microwaves, or air ionization. The system consists of transmitters and receivers that contain magnetic loop antennas critically tuned to the same frequency. Due to operating in the electromagnetic near field, the receiving devices must be no more than about a quarter wavelengths from the transmitter. Unlike the far field wireless power transmission systems based on traveling electro-magnetic waves, Wireless Electricity employs near field inductive coupling through magnetic fields similar to those found in transformers except that the primary coil and secondary winding are physically separated, and tuned to resonate to increase their magnetic coupling.

1. PROBLEM DEFINITION

The main idea of this project producing power from different types of parameter sources which can available in India like Solar, Hydel, Wind, Main & foot step powers can boost from boosting voltage circuits and charges storage energy, from battery we are converting voltage in to wireless current. Generating electrical power from different parameters these voltages are need to boost to give charging capacity for battery Now we are converting this power as wireless power transmission by using CU coils Wireless Electricity transmission is based on strong coupling between electromagnetic resonant objects to transfer energy wirelessly between them. This differs from other methods like simple induction, microwaves, or air ionization.

2. BLOCK DIAGRAM

Transmitter and Receiver sections are designed as below



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DESIGN AND FABRICATION OF WIND-SOLAR HYBRID POWER GENERATION

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Abstract The idea is appealing: A two in one system for green power generation; a photovoltaic sub-system for the times when the wind isn't blowing or is blowing at a slow speed, and a wind powered sub-system for nighttime and periods without sunlight. Hybrid systems can minimize the intermittency problem of renewable systems. A typical hybrid solar-wind power system comprises photovoltaic modules, a small wind electric turbine, electronic controllers, a battery bank of 8v connected in series the end outputs are a fan, LED lights, and a mobile charger

Keywords: Photovoltaic, Hybrid system, Intermittency

1. INTRODUCTION

Electricity is most needed for our day to day life. There are two ways of electricity generation either by conventional energy resources or by non-conventional energy resources. Electrical energy demand increases in word so to fulfill demand we have to generate electrical energy. Now a day's electrical energy is generated by the conventional energy resources like coal, diesel, and nuclear etc. The main drawback of these sources is that it produces waste like ash in coal power plant, nuclear waste in nuclear power plant and taking care of this wastage is very costly. And it also damages he nature. The nuclear waste is very harmful to human being also. As the most conventional source of energies are solar and wind, we are combining the solar and wind power to generate electricity hence making it a hybrid power generation system.

1.1 Energy Resources

The world's energy resources can be divided into fossil fuel, nuclear fuel and renewable resources. Renewable energy resources and significant opportunities for energy efficiency exist over wide geographical areas, in contrast to other energy sources, which are concentrated in a limited number of countries. Rapid deployment of renewable energy and energy efficiency, and technological diversification of energy sources, would result in significant energy security and economic benefits. Solar energy and wind energy are chosen here for hybrid power generation

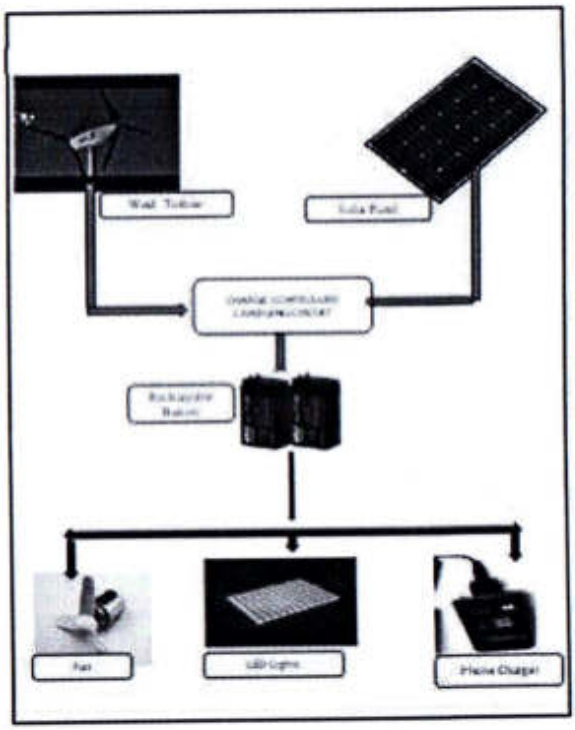
2.HARDWARE IMPLEMENTATION

The components include solar panel, PMDC motor, Rechargeable lead acid battery, LED, 7806 and LM 31Voltage regulator IC, IN 4007 Diode, Resistor, variable resistor 5kΩ

2.1 Block diagram

The aim of this work is design and implementation of a solar-wind hybrid energy system. This work is expected to help to understand the basics of solar-wind hybrid power generation. A small part of the daily electricity consumption with an efficient utilization of solar and wind power.

Here we made a hybrid system where the solar power is stored in a battery and the combination of battery output and wind power output fed to the load. Because of the availability of wind is throughout the day & night whereas solar power is only available in daylight and for a limited time, here we are not storing the wind power



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DESIGN & IMPLEMENTATION ON GAS LEAK DETECTION & LOCATION SYSTEM BASED ON WIRELESS SENSOR NETWORK

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Abstract: - A new gas leak detection and location system was developed; it compromises sensitive sensors and ZIGBEE, WSN which is smart, low-cost, low-power and Low - maintenance. In two modes, this system can monitor the gas leakage sensitively, get the data from a scene of the accident and locate the leakage point. Based on WSN, the system is easy to be deployed and overcomes the shortcomings on current systems. It is used to improve the rescue quality and shorten the time for rescue. Therefore it can compensate for the weaknesses of current systems. The information in the system is stored via a .Net application enabling the user to access the data whenever required. With the help of this data, proper precautions can be taken to minimize the pollution levels in the air to make human life sustainable. This paper is Develops a gas leak detection and location system for the production safety in Petrochemical Industry. The system is based on Wireless Sensor Networks (WSN). It can collect the data of monitoring sites wirelessly and sent to the computer to update values in the location software. It can give a real-time detective of the potential risk area, collect the data of a leak accident and locate the leakage point. However the former systems can not react in time, even cannot obtain data from an accident and locate accurately. The paper has three parts, first, gives the overall system design, and then provides the approaches on both hardware and software to achieve it. The data received from the sensor device is simultaneously stored in a system for a future reference in the levels of contamination.

Keywords: wireless sensor, gas detection, ZIGBEE, .Net

1.INTRODUCTION

This paper is microcontroller based project. A Gas sensor is used to detect dangerous gas leaks in the kitchen, industries or near the gas heater. Whenever there is a gas leakage in the surrounding areas of this node this will be detected by the sensor. The main aim of the project is to develop a gas leak detection and location system for the production safety in Petrochemical Industry when they exceeds threshold, intimation is given to the nearby control section including readings of parameter and location of the gas leakage . Security management of several home and office appliances is a subject of growing interest and in recent years we have seen many systems providing such security. These days apart from security from robbery there must be security from flammable gases Present in the surrounding to protect houses, offices, vehicles, industries etc. From various harmful gases. There is a need to have security from this gases. Mobile phone is also playing role in its parallel world with telephones. When there is Gas leakage the telephone and mobile phone both will play great role in the detector to contact and warn the authorized person about flammable gas leakage. Both Mobile Phone and Telephone are required to perform the project.

2.EXISTING SYSTEM

The existing system only detects the fire and gas leakage in certain important areas only. In existing system, the fire and gas leaks are measured and the communication is through wires to the control station. In case of faults like discontinuity in cables, lead to loosing of vital information related to plant safety. Increase in the complexity of process industry leads to increase in the number of instruments to detect fire and leakage. This increases the number of cables that run from industrial sensors to the control station which leads to messy wiring. This also increases the size of the duct. Troubleshooting the reduced insulation or any wire open is difficult because it is a messy wiring and identifying the individual cable is very difficult along the duct. This also increases the cable cost.

To overcome these difficulties we implemented a portable device. This device can be fixed in their helmet or jacket. To measure various parameters this device consists of sensors. They are Gas sensor, Temperature sensor, Heart beat sensor, Pressure sensor. These sensors in the portables device sense various parameters (gas, temperature, pressure) continuously. And if the value

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TO STUDY THE EFFECT OF HRD STRATEGIES ON PERFORMANCE OF THE ORGANIZATION

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ABSTRACT:Over recent years there has been an increasing interest in the field of human resource management. Organizations should prefer to maximize wealth through maximizing their human capital.This study is to determine the extent to which strategic Human Resources Development is practiced at the ICICI Bank, to identify the human resource development strategies adopted by the organisation also to assess the synchronisation of HRD strategies and organisational mission.

The results show that 100% of respondents interviewed agreed that the ICICI Bank have a fully-fledged Human Resources Development unit.

The study shows that 67% of respondents accepted that there is a documented Human Resource Development strategy that guides the ICICI Bank while 33% stated that human resource development strategy does not exist at the ICICI Bank.

Out of the respondents interviewed 35% stated that human resource development policies existed in the ICICI Bank of while 33% of the respondents said that it did not exist, the other 32% of the respondents did not give any response.

From typically the research findings it had been revealed that human resources advancement is practiced and everything the particular respondents were aware associated with the several HRD practices transported out within the ICICI Bank. The particular predominant HRD practiced are usually training and Career Development Strategy as compared to knowledge management and organizational learning. It has been further revealed that numerous forces both internal plus external influenced the HRD practices in the ICICI Bank. With regard to instance the ISO qualification of the ICICI Bank required that employees are trained to be able to comply with ISO needs.

KEYWORDS:
Human resource Development, Strategy, Mission, Total Quality System, Employee Performance, Competitive Advantage.

1. INTRODUCTION:

Strategic Human Resources Development

Human resources management emphasizes that employees are critical to attaining sustainable competitive advantage, that human resources practices need to be integrated with corporate strategy and that human resources professionals help organization controllers to meet both efficiency and equity objectives

Need for study

Despite of all the benefits enjoyed through the Strategic Human Resources Development, employees time and again complain of many shortfalls. Such problems are affecting the consistency in organizational performance. Few Empirical research is available in the context of banking sector in Hyderabad Therefore, considering all these difficulties and challenges in the background the researcher was prompted to take this topic that is study of strategic human resources development practice at ICICI bank.

Objective of the study

1. To determine the extent to which strategic Human Resources Development is practiced at the ICICI Bank.
2. To identify the human resource development strategies adopted by the organisation.
3. To assess the synchronisation of HRD strategies and organisational mission.
4. To study the effect of HRD strategies on performance of the organization.
5. To give suggestions to improve the human resource development in the organizations.

2. RESEARCH METHODOLOGY

Research Design:

A Descriptive Research Design has been adopted and a Survey Method has been used.

Survey method was careful used and a structured questionnaire was administered through personal contact

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"SEISMIC RESPONSE OF RCC BUILDING WITH AND WITHOUT DIAPHARM USING STAAD PRO"

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Abstract: The main objective of this project is to analyze and design a RCC framed structure with and without diaphragm for seismic forces. For this analysis we considered a college building [G + 3] (3 dimensional frame). In order to compete in the ever growing competent market it is very important for a structural engineer to save time, as a sequel to this First architectural plan and layout of a college building has been prepared in AUTOCAD and the analysis and design is done by using the software package STAADPRO. In this first the analysis and design is done by applying dead load, live load and floor loads and the results are tabulated. Then again the analysis and design is repeated by applying the panel properties with pressure intensity on the panel and the results are tabulated.The results obtained from the above two steps are compared and are represented graphically.

1. INTRODUCTION

The project is mainly to study the response of a floor (or roof) diaphragm to the horizontal forces generated within it, and how the forces are transmitted horizontally to the building walls and frames.

A horizontal system (roof, floor or other membrane or horizontal bracing) acting to transmit lateral forces to vertical-resisting elements is called as diaphragm.

The floors and roof of a building, in addition to resisting gravity loads, are also generally designed to act as diaphragms. In this respect, they are required both to distribute seismic forces to the main elements of horizontal resistance, such as frames and shear walls, and also to tie the structure together so that it acts as a single entity during an earthquake. The robustness and redundancy of a structure is highly dependent on the performance of the diaphragms. Precast floors without an in-situ topping are not generally recommended in seismic areas.

In a ductile structure, diaphragms will almost always be required to r emain elastic, so that they can sustain their function of transferring forces to the main lateral-resisting structure, and tying the building together. Diaphragms should in principle therefore have the strength to sustain the maximum forces that may be induced in them by the chosen yielding mechanism within the rest of the structure.Eurocode 8 deals with this rather simply by specifying that diaphragms should be designed for 1.3 times the shear forces obtained directly from the analysis.

2. LOAD PARAMETERS

Introduction

Loads and properties of materials constitute the basic parameter of a R.C structures. Both of them are basically of a varying nature .For such a quality of varying nature, it is necessary to arrive of a single representative value. Such value is known as characteristic value. The value to be taken in design which provides appropriate or designed margin of safety is known as design values. The loads are taken as per IS-875 and the material properties like characteristic value are taken from IS-456.

Types of load

The various types of loads acting on the structure which needs consideration in building design as follows:-

dead loads
live loads
wind loads
earthquake loads
other loads

3. MODELING AND ANALYSIS

Structural Planning

Structural planning is first stage in any structural design. It involves the determination of appropriate form of structure, material to be used, the structural system, the layout of its components and the method of analysis.

As the success of any engineering project measured in terms of safety and economy, the emphasis today is being more on economy. Structural planning is the first step towards successful structural design.

Structural Planning of Reinforced Concrete Framed Building

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EFFECT OF FOUDATION SYSTEM FOR DIFFERENT SUPPORTS CONDITIONS IN A R.C.C BUILDING USING STAAD.PRO

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Abstract— The principle objective of this project is to analyze and design a Hospital Building [G + 3 (3 dimensional frame)] using STAAD Pro. In order to compete in the ever growing competent market it is very important for a structural engineer to save time. as a sequel to this an attempt is made to analyze and design a Multi-storeyed building by using a software package staad-pro.

The design involves load calculations manually and analyzing the whole structure by STAAD Pro. The design methods used in STAAD-Pro analysis are Limit State Design conforming to Indian Standard Code of Practice. STAAD-Pro features a state-of-the-art user interface, visualization tools, powerful analysis and design engines with advanced finite element and dynamic analysis capabilities. From model generation, analysis and design to visualization and result verification, STAAD-Pro is the professional"s choice. Initially we started with the analysis of simple 2 dimensional frames and manually checked the accuracy of the software with our results. The results proved to be very accurate. We analyzed and designed a G + 1 storey building [2-D Frame] initially for all possible load combinations [dead, live, wind and seismic loads].

1. INTRODUCTION

From a long time it has been the constant effort of structural engineers to improve their concepts of analysis and design so that an economical structure is obtained wefwfw3rqconsistent with safety and serviceability. The introduction of various grades of steels helped in achieving considerable economy in the use of scarce minerals and in reducing the cost of construction.

A complete knowledge of the behavior of structures is essential for design and such knowledge as mainly obtained though organized research in laboratories. Ultimately such knowledge finds acceptance in the "codes of practice." Various countries. These research and development programs are very costly to be afforded by any one country. These research developments have become truly international and this is particularly true in the field of "limit state design of R.C.C.Structures."

2. DESIGN PRINCIPLE, ASSUMPTION AND NOTATION ASSUMED

The notation adopted throughout the work is same as in IS-456-2000.

Assumption In Design

1.Using partial safety factors for loads in accordance with clause 36.4 of IS-456-2000 as yf = 1.5

2.Partial safety factor for material in accordance with clause 36.4.2 is IS-456-2000 is taken as 1.5 for concrete and 1,15 for stee

3.Using partial safety factors in accordance with clause 36.4 of IS-456-2000 combination of load.

(D.L. + L.L.) 1.5

(D.L. + L.L. + W.X) 1.5

(D.L. + L.L. - W.X) 1.5

(D.L. + L.L. + Load case 4) 1.5 (D.L. + L.L. - Load case 4) 1.5

0.9 D.L. + 1.5 L.L.

(D.L. + L.L. + W.X) 1.2

(D.L. + L.L. - W.X) 1.2

(D.L. + L.L. + Load case 4) 1.2 (D.L. + L.L. - Load case 4) 1.2

Load calculations

Calculation of DL on beams

self weight of beams = 0.23 * 0.450* 25 = 2.5875 kN/m

Weights due to walls on beam = (2.55 * 0.152 * 19) = 7.3644 kN/m

total = 9.9519 kN/m

Amount of distributed load coming from slab either in the form of triangular load or trapezoidal load = { w Lx (3 – (Lx / Ly) ^2 } / 6 or { w Lx / 3 }

And loads from cantilever slabs ie = w Lx

Here w = self wt of slab , Lx = shorter dimension , Ly= longer dimension of slab panel

Live load on slab:-

This are assumed to be

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DYNAMIC ANALYSIS OF MULTI STORIED BUILDING (G+6) USING STAAD PRO

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Abstract: Analysis and design of buildings for static forces is a routine affair these days because of availability of affordable computers and specialized programs which can be used for the analysis. On the other hand, dynamic analysis is a time consuming process and requires additional input related to mass of the structure, and an understanding of structural dynamics for interpretation of analytical results. Reinforced concrete (RC) frame buildings are most common type of constructions in urban India, which are subjected to several types of forces during their lifetime, such as static forces due to dead and live loads and dynamic forces due to the wind and earthquake. Here the present works (problem taken) are on a G+30 storied regular building. These buildings have the plan area of 25m x 45m with a storey height 3.6m each and depth of foundation is 2.4 m. & total height of chosen building including depth of foundation is 114 m. The static and dynamic analysis has done on computer with the help of STAAD-Pro software using the parameters for the design as per the IS-1893- 2002-Part-1 for the zones- 2 and 3 and the post processing result obtained has summarized

1. INTRODUCTION

The high-rise building is generally considered as one that is taller than the maximum height which people are willing to walk up, it thus requires mechanical vertical transportation. This includes a rather limited range of building uses, primarily residential apartments, hotels, and office buildings, and also occasionally including education facilities.

As per NATIONAL BUILDING CODE OF INDIA (NBC) 2005, High rise building is defined as a building of 15 metres or greater in height, which is divided at regular intervals into occupiable levels. To be considered a high rise building a structure must be based on solid ground.

It is a common practice to model a multi storied tall building as a frame structure where the load structure design are supported by beams and column.

Intrinsically the structural strength provided by the walls and slabs are neglected as the building height is increasing the effects of lateral load on multi storey and structural increase considerably the consideration of walls and slab in the structural modelling in addition to the frame structure load to improve lateral stiffness those a more economical structural design can be achieved.

In this thesis modelling and structural analysis of multi stored building [G+6] have been performed to investigate the effect considering the walls, slab subjected to dynamic load studied. The structure was subjected to self-weight, dead load, live load, wind load and seismic loads under the load case details of STAAD.Pro. The wind load values were generated by STAAD.Pro considering the given wind intensities at different heights and strictly abiding by the specifications of IS 875 (part 3). Seismic load calculations were done following IS 1893-2000.

The minimum requirements pertaining to the structural safety of buildings are being covered by way of laying down minimum design loads which have to be assumed for dead loads, imposed loads, and other external loads, the structure would be required to bear. Strict conformity to loading standards recommended in this code, it is hoped, will ensure the structural safety of the buildings which are being designed. Structure and structural elements were normally designed by Limit State Method.

The entire process of structural planning and design requires not only imagination and conceptual thinking but also sound knowledge of practical aspects, such as recent design codes and bye-laws, backed up by experience, institution and judgment.

It is emphasized that any structure to be constructed must satisfy the need efficiency for which it is intended and shall be durable for its desired life span.

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ANALYSIS AND DESIGN OF BUILDING WITH SHEAR WALL USING STAAD.PRO

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Abstract In present scenario buildings with shear wall is a typical feature in the modern multi-storey construction in urban India. Such features are highly undesirable in building built in seismically active areas. This study highlights the importance of explicitly recognizing the presence of the shear wall in the analysis of building. Design of RCC elements will also be perform as per IS-456 2000 for the building without shear wall. A numerical study will perform using Staad pro Software will be used for 3D multi storey frames with and without shear wall to study the responses of the structure under seismic and wind loads. Storey displacements will be computed for both the buildings with and without shear wall and comparing the results

1.INTRODUCTION

Civil engineer deals with the construction of building such as residential houses, dams, bridges, canals, etc. A simple building can be defined as an enclosed structure with walls and roof. In the early ancient times humans lived in caves, over trees or under trees, to protect themselves from wild animals, rain, sun, etc. as the times passed as humans being started living in huts made of timber branches. The shelters of those old huts have been developed nowadays into beautiful houses. Rich people live in sophisticated condition houses

. Buildings are the important indicator of social progress of the county. Every human has desire to own comfortable homes on an average. Generally, one spends his two-third life times in the houses. This is the reason that the person do supreme effort and spend hard earned saving in owning houses. Nowadays, the house building is major work of the social progress of the county. Daily new techniques are being developed for the construction of houses economically, quickly and fulfilling the requirements of the community engineers and architects do the design work, planning and layout, etc, of the buildings.

A building frame consists of number of bays and stories. A multi-storey, multi-paneled frame is a complicated statically intermediate structure. A design of R.C building of G+5 storey frame work is taken up. The size of building is 40x28m.The number of columns are 33. It is residential complex. The design is made using software on structural analysis design (STAAD-Pro).

The building subjected to both the vertical loads as well as horizontal loads. The vertical load consists of dead load of structural components such as beams, columns, slabs etc and live loads, seismic loads. The horizontal load consists of the wind forces thus building is designed for dead load, live load and wind load as per IS 875. The building is designed as 3 dimensional vertical frame and analyzed for the maximum and minimum bending moments and shear forces by outputs method as per IS 456-2000.With the help of STAAD-Pro software computations of loads, moments and shear forces and obtained.

We have chosen STAAD Pro because of its following advantages easy to user interface

- conformation with the Indian Standard Codes
- versatile nature of solving any type of problem
- Accuracy of the solution

2. STRUCTURAL MODELLING:

The two buildings are modeled and analyzed for static, response spectrum and pushover analyses, using the finite element package SAP2000. The analytical models of the buildings include all components that influence the mass, strength and stiffness. The non-structural elements and components that do not significantly influence the building behavior were not modeled. The floor slabs are assumed to act as diaphragms, which ensure integral action of all the vertical lateral load-resisting elements. Beams and columns were modeled as frame elements with the centre lines joined at nodes. Rigid offsets were provided from the nodes to the faces of the columns or beams. The stiffness for columns and beams were taken as 0.7EIg, accounting for the cracking in the members and the contribution of flanges in the

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EXPERIMENTAL INVESTIGATION OF PRESSURE DROP CHARACTERISTICS ACROSS RECTANGULAR CHANNEL USING DETACHED RIBS

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Abstract: In the present day it is very necessary to find heat transfer characteristics of heat exchanger, heat exchanger as an important appliances widely used in day to day life, like in industry, home appliances, gas turbine, transportation, power production, in aircraft etc. the improvement of heat transfer performance of heat exchanger can be done by using insertion of vortex generators across rectangular channel. The experimental study is conducted to examine the pressure drop characteristics across rectangular duct with different geometrical configuration of detached ribs, Detached Ribs as vortex generators are inserted 90° in a rectangular duct having different aspect ratio (AR) of 1.4,1.8, 3,3.6. The effect of width, pitch ratio (P/H) of inserting vortex generator, flow direction and aspect ratio of duct are examined for Reynolds numbers (Re) based on hydraulic diameter of rectangular duct Dh, and it is in the range of 8000 to 24000. The results shows if pitch to height increases friction factor ratio decreases by 28.98% , if Reynolds number increases , 8.34% time friction factor ratio increases , if aspect ratio increases friction factor ratio decrease by 80.03%. The experiment is repeated for different AR of vortex generators 1.4,1.8, 3,3.6. pitch ratio (P/h), width 16.07mm, 12.5mm, 7.5mm,6.25mm, for different Re = 8000, 12000, 16000, 20000, 24000.

Keywords: Rectangular Duct, Detached Ribs, Pressure Drop, Vortex Generator, Aspect Ratio, Friction Factor Ratio

1. INTRODUCTION

Heat exchangers are used in almost all the industrial plants, transfer of hot fluid to cold and vice versa , use of heat exchanger is there from olden days to till date and it will be continued, the principle is same from olden days to till today but there are changes in the use of techniques. and in future for better heat transfer enhancement and to improve pressure drop vortex generators as an obstacle in heat exchanger will be used. Most industrial engineers and researchers focus on investigating the heat exchangers because of their wide use in industry, channel flow has got more importance in engineering industry because of their application, the channels may be rectangular, square, triangular, circular, non circular, trapezoid, and polygonal. In this paper, we are using rectangular channel to achieve effective cooling and more compactness, detached ribs are used as vortex generators, the experimental result for detached ribs for different configurations are shown, the influence of pitch to height ratio, aspect ratio of vortex generator for different Reynolds number and pressure are discussed.

K. Yongsiri, p .Eeiamsa-ard, k. wongchare, S. eiamsa-ard (2013): In this paper researcher have taken the incline detached-ribs with different angle of attacks(θ) 0°, 15°, 30°, 45°, 60°, 75°, 105°, 120°, 135°, 150°, 165° with different Reynolds range from 4000 to 24000 for heat transfer, pressure loss, thermal performance and compare with the attached ribs of θ = 90°. In CFD results at inclined ribs at θ

= 60°and 120° heat transfer, thermal performance factors are high than the other inclined ribs. In flow structure and

temperature field for Reynolds number 4000, inclined detached ribs of angles 45°, 60°, 75°, 90°, 105°, 120°, 135° 150° create more recirculation zone after the ribs and also at the angles 0°, 15°, 30° and 165° we can't find recirculation zone, result include that medium angle of attack give better mixing of fluid.AmnartBoonloi(2014): Researcher use the 30° V-shaped baffles as the vortex generator placed on the double side of the thin with plate and without plate to perform heat transfer and thermal performance in a square duct, here 30°V-shaped vortex generator are inserted diagonal to the square for different

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STUDY OF ERECTION SEQUENCE OPERATIONS OF A BOILER IN THERMAL POWER PLANT

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Abstract: This project is mainly about the study of operations that are held during the construction of a boiler. The series of activities that are carried out in a power plant are discussed in this project. By this project we can get an idea of how the current techniques and mechanical operations are used practically. The boiler is a steam generating equipment, the steam thus produced in the boiler was processed further to convert it into a electrical power. The steam processing requires water and coal as a main raw material. The water is circulated inside the tubes and the coal is used as a fuel for burning

1. INTRODUCTION

A boiler or steam generator is a device used to create steam by applying heat energy to water. Although the definitions are somewhat flexible, it can be said that older steam generators were commonly termed boilers and worked at low to medium pressure (7– 2,000 kPa or 1–290 psi) but, at pressures above this, it is more usual to speak of a steam generator.

A boiler or steam generator is used wherever a source of steam is required. The form and size depends on the application: mobile steam engines such as steam locomotives, portable engines and steam-powered road vehicles typically use a smaller boiler that forms an integral part of the vehicle; stationary steam engines, industrial installations and power stations will usually have a larger separate steam generating facility connected to the point-of-use by piping. A notable exception is the steam-powered fireless locomotive, where separately-generated steam is transferred to a receiver (tank) on the locomotive.

Types of generator unit used in coal fired power plants:

The steam generator or boiler is an integral component of a steam engine when considered as a prime mover. However it needs to be treated separately, as to some extent a variety of generator types can be combined with a variety of engine units. A boiler incorporates a firebox or furnace in order to burn the fuel and generate heat.

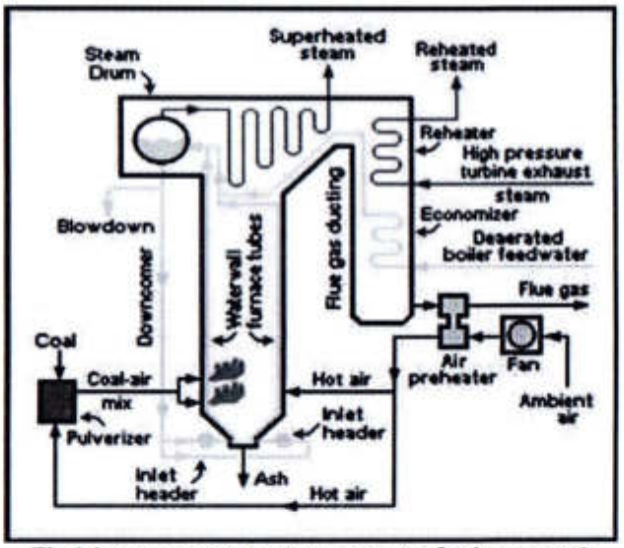

Fig 1.1 steam generator (components of prime mover)

The generated heat is transferred to water to make steam, the process of boiling. This produces saturated steam at a rate which can vary according to the pressure above the boiling water. The higher the furnace temperature, the faster the steam production. The saturated steam thus produced can then either be used immediately to produce power via a turbine and alternator, or else may be further superheated to a higher temperature; this notably reduces suspended water content making a given volume of steam produce more work and creates a greater temperature gradient, which helps reduce the potential to form condensation. Any remaining heat in the combustion gases can then either be evacuated or made to pass through an economiser, the role of which is to warm the feed water before it reaches the boiler.

Types of boiler

Fire-tube boiler

For the first Newcomen engine of 1712, the boiler was little more large brewer's kettle installed beneath the power cylinder. Because the engine's power was derived from the vacuum produced by condensation of the steam, the requirement was for large volumes of steam at very low pressure hardly more than 1 psi (6.9

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CFD ANALYSIS OF SOLAR ABSORBER PLATE

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Abstract: Solar energy is becoming an alternative for the limited fossil fuel resources. One of the simplest and most direct applications of this energy is the conversion of solar radiation into heat, which can be used in water heating systems. A commonly used solar collector is the flat-plate. Solar flat plate collectors are used for domestic and industrial purposes and have the largest commercial application amongst the various solar collectors. This is mainly due to simple design as well as low maintenance cost. A lot of research has been conducted in order to analyze the absorber plate operation and improve its efficiency.

An attempt is being made to analyze the solar absorber plate using the Computational Fluid Dynamics (CFD) so as to simulate the solar absorber plate for better understanding of the heat transfer capabilities of the absorber. In the present work, Fluid flow and heat transfer in the absorber panel are studied by means of Computational Fluid Dynamics (CFD). The conjugate heat transfer phenomenon between absorber and water is modeled using solid works CFD software. The analysis was carried out to investigate the effect of material, mass flow rate, riser position and riser shape. The solar radiation heat transfer is not modeled. The geometric model and fluid domain for CFD analysis is generated using Solid works flow simulation software, Grid generation is accomplished by solid works Meshing Software. The numerical results obtained using the CFD software for copper and aluminum for same boundary conditions has to be analyzed for different design constructions.

Keywords: CFD Analysis, Solar absorber plate, Efficiency, Radiation, Solid Works

1. INTRODUCTION

Solar collectors are key components of active solar-heating systems. They gather the sun's energy, transform its radiation into heat and then transfer that heat to a fluid (usually water or air). The solar thermal energy can be used in solar water-heating systems, solar pool heaters, and solar space-heating systems. The sides and bottom of the collector are insulated to minimize the heat loss. Sunlight passes through the cover and strikes the absorber plate, which then heats up, converting solar energy into heat energy. The heat is transferred to the water passing through the risers attached to the absorber plate. Absorber plates are most commonly painted with "selective coatings" which absorb and trap heat better than any other ordinary black paint. Absorber plates are usually made of metal—typically either copper or aluminum—because both of them are good heat conductors. Copper is the more expensive, but is better when it comes to resistance from corrosion. In locations with an average available solar energy, flat plate collectors are sized approximately at one-half-to one-square foot per gallon of one-day's hot water use.

In order to increase the heat transfer rate of the system, we can make use of different types of augmentation methods. Augmentation methods include active and passive methods with the latter being the most widely used

2. COMPUTATIONAL FLUID DYNAMICS APPROACH

Computational fluid dynamics or CFD is the analysis of systems involving fluid flow, heat transfer and associated phenomena such as chemical reactions by means of computer-based simulation. The technique is very powerful and spans a wide range of industrial and non-industrial application areas. Dynamics of fluids are governed by coupled non-linear partial differential equations, which are derived from the basic physical laws of conservation of mass, momentum, and energy. Analytical solutions of such equations are possible only for very simple flow domains with certain assumptions made about the properties of the fluids involved. For conventional design of equipment, devices, and structures used for controlling fluid flow patterns, designers have to rely upon empirical formulae, rules of thumb, and experimentation. However, there are many inherent problems with these conventional design processes. Empirical formulae and rules of thumb are extremely specific to the problem at hand and are not globally usable because of the non-linearity of the governing equations. For example, a rule of thumb for designing an aircraft wing may not be applicable for designing a wing mounted on a racing car, as the upstream flow conditions are completely different for the two configurations.

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PERFORMANCE ANALYSIS OF SOLAR FLAT PLATE COLLECTOR

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Abstract: Now a days the usage of natural resources are highly in progress because artificial resources such as electricity, gasoline, fuel etc are in declination stage and are very expensive. Solar radiation from sun is emitted and falls on earth surface this radiation is collected by using solar collectors. The present work is aimed to predict the performance of flat plate collector tested for 3different days, using an application of water heating. The material used in the work is absorber plate, tube or pipe made of GI, casing and glass. The absorber plate material is mild steel and tube or pipe material is galvanized iron. Mild steel material have absorbility is about 0.8 with black paint coated. The tube material is galvanized iron which is mild steel with coated with zinc for corrosion resistance. For this selection of material the maximum efficiency obtained was 9.75% at temperature 670 c

Keywords: Flat Plate Collector (FPC), Tout(Outlet temperature), Tin(Inlet Temperature), Glazing cover, Glazing frame, absorber plate

1. INTRODUCTION

Solar energy is the energy that sustains life on earth for all plants, animals and people. It provides a compelling solution for society to meet their needs for clean and abundant sources of energy in the future. Energy has played a key role in bringing about our modern civilization. In the era of modern civilization, energy demands are likely to increase for power generation for industrial and domestic usage. Solar radiation is primarily transmitted to the earth and is collected by using collectors. Solar radiation provides enormous amount energy. Solar radiation has been utilized for centuries by peoples for heating and drying. Solar water heating is one of the most successful applications of solar energy.

Solar collectors domestic applications are flat plate, evacuated tube, or concentrating collectors. Flat plate collector (FPC) is a special kind of heat exchanger that transforms solar radiation energy to internal energy which is transferred through a working liquid. This is commonly found in domestic home.

The principles involve in FPC is to gain as much as possible the radiation energy from the sun by heat absorption. The energy which has been collected is transferred through conduit tubes by working fluids (usually water) which are integrated with heat absorber plate. Then, the warm water carries the heat to the hot water system or to storage subsystem which can be used during low sun radiation.

In FPC, the ability to absorb more energy is most important in its thermal performance. The heat absorber plate serves as the central component of the flat plate collector. When the absorber plate absorbs more heat from the Sun, the outlet temperature (T out) should have higher value from inlet temperature (T in) Thus, from the temperature values, efficiency of the FPC can be obtained. For domestic water heating, the FPC can heat the water up to 50°C.

The most common collector types are evacuated tubular collectors (ETC) and flat plate collectors (FPC) without vacuum. Different types of these collectors are described below. Concentrating collectors (Parabolic trough, Fresnel etc.) may also be used, but since a large part of the annual irradiation is diffuse – especially in the northern part Europe – and of these types do not utilize the diffuse part, they are not described further in this fact sheet.

A. Problem Statement

The ability of the heat absorber plate to absorb more heat from the sun and maintain the heat is the main key in FPC performance. The efficiency of the FPC is defined as the ratio of the useful gain over some specified time period to the incident solar energy over the same period of time .Heat absorbed by FPC depends on thermal properties as well as on the design of the heat absorber plate. Material of the heat absorber plate plays a crucial role in the heat absorbing ability due to the thermal properties. Moreover, the correct thickness important in absorber plate selection. In this project, mild steel and galvanized iron is used for absorber plate and tube respectively.

The optimization of thickness and material used in the design of the

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DESIGN AND FINITE ELEMENT ANALYSIS OF MISSILE CANISTER

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Abstract: Cylindrical pressure vessels are widely used for commercial, under water vehicles and in aerospace applications. At present the outer shells of the pressure vessels are made up of conventional metals like steels and aluminium alloys. The payload performance/ speed/ operating range depends upon the weight. The lower the weight the better the performance, one way of reducing the weight is by reducing the weight of the shell structure. The use of composite materials improves the performance of the vessel and offers a significant amount of material savings. Moreover, the stacking sequence is very crucial to the strength of the composite material. This Paper involves various objective functions such as orientation, composition and buckling load. Canister is a cylindrical pressure vessel used to store and launch a missile. The matrix and fibre reinforcement used are Epoxy resin and glass fibre cloth. The design considerations are 30 bar (internal pressure) and 5 bar (external pressure). External pressure causes buckling and buckling analysis is also performed. Theoretical calculations are done to find out the inclination of piles, fiber fraction for maximum strength. The Comparisons are made for two different approaches i.e. the finite element model and the theoretical model. A 3-D finite element analysis is built using ANSYS-Workbench software into consideration, for static and buckling analysis on the pressure vessel. Safe design is known by comparing the factor of safety of theoretical and analysis.

Key Words: Composite material, Shells, Fiber orientation, composition, Critical Pressure, Buckling

1. INTRODUCTION

Missile is an object capable of being projected, usually with the intent of striking some distant object. All the more especially, a missile is generally a weapon that is self-propelled in the wake of leaving the starting gadget. As it were, missile is a rocket propelled weapon intended to convey an unstable warhead with awesome exactness at fast. Missiles are tough, very much developed machines. Be that as it may, in light of their size, weight, and mass, they are not that simple to deal with nor are missiles indestructible. Most missile harm is, sadly, an aftereffect of imprudence and poor dealing with rehearses. To decrease the likelihood of harm, missiles are shipped, stored and handled with unique equipment's. Affirmed containers, canisters, and dealing with gear's furnish most extreme missile security with least taking care of by work force. The missile compartment utilized beforehand was of top kind (bag) containers. This kind of compartment has extensive contact territory at the end locale. So it is imperative that the producer needs to take outrageous care in delivering this compartment with no warpage at the end district. Else there will be a leakage of gas from the hole created due to warpage. In this manner the assembling turns out to be more unpredictable and more costly. Missile is a question equipped for being anticipated, as a rule with the purpose of striking some far off protest. All the more especially, a missile is typically a weapon that is self-propelled in the wake of leaving the starting gadget. As such, missile is a rocket-propelled weapon intended to convey a hazardous warhead with extraordinary exactness at rapid. Missiles are durable, all around developed machines. In any case, due to their size, weight, and mass, they are not that simple to deal with nor are missiles indestructible. Most missile harm is, shockingly, a consequence of lack of regard and poor taking care of practices. To lessen the likelihood of harm, missiles are shipped, stowed and handled with unique equipment's. Affirmed containers, canisters, and dealing with hardware's furnish most extreme missile wellbeing with least taking care of by work force.

2. LITERATURE REVIEW

A missile is damaged shockingly because of carelessness and poor dealing with practices. A published paper, "Design and Analysis of a Storage Container used in Missile" by Prudvi Raju. Devarapalli, Venkata Ramesh Mamilla, designed a container which is used for transportation and storage of missile. To decrease the possibility of damage, missiles are shipped, stored and handled with affirmed missile containers. Endorsed containers, furnish greatest missile safety with least taking care of by personnel. This makes the design and

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REMOTE CONTROLLED MECHATRONICS SYSTEM

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Abstract: This paper presents controlling of mechatronics system using remote operated. This system has a special feature of smart video transfer and capture feature. The images are transferred to the monitor by the surveillance system. The system is always controlled by the remote operated by human.The remote controlled mechatronics system is aim to use in the situation like natural calamities, to inspect and navigate from remote location and collect the video without wires. It Just by throwing from window the ball can send the images inside the room and also can navigate the video ball from one room to another room to look for people. This is perfect for changeable lighting conditions. High-resolution security cameras have additional light sensors on their digital chips. This includes augment the effective image quality. These cameras are effectual only with high-resolution monitors. Small in size and Simpler to setup. The Wireless digital cameras give sharper effects. In video ball the encoders are given as an input and the decoders are the output. The program is given to the system it transmits by the transmitter and the monitor receive the images by receiver. The wireless video transmit the signal and at remote location the live video issued to inspect the areas where are accessible and non accessible.

Keywords— Remote controlled Mechatronics system, Video surveillance system, Video ball, Microcontroller, Encoder, Decoder.

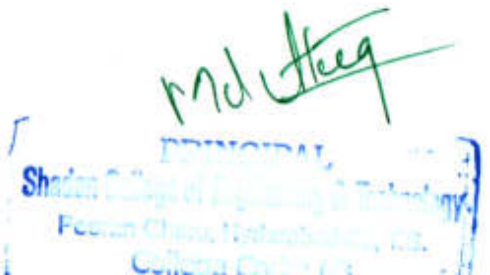
1. INTRODUCTION

Observing or analyzing a particular site for safety and business purposes is known as video surveillance. Security and crime control concerns are the motivating factors for the deployment of video surveillance cameras. Video surveillance cameras are used in shopping centers, public places, banking institutions, companies and ATM machines. Nowadays, researches experience continuous growth in network surveillance. The reason being is the instability incidents that are happening all around the world. Therefore, there is a need of a smart surveillance system for intelligent monitoring that captures data in real time, transmits, processes and understands the information related to those monitored. The video data can be used as a forensic tool for after-crime inspection. Hence, these systems ensure high level of security at public places which is usually an extremely complex challenge hence video surveillance systems have become more popular. Video surveillance systems have wide range of applications like traffic monitoring [1] and human activity understanding [2]. Presently, the surveillance systems used requires constant human vigilance. However, the humans have limited abilities to perform in real-time which reduce the actual usability of such surveillance systems [3-5]. Also such surveillance systems are not reliable for real time threat detection. From the perspective of forensic investigation, a large amount of video data obtained from surveillance video tapes need to be analyzed and this task is very tedious and

error prone for a human investigator [6-9]. To overcome this drawback, automatic video analysis system is developed that continuously monitors a given situation and reacts in real-time [10]. The proposed system has an ability to sense intrusion and respond to it in real time. The location recognition technology has been so far studied and developed mainly with single interesting object for tracking human and things, mobile asset management, security and etc. Such location recognition technology provides accuracy in interior space within two to three meters without obstacles, but with obstacles, larger range of error is appeared, thus research for recognition of more accurate interior location has conducted. Not only that, interest in location recognition of multiple objects in environment is increased, not in environment with single object location recognition. The requirement to get valid images is very important at the video security surveillance system. Thus, research in video surveillance systems are multidisciplinary field associated to image analyzing and processing, pattern recognition, signal processing, embedded computing, and communication. In this paper presents the working of remote controlled mechatronics system.

2. LITERATURE SURVEY

D. Koller, K. Daniilidis, H. H. Nagel is discussed in Model-based object tracking in monocular sequences of



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"HYBRID POWER GENERATION USING SOLAR PANEL AND WIND MILL"

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Abstract: Now a day's electricity is most needed facility for the human being. All the conventional energy resources are depleting day by day. So we have to shift from conventional to non-conventional energy resources. In this the combination of two energy resources is takes place i.e. wind and solar energy.

In this proposed system, we have designed a Advance Hybrid Inverter System. This System uses two Sources to charge battery.

We see many people using inverters these days which proves that its necessity has been increased in the current years. A Hybrid inverter is similar to a normal electric inverter but uses the energy from two different sources to charge battery such as Solar and Wind Energy.

An inverter helps in converting the direct current into alternate current with the help of solar power or Wind mill Power. Direct power is that power which runs in one direction inside the circuit and helps in supplying current when there is no electricity. Direct currents are used for small appliance like mobile e phones, MP3 players, IPod etc. where there is power stored in the form of battery. In case of alternative current it is the power that runs back and forth inside the circuit. The alternate power is generally used for house hold appliances. An inverter helps devices that run on DC power to run in AC power so that the user makes use of the AC power. If you are thinking why to use solar inverter instead of the normal electric one then it is because the solar one makes use of the solar energy which is available in abundant from the Sun and is clean and pollution free

1. INTRODUCTION

Hybrid Power Generation System using Wind and Solar Energy

Hybrid energy system is the combination of two energy sources for giving power to the load. In other word it can defined as "Energy system which is fabricated or designed to extract power by using two energy sources is called as the hybrid energy system." Hybrid energy system has good reliability, efficiency, less emission, and lower cost. In this proposed system solar and wind power is used for generating power. Solar and wind has good advantages than other than any other non-conventional energy sources. Both the energy sources have greater availability in all areas. It needs lower cost. There is no need to find special location to install this system.

A. Solar Energy

Solar energy is that energy which is gets by the radiation of the sun. Solar energy is present on the earth continuously and in abundant manner. Solar energy is freely available. It doesn't produce any gases that mean it is pollution free. It is affordable in cost. It has low maintenance cost. Only problem with solar system it cannot produce energy in bad weather condition. But it has greater efficiency than other energy sources. It only needs initial investment. It has long life span and has lower emission.

B. Wind Energy

Wind energy is the energy which is extracted from wind. For extraction we use wind mill. Ii is renewable energy sources. The wind energy needs less cost for generation of electricity. Maintenance cost is also less for wind energy system. Wind energy is present almost 24 hours of the day. It has less emission.

Initial cost is also less of the system. Generation of electricity from wind is depend upon the speed of wind flowing

A Hybrid energy system, or hybrid power, usually consists of two or more renewable energy sources used together to provide increased system efficiency as well as greater balance in energy supply.

The key to cost reductions of this order is, of course, the right sort of support for innovation and development - something that has been lacking for the past and, arguably, is still only patchy at present. Research and development efforts in solar, wind, and other renewable energy technologies are required to continue for:

- improving their performance,
- establishing techniques for accurately predicting their output
- reliably integrating them with other conventional generating sources

Advantages of Hybrid System

According to many renewable energy experts, a small "hybrid" electric system that combines home wind

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MONITORING OF INDUSTRIAL PARAMETERSBY USING ZIGBEE

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Abstract-CPS provides the necessary technological basis to facilitate the realization and corresponding automation of large-scale complex system, such as smart grids, smart buildings, smart transportation, smart healthcare and smart manufacturing, among other applications areas. The cps era is in need of solutions that will support it at device, system, and infrastructure and application level. This includes the whole lifecycle from cradle-to-grave of its cps components and services. This is a scientific, technical, industrial and social challenge that includes a multi-disciplinary engineering approach and the confluence and sometimes fusion of heterogeneous Communication, information and control/automation technologies. This work has presented an overview of key aspects related to industrial cps and key approaches and technologies associated with their engineering and implementation related to industrial automation, such as mas, soa and cloud systems. Based on the results of four European innovation projects (i.e. socrades, imc-aesop, grace and arum), the progress in the domain has been reported. subsequently, key challenges for the understanding and application of industrial automation based on cps technologies have been identified and some considerations on the difficulties and time horizon are discussed, with the aim to support further the increasing of the current technology readiness levels and lead to a broad utilization of cps-based systems and infrastructures in commercial industrial automation systems

1. TECHNOLOGYUSED

ZIGBEE

Zigbee modules feature a UART interface, which allows any microcontroller or microprocessor to immediately use the services of the Zigbee protocol. All a Zigbee hardware designer has to do in this as is ensure that the host's serial port logic levels are compatible with the XBee's 2.8- to3.4-V logic levels. The logic level conversion can be performed using either a standard RS-232 IC or logic level translators such as the 74LVTH125 when the host is directly connected to the XBeeUART.The below table gives the pin description of transceiver.

ZigbeeApplications

1. Manufacturing / Machining
2. Food
3. Metals
4. Power
5. Mining
6. Petrochemical / Chemical

Embedded Systems

Examples of Embedded Systems :

- Avionics, such as inertial guidance systems, flight control hardware/software and other integrated systems in aircraft and missiles
- Cellular telephones and telephone switches
- Engine controllers and antilock brake controllers for automobiles
- Home automation products, such as thermostats, air conditioners, sprinklers, and security monitoring systems
- Handheld calculators

ARDUINO UNO (ATMEGA328P)

The Arduino Uno is a microcontroller board based on the ATmega328 (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. The Uno differs from all preceding boards in that it does not use the FTDI USB-to-serial driver chip

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SMART ENERGY MATER USING GSM TECHNOLOGY

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Abstract-The advantages of remote meter reading and spot billing are well recognized by the various electricity boards in the country today. Not only does spot billing lead to much greater revenue-collection efficiency and better decision systems, it also brings intangibles like transparency and better customer service to the system. Though there exist various devices in the market that aid in spot-meter billing, none has become either an industry standard or widely prevalent. The reasons range from limited computing power and lack of customizability to high price and absence of local technical support.

Each consumer is provided with a unique energy meter, which is having a GSM modem, microcontroller unit and a display unit internally. A SIM card is required for communication. Whenever this system receives an SMS from electricity board, it calculates the number of units consumed and billing amount on slab rate, displays on LCD for user interface. This system also sends the same message to the electricity board for departmental information and database.

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac out put of secondary of 230/12V step down transformer.

1. INTRODUCTION

In the present system, Electricity bills are generated manually by personnel from the Electricity board. The Electricity board staff visit houses and commercial establishments, once a month and record the electricity consumption. Then based on the tariff the bill payment is done by the consumer.

The aim of the project is to automate the postpaid billing of energy meter. Wireless Control of Energy Meter is useful for billing purpose in Electricity board. Instead of going to every house & taking the readings, in this project by just sending a SMS electricity board can receive the readings of the house.

The amount of consumption is stored in memory authority as SMS. An SMS can be sent through Modem to that particular number which is assigned by these authorities and wait for the response. On other end the modem will receive the data in the form of a command and informs the controller to do the readings. After the readings the controller will send data to the modem.

Modem, in turn sends data to the other end. In the office the GSM unit will receive the data and software will calculate the total consumption. The number assigned by the authorities is unique. Using GSM we can get the response very fast due to which time is saved.

2. TECHNOLOGY USED

Artificial intelligence

Artificial Intelligence is: the field of study that describe the capability of machine learning just like humans and the ability to respond to certain behaviors also known as (A.I.). The need of Artificial Intelligence is increasing every day. Since AI was first introduced to the market, it has been the reason of the quick change in technology and business fields.

3. EMBEDDED SYSTEMS

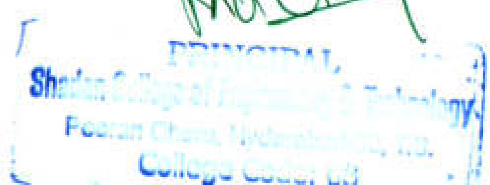
An embedded system is a system which is going to do a predefined specified task is the embedded system and is even defined as combination of both software and hardware. A general-purpose definition of embedded systems is that they are devices used to control, monitor or assist the operation of equipment, machinery or plant. "Embedded" reflects the fact that they are an integral part of the system. At the other extreme a general-purpose computer may be used to control the operation of a large complex processing plant, and its presence will be obvious.

Applications of embedded systems

- Manufacturing and process control
- Construction industry
- Transport
- Buildings and premises
- Domestic service

Three basic characteristics differentiate microprocessors:

- **Instruction set**: The set of instructions that the microprocessor can execute.



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ENERGY THEFT DETECTION WITH DIGITAL PROTECTIVE RELAY DEPLOYMENT

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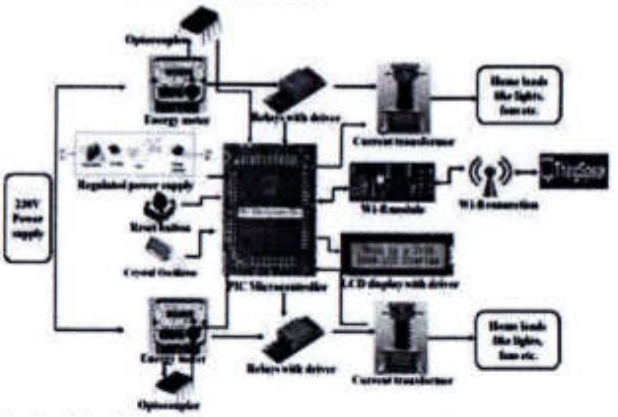
ABSTRACT: The main purpose of the project is to develop a system to detect the power theft in multi-tenantand send the data to thingspeak through internet.The PIC microcontroller controls the whole project. The project main aim to control thepower theft and supply power to multi tenants through one supply. Here to themicro controller wo tenants areconnected.Interfacing the Wi-Fi module, liquid crystal display, buzzer, and meter pulse using PICmicrocontroller, here providing 5v to activate and then it displays the IP address which needsto connect the Wi-Fi module to send the data to processor or controller.An optocoupler-isolated power supply is often the safest and most practical way to go when it comes toperformance and protection, it is connected to energy meter. Energy meter will read the pulseto calculate the amount of consumed power. Loadtakes5vpowerfromthepowertransformer.Thedatawill besenttothingspeak through wi-fi module connected to microcontroller. These smart meters will betwo blocks corresponding to multiple tenants and those respective meter readings will beuploadedto thingspeak through cloud.

1. PROBLEM DEFINITION

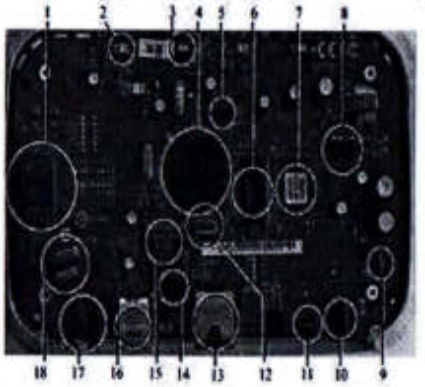
An embedded system is a combination of software and hardware to perform dedicated task.Someofthemaindevicesusedinembeddedproductsare MicroprocessorsandMicrocontrollers.Microprocessorsare commonlyreferredtoas general purpose processors as they simply accept the inputs, process it and give the output. In contrast, a microcontroller notonlyacceptsthedataasinputsbutalsomanipulatesit,interfacesthedatawithvariousdevices,controlsthedataandthusfinallygivestheresult.Theproject"EnergyTheftDetection in Multi-Tenant Data Centers with Digital Protective Relay Deployment" usingPIC16F73 Microcontroller is an exclusive project that can detect the power theft in multi-tenantand send the data to thingspeak through internet.

2. BLOCK DIAGRAM



EmbeddedSystems

An embedded system is a computer system designed to perform one or a few dedicatedfunctions often with real-time computing constraints. It is embedded as part of a completedeviceoftenincludinghardwareandmechanicalparts.Bycontrast,ageneral-purposecomputer, such as a personal computer (PC), is designed to be flexible and to meet a widerangeof end-user needs.Embedded systemscontrol manydevices incommon usetoday.



3. HARDWARE DESCRIPTION

MicrocontrollerPIC16F73

The PIC16F73 CMOS FLASH-based 8-bit microcontroller is upward compatible with

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DESIGN & IMPLEMENTATION OF CONVOLUTION NEURAL NETWORKS

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Abstract- Full end-to-end text recognition in natural images is a challenging problem that has received much atten- tion recently. Traditional systems in this area have re- lied on elaborate models incorporating carefully hand engineered features or large amounts of prior knowl- edge. In this paper, we take another method and combine the representative power of large, multilayer neural networks together with recent developments in unsupervised feature learning, which allows us to use a common framework to train highly-accurate text detec- tor and character recognizer modules. Then, using only simple off-the-shelf methods, we integrate these two modules into a full end-to-end, lexicon-driven, scene text recognition system that achieves state-of-the-art performance on standard benchmarks, and popular streets

1 INTRODUCTION

Extracting textual information from natural images is a challenging problem with many practical applica- tions. Unlike character recognition for scanned docu- ments, recognizing text in unconstrained images is com- plicated by a wide range of variations in backgrounds, textures, fonts, and lighting conditions. As a result, many text detection and recognition systems rely on cleverly hand-engineered features [5, 4, 14] to repre- sent the underlying data. Sophisticated models such as conditional random fields [11, 19] or pictorial structures [18] are also often required to combine the raw detec- tion/recognition outputs into a complete system.

In this paper, we attack the problem from a differ- ent angle. For low-level data representation, we use an unsupervised feature learning algorithm that can auto- matically extract features from the given data. Such algorithms have enjoyed numerous successes in many

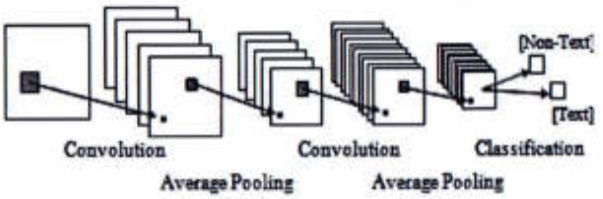

Figure 1. CNN used for text detection.

related fields such as visual recognition [3] and action recognition [7]. In the case of text recognition, the system in [2] achieves competitive results in both text detection and character recognition using a simple and scalable feature learning architecture incorporating very little hand-engineering and prior knowledge.

We integrate these learned features into a large, discriminatively-trained convolutional neural network (CNN). CNNs have enjoyed many successes in simi- lar problems such as handwriting recognition [8], visual object recognition [1], and character recognition [16]. By leveraging the representational power of these net- works, we are able to train highly accurate text detection and character recognition modules. Using these mod- ules, we can build an end-to-end system with only sim- ple post-processing techniques like non-maximal sup- pression (NMS)[13] and beam search [15]. Despite its simplicity, our system achieves state-of-the-art perfor- mance on standard test sets.

2 LEARNING ARCHITECTURE

In this section, we describe our text detector and character recognizer modules, which are the essential building blocks of our full end-to-end system. Given a 32-by-32 pixel window, the detector decides whether the window contains a centered character. Similarly, the recognizer decides which of 62 characters (26 upper- case, 26 lowercase letters, and 10 digits) is in the win- dow. As described at length in Section 3, we slide the

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TRUST MANAGEMENT SCHEME FOR CLUSTERED WIRELESS SENSOR NETWORKS

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Abstract— In this work, we propose a new lightweight Group- based Trust Management Scheme (GTMS) for wireless sensor networks, which employs clustering. Our approach reduces the cost of trust evaluation. Also, theoretical as well as simulation results show that our scheme demands less memory, energy, and communication overheads as compared to the current state-of-the-art trust management schemes and it is more suitable for large-scale sensor networks. Traditional trust management schemes developed for wired and wireless ad hoc networks are not well suited for sensor networks due to their higher consumption of resources such as memory and power. Furthermore, GTMS also enables us to detect and prevent malicious, selfish, and faulty nodes.
Index Terms—Trust evaluation, trust modeling, trust management, security, sensor networks.

1 INTRODUCTION

RUST in general is the level of confidence in a person or a thing. Various engineering models such as security, usability, reliability, availability, safety, and privacy models incorporate some limited aspects of trust with different meanings [1]. For example, in sensor network security, trust is a level of assurance about a key's authenticity that would be provided by some centralized trusted body to the sensor node (SN) [2], [3]. In wireless ad hoc and sensor network reliability, trust is used as a measure of node's competence in providing required service [4], [5], [6], [7]. In general, establishing trust in a network gives many benefits such as the following:

1. Trust solves the problem of providing correspond- ing access control based on judging the quality of SNs and their services. This problem cannot be solved through traditional security mechanisms [8].
2. Trust solves the problem of providing reliable routing paths that do not contain any malicious, selfish, or faulty node(s) [9], [10].
3. Trust makes the traditional security services more robust and reliable by ensuring that all the communicating nodes are trusted during authentication, authorization, or key management [11].

For Wireless Sensor Networks (WSNs), we visualize that trust management is a cooperative business rather than an individual task due to the use of clustering schemes such as LEACH [12], PEGASIS [13], TEEN [14], and HEED [15] in real-world scenarios. Moreover, SNs can also be deployed in the form of groups [16], which are willing to collaborate with each other in order to process, aggregate, and forward collected data [17]. This highlights the fact that these clustering schemes and group deployments enable SNs to fulfill their responsibilities in a cooperative manner rather than individually. Therefore, establishing and managing trust in a cooperative manner in clustering environment provides many advantages. Such as, within the cluster, it helps in the selection of trusted cluster head by the member nodes. Similarly, the cluster head will be able to detect faulty or malicious node(s). In case of multihop clustering [15], [18], it helps to select trusted en route nodes through which a node can send data to the cluster head. During intercluster communication, trust management helps to select trusted en route gateway nodes or other trusted cluster heads through which the sender node will forward data to the base station (BS).

A number of trust management schemes have been proposed for peer-to-peer networks [19], [20], [21] and ad hoc networks [22], [5], [23]. To the best of our knowl- edge, very few comprehensive trust management schemes (e.g., Reputation-based Framework for Sensor Networks (RFSN) [24], Agent-based Trust and Reputation Manage- ment (ATRM) [25], and Parameterized and Localized trUst management Scheme (PLUS) [26]) have been proposed for sensor networks. Although, there are some other works available in the literature, e.g., [6], [7], [27], [28], and so forth, that discuss trust but not in much detail. Within such comprehensive works, only ATRM [25] scheme is specifi- cally developed for the clustered WSNs. However, this and other schemes suffer from various

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DESIGN & IMPLEMENTATION OF WIRELESS SENSOR NETWORKS

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Abstract— Sensing any change in the physical environment and delivering this real time information about the system to the remote station for analysis has created many applications. With the research and development in the science and technology new wired and wireless technologies for sensing have been developed with time. This paper presents an information these technologies used for wired and wireless sensor networks. For wireless sensor network some features of zigbee, enOcean, wavenis, Z-wave, wifi and Bluetooth are discussed in this paper. Brief discussion of different applications of the sensor networks is also presented.
Keywords—applications; technologies; wired sensor network; wireless sensor network

1. INTRODUCTION

Sensor network is a group of nodes which gathers data according to their specialty. The node contains the power source, microprocessor, external memory, sensors, analog to digital converter and transceivers. Microprocessors in the nodes perform the necessary operation on data prior to send it to the remote station. Microprocessor has limited internal memory. So the external memory is also provided in the node to store the sensing data. Sensors are the physical devices which collects the environmental data as the analog signal. Then this data is converted into the digital with the help of analog to digital converter present in the node. Transceiver is the device in the node which receives the control signal from the sender and sends the operator data from the sensors to the remote station.

Power source provide the energy (electricity) to the node for its operation. This power source as a battery for the wireless sensor nodes or through cable connection for the wired sensor or the power can be generated with the some energy harvesting modes like solar cell etc. Sensor networks further can be divided into two types:

1. Wired sensor network

In the wired sensor networks power source is wired. The power is continuously supplied to the node. Moreover the data from /to transceiver is send/received using wired

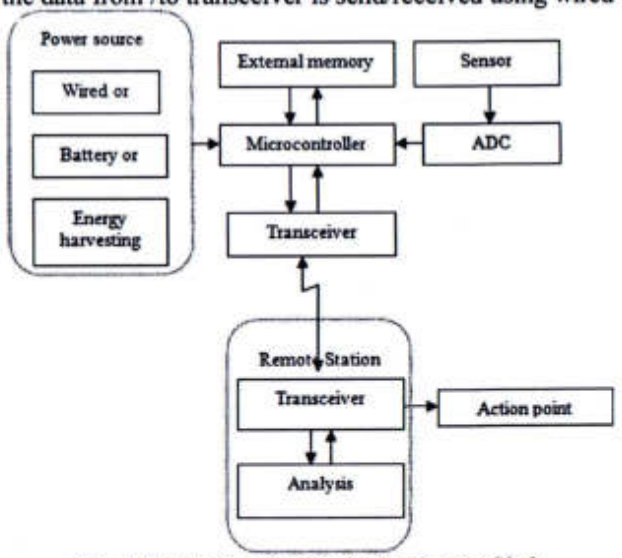

Fig. 1 Block Diagram of wireless Sensor Node

communication channel. These sensor networks are highly reliable and their applications are limited. Moreover they have mesh network of the wires connecting to the network which makes them complex to handle and increase their cost.

2. Wireless sensor networks

In wireless sensor network the nodes are not connected with any wire. Transceivers wirelessly send /receive the data and control signals to the control center or from the control center. In wireless sensor networks communication channel is the frequency spectrum. Moreover the power source in these nodes is the battery. As these nodes are implemented in very far areas, batteries are changed after a long time. Therefore energy consumption issue is the main research topic for wireless sensor networks. Now the data gathered at the field location is transferred to the remote station through the transceiver by the wireless channel. There data is

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SEPTIC: DETECTING INJECTION ATTACKS AND VULNERABILITIES INSIDE THE DBMS

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ABSTRACT :- Databases continue to be the most commonly used backend storage in enterprises, but they are often integrated with vulnerable applications, such as web frontends, which allow injection attacks to be performed. The effectiveness of such attacks stems from a semantic mismatch between how SQL queries are believed to be executed and the actual way in which databases process them. This leads to subtle vulnerabilities in the way input validation is done in applications. In this paper, we propose SEPTIC, a mechanism for DBMS attack prevention, which can also assist on the identification of the vulnerabilities in the applications. The mechanism was implemented in MySQL and evaluated experimentally with various applications and alternative protection approaches. Our results show no false negatives and no false positives with SEPTIC, on the contrary to other solutions. They also show that SEPTIC introduces a low performance overhead ,in the order of2.2%

1. INTRODUCTION

Web applications have been around for more than two decades and are now an important component of the economy, as they often serve as an interface to various business related activities. Databases continue to be the most commonly used backend storage in enterprises, and they are often integrated with web applications. However, web applications can have vulnerabilities, allowing the data stored in the databases to be compromised.

SQL injection attacks (SQLI), for example, continue to rise in number and severity. Commonly used defenses are validation functions, web application firewalls (WAFs), and prepared statements. The first two inspect web application inputs and sanitize those that are considered dangerous, whereas the third bounds inputs to placeholders in the SQL queries.1 Other anti-SQLI mechanisms have been developed but less adopted. Some of these monitor and block SQL queries that deviate from specific models, but the inspection is made without full knowledge about how they are processed by the DBMS. In all these cases, developers and system administrators make assumptions about how the server-side scripting language and the DBMS work and interact, which sometimes are simplistic, whereas in others are blatantlywrong.

For example, programmers usually assume that the PHP function mysql_real_escape_string always effectively sanitizes inputs and prevents SQLI attacks, which is not true. Also, they often assume that values retrieved from a database do not need to be validated before being inserted in a query, leading to second-order injection vulnerabilities. This is visible when, for instance, the code admin' - - is sanitized by escaping the prime character before sending it to the database, but the DBMS unsanitizes it before actually storing it. Later, the code is retrieved from the database and used unsanitized in some query, carrying out the attack.

2. LITERATURE REVIEW

SQL injection attacks are one of the topmost threats for applications written for the Web. These attacks are launched through specially crafted user input on web applications that use low level string operations to construct SQL queries. In this work, we exhibit a novel and powerful scheme for automatically transforming web applications to render them safe against all SQL injection attacks. A characteristic diagnostic feature of SQL injection attacks is that they change the intended structure of queries issued. Our technique for detecting SQL injection is to dynamically mine the programmer-intended query structure on any input, and to detect attacks by comparing them against the intended query structure. We propose a simple and novel mechanism, called Candid, for mining programmer intended queries by dynamically evaluating runs over benign candidate inputs. This mechanism is theoretically well founded and is based on inferring intended queries by considering the

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DYNAMIC CLOUD RESOURCE ALLOCATION CONSIDERING DEMAND UNCERTAINITY

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ABSTRACT :- Cloud computing provisions scalable resources for high performance industrial applications. Cloud providers usually offer two types of usage plans: reserved and on- demand. Reserved plans offer cheaper resources for long-term contracts while on-demand plans are available for short or long periods but are more expensive. To satisfy incoming user demands with reasonable costs, cloud resources should be allocated efficiently. Most existing works focus on either cheaper solution with reserved resources that may lead to under-provisioning or over-provisioning, or costly solutions with on-demand resources. Since inefficiency of allocating cloud resources can cause huge provisioning costs and fluctuation in cloud demand, resource allocation becomes a highly challenging problem. In this paper, we propose a hybrid method to allocate cloud resources according to the dynamic user demands. This method is developed as a two-phase algorithm that consists of reservation and dynamic provision phases. In this way, we minimize the total deployment cost by formulating each phase as an optimization problem while satisfying quality of service. Due to the uncertain nature of cloud demands, we develop a stochastic optimization approach by modeling user demands as random variables. Our algorithm is evaluated using different experiments and the results show its efficiency in dynamically allocating cloud resources.

1. INTRODUCTION

Cloud computing is a popular networking paradigm that provides resources via Internet Cloud computing helps web service providers reduce hardware infrastructure expenses for deploying their applications. In addition, easy resource management and fast response time are the other interesting characteristics that bring the attentions to the cloud computing. In this paper, the focus is on cloud Infrastructure-as-a-Service (IaaS), where infrastructure resources such as network, computing, database, etc. are offered by cloud providers.

Cloud providers usually offer two types of IaaS resource provisioning plans, reserved and on-demand plans, to web service providers that have different charging schemes based on the resource usage. The reserved plans are often offered for relatively long-term contracts. Using reserved plans, web service providers can get discount rateson reserved resources and pay once for the contract time period (e.g. one-year contract or three-year contract for Amazon EC2). Through on-demand plans, cloud providers offer more flexible resource pricing strategies. On-demand plans charge cloud web service providers on a pay-as-you go basis and enable them to start or terminate instances at any moment according to their needs without paying any penalty. However, comparing the costsofresourcesperunitoftime,on-demandresourcesareoftenmoreexpensivethanthe reservedones.

With the reserved plans, web service providers reserve instances in advance for long-term contracts. Due to ignorance of demand uncertainty in the reserved plans, resourceprovisioningonlywiththereservedinstancesisacha llengingtask.Thepurchased resources may not be enough to handle the demands all the time that leads to under provisioning. This may result in failure in meeting web service providers' Quality of Service (QoS) criteria which is a crucial concern for both cloud providers and webservice providers in presence of the uncertainty in the demands. On the other hand, over-provisioningmayhappeniftheallocatedresourcesareexcess ivetohadleactualarrived

2. LITERATURE REVIEW

A large number of geo-distributed data centers begin to surge in the era of data deluge and information explosion. To meet the growing demand in massive data processing, the infrastructure of future data centers must be energy-efficient and sustainable. Facing this challenge, a systematic framework is put forth in this paper to integrate renewable energy sources (RES), distributed storage units, cooling facilities, as well as dynamic pricing into the workload and energy

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A SECURITY MODEL FOR THE ENHANCEMENT OF DATAPRIVACYI NCLOUDCOMPUTING

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Abstract-As we all are aware that internet acts as a depository to store cyberspace data and provideas a service to its user. Cloud computing is a technology by internet, where a large amountof data being pooled by different users is stored. The data being stored comes from variousorganizations, individuals, and communities etc. Thus, security and privacy of data is ofutmostimportancetoallofitsusersregardlessofthenatureo fthedatabeingstored.Inthisresearch paper the use of multiple encryption technique outlines the importance of datasecurityandprivacyprotection.Also,whatnatureofattac ksandissuesmightarisethatmaycorrupt the data; therefore, it is essential to apply effective encryption methods to increasedatasecurity.

Keywords: Data Security, Privacy, Cloud Computing, Cyberspace, Data Encryption, RSA, Cryptography.

1. INTRODUCTION

Cloud computing is a very vast and rapidly emerging technology. It may have different meanings for different individuals but the common characteristic that brings different individuals together is the high availability of data at any time and at any place. Cloud computing not only reduces the role of local computers but also makes computing more integrated. In addition, Software as a Service is a software delivery model in which a third party provides host applications to the organizations and makes them accessible over the internet. Also, SaaS reduces the need for organizations to individually install and run applications on their own computers. This property of SaaS eliminates the cost of installation and support, software licensing, maintenance, and hardware installation.

2. TECHNOLOGY USED

ENHANCEDRSA ALGORITHM:

RSA algorithm is asymmetric cryptography algorithm. Asymmetric actually means that it works on two different keys i.e. Public Key and Private Key.As the name describes that the Public Key is given to everyone and Private key is kept private. The idea of RSA is based on the fact that it is difficult to factorize a large integer. The public key consists of two numbers where one number is multiplication of two large prime numbers. And private key is also derived from the same two prime numbers. So if somebody can factorize the large number, the private key is compromised. Therefore encryption strength totally lies on the key size and if we double or triple the key size, the strength of encryption increases exponentially. RSA keys can be typically 1024 or 2048 bits long, but experts believe that 1024 bit keys could be broken in the near future. But till now it seems to be an infeasible task.

2.0. Existing System

- InExistingsystem,thedataishandledonly form one server.
- Ifmultipleserversareaccessingthedatafrommultipleclie ntsthenwearegettingdenialofservice,which can befurtherimproved

DISADVANTAGE OF EXISTING SYSTEM

- LessSecurity
- Pronetokeyword guessingattacks

3. LITERATURE SURVEY:

Title: Data Security and Privacy Issues in Cloud Computing
Author: Dean Chen, Hong Zao.
Year: 2012
Description:
Cloud computing turned into the most predominant innovation in recent years. This innovative technology provides services to the customers for software and hardware. One can state that distributed computing can blast the portable business. Cloud computing is a basic technology for sharing of resources on the internet. Virtualization is a central innovation for empowering cloud resource sharing. Confidentiality of data storage is the essential alarm for assurance of data security so cloud computing does not provide robust data privacy. All details of data migration to cloud remain hidden from

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PROFIT MAXIMIZATION FOR CLOUD BROKERS IN CLOUD COMPUTING

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Abstract-A long with the development of cloud computing,moreapplicationsaremigratedintothecloud. Animportantfeatureofcloudcomputing is pay-as-you-go. However, most users always should pay morethan their actual usage due to the one-hour billing cycle. In addition, mostcloud service providers provide a certain discount for long-term users, butshort-term users with small computing demands cannot enjoy this discount.To reduce the cost of cloud users, we introduce a new role, which is cloudbroker. A cloud broker is an intermediary agent between cloud providers andcloud users. It rents a number of reserved VMs from cloud providers with agood price and offers them to users on an on-demand basis at a cheaper pricethan that provided by cloud providers. Besides, the cloud broker adopts ashorter billing cycle compared with cloud providers. By doing this, the cloudbroker can reduce a great amount of cost for user. In addition to reduce theuser cost, the cloud broker also could earn the difference in prices betweenon-demand and reserved VMs. In this paper, we focus on how to configure acloud broker and how to price its VMs such that its profit can be maximizedon the premise of saving costs for users. In this paper, we firstly give asynthetically analysisonall theaffectingfactors,anddefineanoptimalmulti server configuration and VM pricing problem which is modeled as aprofit maximization problem. Secondly, combining the partial derivative andbisectionsearchmethod,weproposeaheuristicmethodto solvetheoptimization problem. The near-optimal solutions can be used to guide theconfiguration and VM pricing of the cloud broker. Moreover, a series ofcomparisonsaregivenwhichshowthatacloudbrokercansa veaconsiderablecostforusers.

Keywords:Cloud Computing, Cloud Brokers, Discount, Profit, Price, Cost Virtual Machine.

1. INTRODUCTION

More and more cloud providers have jumped on the cloud bandwagon, and they centrallymanage a variety of resources such as hardware and software and deliver them over theinternet in the form of services to customers on demand. Thanks to unique propertiessuch as elasticity, flexibility, apparently unlimited computational power, and pay-as-you-use pricing model,cloudcomputing canreduce the requirementof clientsfor largecapital outlays for hardware necessary to deploy service and the human expenses tooperate it. Hence, an increasing number of clients are transferring their business to thecloud. One important feature of cloud computing is pay-as you- use ,which contains twomeanings. First, according to the customer resource demand such as CPU, memory, etc.,the physical machines are dynamically segmented using virtualization technologies andprovidedtocustomersintheformofvirtualmachines(VMs),andcustomerspayaccording to the amount of resources they actually consumed. Second, the VMs can bedynamically allocated and de-allocated at any time, and customers should pay based onhow long the resources are actually used. Nevertheless, the pay-as-you-use pricing modelis presently only conceptual due to the extreme complexity in monitoring and auditingresource usage and cloud providers usually adopt an hourly billing scheme; in otherwords, the Billing Time Unit (BTU) of the cloud providers is one hour, for instance,Amazon EC2. Therefore, the customers should pay for the resources by the hour even ifthey do not actually utilize the allocated resources in the whole billing horizon .This leadsto a waste of resources and raises the cost of customers to a certain degree. In addition,almost all cloud providers provide two main ways to pay for their instances: On-Demandand Reserved Instances .With On-Demand instances, users pay for compute capacity byper hour depending on which instances they run, and they are recommended for theapplicationswithshort-termworkloads.ReservedInstancesprovideuserswithasignificant discount (up to 75% in Amazon EC2) compared to On-Demand instancepricing, but customers should rent

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A RESUME EVALUATION SYSTEM BASED ON TEXT MINING

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ABSTRACT:This study explored the application of interview robots onrecruitment process. By adopting techniques including webcrawling, text mining, and natural language processing, this studydeveloped an effective system that matches job candidates withrecruiters. The designed system analyzed electronic résumés inTraditional Chinese, on which the words were graded according tothe job market on the Internet and implemented with techniquesrelated to big data. The results demonstrated that the designedsystem identified the current demand on talent-seeking and quicklypresented candidate rankings for a specific position, therebyfulfilling the needs of both job-hunting candidates and talent-seekingrecruiters.
Keywords: Text Mining, Web crawling, natural language, Job, Recruiters, Electronic resume.

1. INTRODUCTION

Artificial intelligence (AI) technology is developing rapidly and is quickly becoming apart of daily life. AI can be adopted to help people in the workplace. For example, AI canbe used to assist interviewers. Applying AI in interviews is advantageous because an AIinterviewerdoesnottreatinterviewees differentlybecause ofpersonal,mental,orphysicaltraits orother externalconditions, unlike humaninterviewers [1].

During interviews, interviewers tend to make unscientific or irrational decisions becauseof their subjective views and personal emotions; consequently, the opportunity to hiretalented individuals can be missed. Because hiring an excellent staff is critical for thesuccessofafirm,allenterprisesstrivetodiscoverandhirepeoplewithconsiderabletalent and potential. Additionally, when job applicants contact any human resources (HR)department or employer, they can generally recognize whether the company is concernedaboutfairlytreatingeachapplicant.Theperceived leveloffairnesscancreateanimpression, good or bad, of the company in the mind of an applicant. Such impressionscanleadtoacceptanceor rejectionof anofferof a second-round interview,andthusaffecttheopportunityforthecompanytorecruitandhiretopcandidates[2].Furthermore, candidates, including top candidates, can be affected by their physical andmentalstatusonthedateofinterview.Theycanbenervous andunderperformorexperience stage fright; consequently, they may be overlooked by interviewers despitetheir considerable abilities. Besides, a conventional interview is limited by time andlocation, leading to the waste of resources by employers and interview rejections bypotentialcandidates.

To solve this HR problem, businesses have begun to incorporate AI into HR tasks, givingrise to AI-based job matching. Gartner, a global research and advisory firm, indicated thatroughly 1.8 million jobs will be replaced by AI by 2020; however, AI will also create 2.3millionjobsthat expandthe labormarket [3].Similar tomajorpast laborrevolutions, AImayleadtotechnology-relatedunemployment,butitmayalsopromptindustrialtransformation.Althoughmillionsof low–midleveljobsmightbe replaced by AI, AIwill likely create more positions, including high-tech jobs, management positions, andevenentry-level and low-tech jobs of adifferent nature.

This study developed an AI-based interviewing system to reduce the loss of talent causedby the emotional reactions and subjectivity of interviewers when viewing résumés. Thedesigned system performs the function of résumé assessment and explores the personalitytraits of candidatesbyclassifying them into four dimensions of soft power, namelydominance, influence, steadiness, and compliance (DISC) after assessing the submittedelectronic résumés. This system also assesses three dimensions of competence, namelyeducationandexperience,skills,andpersonalitytraits,whichareindicatedbytheinformationcontainedinarésumé (e.g.,education,experience,specialties,andautobiography). The system examines the aforementioned data by

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FINGERPRINT IMAGE IDENTIFICATION FOR CRIME DETECTION

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ABSTRACT Fingerprint images in crime scene are important clues to solve serial cases. In this paper we present a complete crime scene fingerprint identification system using deep machine learning with Convolutional Neural Network (CNN). Images are acquired from crime scene using methods ranging from precision photography to complex physical and chemical processing techniques and saved as the database. The images collected from the crime scene are usually incomplete and hence difficult to categorize. Suitable enhancement methods are required for pre-processing the fingerprint images. Minutiae are extracted from the fingerprint images. The features of preprocessed data are fed into the CNN as input to train and test the network. The s2experimental results demonstrated on database using Open CV-Python shows high accuracy of 80% recognition an partial or full fingerprints in the criminal database.

Keywords: Crime scene images, Machine learning and Convolutional Neural Network.

1. INTRODUCTION

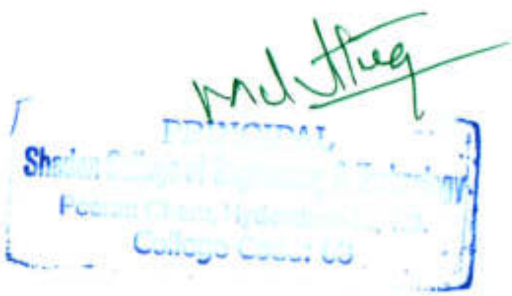
Fingerprints in the crime scene plays an important role to identify the criminal involved in the crime. Crime scene images (CSI) are images taken from the crime spot. When crime is occurred, the investigator takes both latent and patent sample of fingerprints left behind. The patent fingerprints are visible by naked eye, so they are simply photographed. But latent fingerprints [1] are invisible and these samples are more difficult to perceptible. These samples can be lifted through different techniques. In this paper it present a complete crime scene fingerprint identification system using deep machine learning with Convolutional Neural Network (CNN). Images are acquired from crime scene using methods ranging from precision photography to complex physical and chemical processing techniques and saved as the database.

2. LITERATURE REVIEW

Latent fingerprint has been used as evidence in the court of law for over 100 years. However, even today, a completely automated latent fingerprint system has not been achieved. Researchers have identified several important challenges in latent fingerprint recognition: 1) low information content; 2) presence of background noise and nonlinear ridge distortion; 3) need for an established scientific procedure for matching latent fingerprints; and 4) lack of publicly available latent fingerprint databases. The process of automatic latent fingerprint matching is divided into five definite stages, and this paper discusses the existing algorithms, limitations, and future research directions in each of the stages.

Fingerprint is the most well-known and successfully deployed biometric modality due to its ease of acquisition, established use, acceptance and high recognition rate (i.e., robustness). One form of fingerprint is called latent fingerprint. Despite its subtle appearance, latent fingerprint is commonly left all over the place unintentionally, including water tap, door knob, elevator button, and cup. To lift these latent fingerprints, the conventional approach involving the process of powdering and taping may physically damage the latent fingerprint. Therefore, a reduced contact method is desirable. This study focuses on latent fingerprints left on curved surfaces, such as water tap, door knob, and water flasks. The latent fingerprint is uncovered (i.e., made visible) by means of fuming, and the end product is captured by a camera. A geometrical compensation method, which takes the curvature of the surface as input, is formulated to geometrically correct (i.e., flatten) the image. The corrected image is further enhanced and sent for matching purpose. Experiments show that the application of the proposed geometrical compensation method is able to flatten the fingerprint image uncovered from a single directional curved surface and improve its matching score.

There are various types of applications for fingerprint recognition which is used for different purposes.



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AGENT-BASED APPROACHES FOR INTELLIGENT INTER CLOUD RESOURCE ALLOCATION

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ABSTRACT Whereas an Intercloud is an interconnected global "cloud of clouds" that enables each cloud to tap into resources of other clouds, interactions among Intercloud stakeholders are complex because Intercloud resources are distributed and controlled by different clouds. "Agent-based cloud computing" involves the construction of agents for bolstering discovery, matching, selection, composition, negotiation, scheduling, workflow, and monitoring of Intercloud resources. An agent is a computer system that is capable of making decisions independently and interacting with other agents through cooperation, coordination, and negotiation. Using an agent- based approach, characteristics associated with intelligent behaviors of agents such as interacting socially through cooperation, coordination, and negotiation can be built into clouds. This paper 1) discusses the significance and advantages of using an agent paradigm for Intercloud resource allocation, 2) reviews representative models of agent-based Intercloud resource allocation and provides a comparison among these models, 3) compares agent-based and non-agent-based approaches for task executions in multiple clouds, and 4) provides pointers to future directions.

Keywords: Agent-based cloud computing and agent-based Intercloud resource allocation.

1. INTRODUCTION

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources. One of the essential aspects of cloud computing is creating the illusion that "infinite" computing resources are available on demand. However, the resources held by a single cloud are usually limited and it may not be able to deal with a sudden surge in user demands. An Intercloud is an interconnected global "cloud of clouds" that enables cooperation among clouds. In an Intercloud, each cloud can tap into resources of other clouds when it does not have sufficient resources to satisfy consumers' requests. Interclouds are classified into *federated clouds* and *multi-clouds*. In a federated cloud, providers voluntarily interconnect their infrastructures to enable sharing and exchange of resources among themselves. Federated clouds are classified into *centralized* (resource allocation performed by a central entity) and *peer-to-peer* (no central authority) modes [4]. Clouds interconnected at the *same* layer (e.g., between two or more *IaaS*providers) is called a *horizontal federation* and clouds interconnected at *different* layers (e.g., between a *PaaS*provider and an *IaaS*provider) is called a *vertical federation* [6] (see Appendix A in supplemental material). In a multi-cloud, cloud providers do not necessarily volunteer to interconnect and share their infrastructures, and consumers are responsible for managing resources across multiple clouds.Even though a wide range of issues is involved when constructing an Intercloud, e.g., connectivity , interoperability, security, communication and others, this survey only focuses on reviewing and comparing agent-based approaches that specifically address the Intercloud resource allocation problem. Works addressing issues other than Intercloud resource allocation (e.g., interoperability and security) are outside the scope of this survey.

2. LITERATURE REVIEW

Cloud computing isa term applied tolarge, hosted data enters, usually geographically
distributed, which offer various computational services on aldquoutilityrdquo basis. Most
typically theconfiguration and provisioning ofthesedataenters, asfarasthe servicesforthesubscribers go, is highly automated, to the point of the service being delivered within seconds of the subscriber request. Additionally, the data enters typically use hypervisor based virtualization as a technique to deliver these services. The concept of a cloud operated by one service provider or enterprise interoperating with a clouds operated by another is a powerful idea. So far that is limited to use cases where code running on one cloud

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DESIGN OF SECURE AUTHENTICATED KEY MANAGEMENT PROTOCOL FOR CLOUD COMPUTING ENVIRONMENTS

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ABSTRACT :- With the development of distributed computing innovation as far as dependability and productivity, countless administrations have relocated to the cloud stage. To advantageous access to the administrations and ensure the security of correspondence in the general population arrange, three-factor Mutual Authentication and Key Agreement (MAKA) conventions for multi-server models increase wide consideration. Be that as it may, a large portion of the current three-factor MAKA conventions don't give a proper security evidence bringing about different assaults on the related conventions, or they have high calculation and correspondence costs. Furthermore, a large portion of the three-factor MAKA conventions haven't a unique disavowal component, which prompts malignant clients can not be speedily repudiated. To address these disadvantages, we propose a provable powerful revocable three-factor MAKA convention that accomplishes the client dynamic administration utilizing Schnorr marks and gives a proper security verification in the arbitrary prophet. Security investigation shows that our convention can satisfy different needs in the multi-server situations. Execution examination shows that the proposed plan is appropriate for figuring asset compelled savvy gadgets. The full form of the reproduction usage demonstrates the achievability of the convention.
Keywords :Mutual Authentication and Key Agreement

1. INTRODUCTION

In the ongoing decade, distributed computing innovation has been totally popularized. It can improve administration productivity as well as decrease costs. An ever increasing number of organizations are putting their administrations on the cloud stage for improvement, the board and upkeep. This not just decreases the neighborhood support trouble for these ventures, yet in addition gives bound together security and activity the board for all administrations on the outsider cloud stage, as appeared. Albeit outsider cloud stages have all the more dominant innovations and increasingly standard specialized determinations to guarantee that the servers run in a generally secure condition, clients and servers convey in people in general system. Subsequently, verification and key understanding are basic for the correspondence security. The utilization of shared confirmation and key understanding (MAKA) conventions keep aggressors from manhandling server assets, yet in addition avert malignant assailants acting like the server to get the client's data.

Along these lines, the MAKA conventions have been widely contemplated since Lamport proposed a secret phrase based validation convention. Prior MAKA conventions are intended for single-server design. As Internet clients develop exponentially, the quantity of cloud servers rendering various administrations has likewise developed altogether. For the single-server design, it is hard for clients to keep up an assortment of passwords for every server. To improve client experience, numerous researchers propose progressively adaptable MAKA conventions for multi-server conditions. Joined with the bound together administration highlights of the cloud stage, such conventions can be helpfully applied. The conventions for multi-server designs model clients and cloud servers just need to enlist in the enrollment focus (RC) to common verification and key understanding. In the multi-server conditions, the MAKA conventions can be additionally partitioned into two classes, two-factor MAKA conventions, to be specific personality, secret key, and three-factor MAKA conventions, in particular character, secret phrase, biometrics. The works have indicated that the secret word based MAKA conventions experience the ill effects of a few assaults, for example, speculating secret phrase assault.The target of this undertaking is to improve client experience, numerous researchers propose progressively adaptable MAKA

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BLOCKCHAIN BASED PUBLIC INTEGRITY VERIFICATION FOR CLOUD STORAGE AGAINST PROCRASTINATING AUDITORS

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Abstract :-The deployment of cloud storage services has significant benefits in managing data forusers. However, it also causes many security concerns, and one of them is data integrity. Publicverificationtechniquescanenableauser toemployathird-partyauditortoverifythedataintegrityonbehalfofher/him,whereasexistingpublicverificationschemesarevulnerabletoprocrastinating auditors who may not perform verifications on time. Furthermore, most of publicverification schemes are constructed on the public key infrastructure (PKI), and thereby sufferfrom certificate management problem. In this paper, we propose the first certificateless publicverification scheme against procrastinating auditors (CPVPA) by using blockchain technology.The key idea is to require auditors to record each verification resultinto a blockchain as atransaction. Since transactions on the blockchain are time-sensitive, the verification can be time-stamped after the corresponding transaction is recorded into the blockchain, which enables usersto check whether auditors perform the verifications at the prescribed time. Moreover, CPVPA isbuilt on certificate less cryptography, and is free from the certificate management problem. Wepresentrigoroussecurityproofstodemonstratethesecurityofcpvpa,andconductacomprehensive performance evaluationtoshowthatCPVPAisefficient.

1. INTRODUCTION:-

The deployment of cloud storage services has significant benefits in managing data for users.However,it also causesmany security concerns,andone of themis dataintegrity.Publicverificationtechniquescanenableauser toemployathird-partyauditortoverifythedataintegrityonbehalfofher/him,whereasexistingpublicverificationschemesarevulnerabletoprocrastinating auditors who may not perform verifications on time. Furthermore, most of publicverification schemes are constructed on the public key infrastructure (PKI), and thereby sufferfrom certificate management problem. In this paper, we propose the first certificate less publicverification scheme against procrastinating auditors (CPVPA) by using blockchain technology.The key idea is to require auditors to record each verification result into a block chain as atransaction. Since transactions on the blockchain are time-sensitive, the verification can be time-stamped after the corresponding transaction is recorded into the block chain, which enables usersto check whether auditors perform the verifications at the prescribed time. Moreover, CPVPA isbuilt on certificate less cryptography, and is free from the certificate management problem. Wepresentrigoroussecurityproofstodemonstratethesecurityofcpvpa,andconductacomprehensive performance evaluationtoshowthatCPVPAisefficient.

2. EXISTING SYSTEM

In this paper, we have an existing system is the first certificateless public verification schemeagainstprocrastinatingauditors(CPVPA) byusingblockchaintechnology.CPVPAisbuiltonthecertificate less cryptography and avoids the certificate management problem. CPVPA, resistsmalicious auditors and procrastinating ones without introducing any trusted entity, where eachverification performed by the auditor is time-stamped by integrating it into a transaction of blockchain. The key idea is to require auditors to record each verification result into a blockchain as atransaction Since transactions on the blockchain are time-sensitive, the verification can be time-stamped after the corresponding transaction is recorded into the blockchain, which enables userstocheckwhetherauditors performthe verifications atthe prescribedtime.

Existing System Disadvantages:-

- Foreverytransactioninformationwillstoreinblock. Eachblockconnecttoanotherblocktheprocessofconnecting

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A HIERARCHICAL ATTENTION MODEL FOR SOCIAL CONTEXTUAL IMAGERECOMMENDATION

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ABSTRACT-Image based social networks are among the most popular social networking services in recent years. With tremendous images uploaded every day, understanding users' preferences on user-generated images and making recommendations have become an urgent need. In fact, many hybrid models have been proposed to fuse various kinds of side information (e.g., image visual representation, social network) and user-item historical behavior for enhancing recommendation performance. However, due to the unique characteristics of the user generated images in social image platforms, the previous studies failed to capture the complex aspects that influence users' preferences in a unified framework. Moreover, most of these hybrid models relied on predefined weights in combining different kinds of information, which usually resulted in suboptimal recommendation performance. To this end, in this paper, we develop a hierarchical attention model for social contextual image recommendation. In addition to basic latent user interest modeling in the popular matrix factorization based recommendation, we identify three key aspects (i.e., upload history, social influence, and owner admiration) that affect each user's latent preferences, where each aspect summarizes a contextual factor from the complex relationships between users and images. After that, we design a hierarchical attention network that naturally mirrors the hierarchical relationship (elements in each aspects level, and the aspect level) of users' latent interests with the identified key aspects. Specifically, by taking embeddings from state-of-the-art deep learning models that are tailored for each kind of data, the hierarchical attention network could learn to attend differently to more or less content. Finally, extensive experimental results on real-world datasets clearly show the superiority of our proposed model.

1. INTRODUCTION

There is an old saying "a picture is worth a thousand words". When it comes to social media, it turns out that visual images are growing much more popularity to attract users. Especially with the increasing adoption of smartphones, users could easily take qualified images and upload them to various social image platforms to share these visually appealing pictures with others. Many image-based social sharing services have emerged, such as Instagram1, Pinterest2, and Flickr3. With hundreds of millions of images uploaded every day, image recommendation has become an urgent need to deal with the image overload problem. By providing personalized image suggestions to each active user in image recommender system, users gain more satisfaction for platform prosperity. E.g., as reported by Pinterest, image recommendation powers over 40% of user engagement of this social platform.

Naturally, the standard recommendation algorithms provide a direct solution for the image recommendation task. For example, many classical latent factor based Collaborative Filtering (CF) algorithms in recommender systems could be applied to deal with user-image interaction matrix Successful as they are, the extreme data sparsity of the user-image interaction behaviourlimits the recommendation performance. On one hand, some recent works proposed to enhance recommendation performance with visual contents learned from a (pre-trained) deep neural network. On the other hand, as users perform image preferences in social platforms, some social based recommendation algorithms utilized the social influence among users to alleviate data sparsity for better recommendation . In summary, these studies partially solved the data sparsity issue of social-based image recommendation. Nevertheless, the problem of how to better exploit the unique characteristics of the social image platforms in a holistical way to enhance recommendation performance is still under explored.

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PREDICTION AND DIAGNOSIS OF HEART DISEASE PATIENTS USING DATA MINING TECHNIQUE

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ABSTRACT- We are living in a post modern era and there are tremendous changes happening to our daily routines which make an impact on our health positively and negatively. As a result of these changes various kind of diseases are enormously increased. Especially, heart disease has become more common these days. The life of people is at a risk. Variation in Blood pressure, sugar, pulse rate etc. can lead to cardiovascular diseases that include narrowed or blocked blood vessels. It may causes Heart failure, Aneurysm, Peripheral artery disease, Heart attack, Stroke and even sudden cardiac arrest. Many forms of heart disease can be detected or diagnosed with different medical tests by considering family medical history and other factors. But, the prediction of heart diseases without doing any medical tests is quite difficult. The aim of this project is to diagnose different heart diseases and to make all possible precautions to prevent at early stage itself with affordable rate. We follow 'Data mining' technique in which attributes are fed in to SVM, Random forest, KNN, and ANN classification Algorithms for the prediction of heart diseases. The preliminary readings and studies obtained from this technique is used to know the possibility of detecting heart diseases at early stage and can be completely cured by proper diagnosis.

1. INTRODUCTION

There are so many diseases which affect us badly and one among them is Heart disease. It is a serious disease since we often hear that most of the people die out of Heart diseases and other kinds of similar diseases relates to heart[1-3] It is observed by most of the medical scholars that at many times most of the heart patients might not survive heart attacks and they die with it. In this paper we would like to deal with the four classification techniques which is use to prediction of heart disease[4-6]. Namely SVM, Random forest, KNN, ANN. The studies have been done by evaluating the medical profiles of people who undergoes treatment in JMMC (Jubilee Mission Medical College) Thrissur, by categorizing their age, sex, pulse rate, blood pressure as well as fasting blood sugar Etc. we chose those categories since it is observed that heart diseases are mainly studied likewise.

We hope there is always prime in studying about heart diseases. Our research we try to the possibility of detecting the heart diseases at early stage. It can completely cure the disease by proper diagnosis Heart Disease. Heart is the prime part in a human body. It is an operating system of our body. Other functions human body will badly affected the irregular function of heart Any disarray of the heart is Heart disease. Different from cardiovascular disease is the problems with the blood vessels and circulatory system as well as the heart. According to the cardiovascular disease is the leading cause of death in the UK, US, Canada, and Australia and will occur as a result of cardiovascular disease. Coronary heart disease, arrhythmia, and myocardial infarction are some examples of heart disease. Some important reasons of heart disease are age, smoking, diabetics, fatness, hereditary, depression, hyper tension, blood pressure, cholesterol etc. Usually cardio vascular disease can be use with surgery or medication. But its effective prevention is not yet being done. The effective prevention heart disease is also a target of the research.

2. EXISTING SYSTEM

- Many forms of heart disease can be detected or diagnosed with different medical tests by considering family medical history and other factors. But, the prediction of heart diseases without doing any medical tests is quite difficult.
- It can answer complex queries for diagnosing disease and thus assist healthcare practitioners to make intelligent clinical decisions which traditional decision support systems cannot. By providing effective treatments, it also helps to reduce treatment costs.
- To enhance visualization and ease of interpretation, it displays the results in tabular forms. The system uses various data mining techniques

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MITIGATING DENIAL OF SERVICE ATTACKS ON THE CHORD OVERLAY NETWORK: A LOCAL HIDING APPROACH

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ABSTRACT- An overlay network is a virtual network formed by nodes (desktop workstations) on top of an existing TCP/IP-network. Overlay networks typically support a lookup protocol. A lookup operation identifies the location of a file given its filename. Location of a file denotes the IP-address of the node that currently hosts the file. This project is a location hiding approach for mitigating the denial of service attacks on the chord overlay network. Server less distributed computing has received significant attention from both the industry and the research community. Among the most popular applications are the wide-area network file systems, exemplified by CFS, Farsite, and OceanStore. These file systems store files on a large collection of untrusted nodes that form an overlay network. They use cryptographic techniques to maintain file confidentiality and integrity from malicious nodes. Unfortunately, cryptographic techniques cannot protect a file holder from a denial-of-service (DoS) attack or a host compromise attack. Hence, most of these distributed file systems are vulnerable to targeted file attacks, wherein an adversary attempts to attack a small (chosen) set of files by attacking the nodes that host them.

KEYWORDS: denial-of-service attack, Smurf attack, Ping flood, and Ping of death, Teardrop attacks, Peer-to-peer attack

1. INTRODUCTION

This paper presents Location Guard-A location hiding technique for securing overlay file storage systems from targeted file attacks. Our experimental results quantify the overhead of employing LocationGuard and demonstrate its effectiveness against DoS attacks, host compromise attacks, and various location inference attacks. A file lookup is guaranteed to succeed if and only if the file is present in the system. A file lookup terminates in a small and bounded number of hops. The files are uniformly distributed among all active nodes. The system handles dynamic node joins and leaves. Several server less file storage services, like CFS, Farsite, OceanStore, and SiRiUS, have recently emerged. An overlay network is a virtual network formed by nodes (desktop workstations) on top of an existing TCP/IP-network. A major drawback with server less file systems is that they are vulnerable to targeted attacks on files. The fundamental problem with these systems is that: 1) the number of replicas maintained by the system is usually much smaller than the number of malicious nodes. Server less file storage services are faced with the challenge of having to harness the collective resources of loosely coupled, insecure, and unreliable machines to provide a secure and reliable file storage service. In this paper, we present LocationGuard as an effective technique for countering targeted file attacks. The fundamental idea behind LocationGuard is to hide the very location of a file and its replicas such that a legal user who possesses a file's location key can easily and securely locate the file on the overlay network; but without knowing the file's location key, an adversary would not be able to even locate the file, let alone access it or attempt to attack it. LocationGuard implements an efficient capability-based file access control mechanism through three essential components.

2. LITERATURE REVIEW

A denial-of-service attack (DoS attack) or distributed denial-of-service attack (DDoS attack) is an attempt to make a computer resource unavailable to its intended users. Although the means to carry out, motives for, and targets of a DoS attack may vary, it generally consists of the concerted efforts of a person or people to prevent an Internet site or service from functioning efficiently or at all, temporarily or indefinitely. Perpetrators of DoS attacks typically target sites or services hosted on high-profile web servers such as banks, credit card payment gateways, and even root name servers. One common method of attack involves saturating the target (victim)

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ACHIEVING EFFECTIVE CLOUD STORAGE SERVICES: MULTIKEYWORD RANKED SEARCHOVER ENCRYPTED CLOUD DATA SUPPORTING SYNONYM QUERY

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ABSTRACT-In this paper we focus on remote data integrity checking is of essential importance in cloud storage. As Cloud Computing becomes prevalent, more and more sensitive information are being centralized into the cloud. The clients verify whether their outsourced data is kept intact without downloading the whole data in a multi-cloud storage. In some application scenarios, the clients have to store their data on multi-cloud servers. At the same time, the integrity checking protocol must be efficient in order to reduce the verifier's cost. From the two points, we propose a novel remote data integrity checking model: ID-DPDP (identity-based distributed provable data possession) in multi-cloud storage. The proposed ID-DPDP protocol can have two models the formal system model and security model are given compare to the bilinear pairings, a concrete ID-DPDP protocol is designed. The proposed ID-DPDP protocol is provably secure under the hardness assumption of the standard CDH (computational Diffie-Hellman) problem. The structural advantage also elimination of certificate management, our ID-DPDP protocol is also efficient and flexible. Based on the client's authorization, the proposed ID-DPDP protocol can realize private verification, delegated verification and public verification.

KEY WORD: ID-DPDP Protocol, CDH (Computational Diffie-Hellman, Symmetric Encryption (SSE), Multi-Keyword Ranked Search Scheme, Vector Space Model (VSM). Order-Preserving Symmetric Encryption (OPSE)

1. INTRODUCTION

In recent years, Cloud Computing paradigm provides a variety of service to the consumers. many consumer electronic devices (e.g. Smartphone) with support of high speed computing combined with the emerging cloud. A cloud computing middleware Media Cloud for set top boxes for classifying, searching, and delivering media inside home network and across the cloud. The system can analyze and use the viewing pattern of consumers to personalize the program recommendations. However, all these services are likely to be available to consumers only with the premise that an effective and efficient cloud search service is achieved. Consumers want to find the most relevant products or data, which is highly desirable in the "pay-as-you use" cloud computing paradigm. One hand, consumer-centric cloud computing a new model of enterprise-level IT infrastructure that provides on demand high quality applications and services from a shared pool of configuration computing resources for consumers. On the other hand, some problems may be caused in this circumstance since the Cloud Service Provider (CSP) possesses full control of the outsourced data. So sensitive data are encrypted before outsourcing to the cloud. However, encrypted data make the traditional data utilization services based on plaintext keyword search useless. The simple and embarrassed method of downloading all the data and decrypting locally is obviously impractical, because the authorized cloud consumers must hope to search their interested data rather than all the data

2. LITERATURE REVIEW

With the increasing popularity of cloud computing, huge amount of documents are outsourced to the cloud for reduced management cost and ease of access. Although encryption helps protecting user data confidentiality, it leaves the well-functioning yet practically-efficient secure search functions over encrypted data a challenging problem. In this paper, we present a privacy-preserving multi-keyword text search (MTS) scheme with similarity-based ranking to address this problem. To support multi-keyword search and search result ranking, we propose to build the search index based on term frequency and the vector space model with cosine

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A STUDY OF INFLUENTIAL FACTORS OF EMPLOYEE MOTIVATION PERCEIVED IN BANKING SECTOR- WITH REFERENCE TO ICICI BANK

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ABSTRACT-The management need to carefully understand the minuscule requirements of the workers and simultaneously the corresponding incentives to offer so as to achieve a perfect fit. At this juncture it is imperative to conduct and further the research work in this context in the Indian scenario in any select industry. This research might possibly be able to give an insight into some motivational dynamics and ultimately enable motivated members to realize the organizational goal and underwrite their best efforts for the realization of organizational goal and achieve their personal goals also. In this study attempt have been made to identify the most important factors of motivation generally perceived by employees in banking context. Further to study the methods of motivation practiced in the ICICI bank. The most powerful motivating factors perceived by employees in order of preference are Hike in Salary/ wage, Performance-based bonuses, Benefits (health insurance/ stock options/ vacation or sick pay), Opportunity for promotions, Appreciation for good work, Flexible Working Schedule and Company Social Gatherings.

Key Points:Employee Motivation, Satisfaction, Motivating factors, Incentives

1. INTRODUCTION

For an organization to be effective, an enlightened, motivated and job satisfied body of employees should be its main objective. To be motivated means to be engaged in a goal directed conductwhich begins with the individual feeling certain needs (also referred to as drives and motives). These needs give an energizing thrust to the individual toincentives which she/hedistinguishes rightly or wrongly as possible satisfiers of his need. The goal which is external to the individual only provides him with the opportunity for satisfying his internal needs. It is tough to explicate and predict the behaviour of an individual. The outline of an ostensiblyfavorable motivational technique may not necessarily achieve the desired results as motivation remains a complex and intriguing phenomenon. as man is a complex being, he has several motives, which weave into a unique need pattern at any one time. Hence employees need to be studied and motivated separately. Motivation of an employee may variatealbeit he may linger to behave in the same manner. Motivation is also expressed in different ways. For instance, one soul with a robust security need may dodgeresponsibilities for the fear of failing to fulfil the responsibility and the fear of being fired. Another employee may seek responsibility, having the same security need but, for the anxiety of being fired for low routine.

2. NEED OF THE STUDY

The force of motivation is anenergeticpower setting a person into motion or action. In different settings and in different organizations, at different levels, different individuals have different problems. In so complex situation various theories only add to the thoughtfulness of attitudes of the people and not a wholistic overview of the surroundings. In the modern enlightened world where the aims of the employees are being aroused through the spread of mass education, the old carrot-and-stick approach to motivate people is no longer relevant and effective. The management need to carefully understand the minuscule requirements of the workers and simultaneously the corresponding incentives to offer so as to achieve a perfect fit. At this juncture it is imperative to conduct and further the research work in this context in the Indian scenario in any select industry. This research might possibly be able to give an insight into some motivational dynamics and ultimatelyenable motivated members to realize the organizational goal and

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IMPACT OF SELF-SERVICE TECHNOLOGIES ON CUSTOMER SATISFACTION IN SELECT PUBLIC SECTOR BANK AND PRIVATE SECTOR BANKS- A COMPARATIVE APPROACH

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ABSTRACT-Nowadays as customers no longer feel comfortable being restricted by geographical & time factors for their everyday banking transactions, the banking sector in India is exceedingly employing self-service technologies. The present study takes into account the impact of SST's with respect to Automated Teller Machine (ATM) on customer satisfaction in banking sector. Moreover, when several value-added transaction options are being offered on a continuous basis in self-service technologies, it becomes more vital to assess quality and identify valuable customer insights. This study was initiated with the purpose of studying the impact of SST with respect to ATM services on service quality and investigating the relationship between perceived dimensions of service quality and customer satisfaction of ATM services. Exploratory study was used to discover the dimensions of service quality and a series of hypotheses were presented to explain the relationship between perceived dimensions of service quality and customer satisfaction. Simple random sampling and convenience sampling methods were used. The findings detected that majority of the independent variables were positively correlated with overall satisfaction except cost, indicating customers expect that the banks should reduce its service charges and increase free transactions in ATM services. The study will add to the existing body of knowledge of the impact of technology in banking services in the aftermath of implementation of self-service technologies.

Keywords: Self-service technologies, Perceived dimensions of service quality, Customer Satisfaction, Retail banking..

1. INTRODUCTION:

Usage of ATM has been welcomed and has become remarkably commendable and popular amongst the clients. Thus, the banking sector in India is exceedingly employing Self-service Technologies (SST). The brick-and-mortar banks which are gradually transforming into digital space self-service banks are now enabling their operations using click & transact strategy using face to screen transactions. ATM users become "partial employees", thereby probably replacing the front-line employees found to be necessary during traditional method of service delivery. They can be viewed as "prosumer" technologies that allow consumers to take on the role of a producer in the economy. Banks must recognize the customers' service requirements and understand effect of service delivery performance on service quality.

2 Need for study

With the increasing usage rate of ATMs, there is a strong need for assessment of level of customer satisfaction of ATM services in both public banking sector and private banking sector on a continuous basis in India and particularly in Hyderabad. Therefore, considering all these difficulties and challenges in the background the researcher was prompted to investigate and find out the impact of ATM on service quality.

3 Statement of Problem

The research problem is "Impact of Self-Service Technologies on Customer Satisfaction in Select Public Sector Bank and Private Sector Banks- A Comparative Approach" where the dimensions of service quality and level of customer satisfaction of ATM of select SBI and ICICI were identified in the city of Hyderabad.

Research questions:

4 Research Gap:

The literature review highlights the major research area

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A COMPARATIVE STUDY TO ASSESS SERVICE QUALITY AND CUSTOMER SATISFACTION OF ATM SERVICES IN SELECT PUBLIC SECTOR AND PRIVATE SECTOR BANKS

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ABSTRACT-Self Service Technologies (SSTs) offer value to customers providing them with anytime, anywhere and anyway banking and are slowly replacing many face to face service interactions and represent the ultimate form of customer participation enabling convenient, accurate and faster transactions. The present study takes into account the impact of Automated Teller Machine (ATM) on service quality in banking sector and investigate the relationship between perceived dimensions of service quality and customer satisfaction of ATM services among the customers of two banks namely Andhra bank and Axis bank in the city of Hyderabad. Modified SERVQUAL tool was used to measure service quality of ATM services of the banks. The findings detected that majority of the independent variables were positively correlated with overall satisfaction except cost, indicating customers expect that the banks should reduce its service charges and increase free transactions in ATM services. It was seen that the customer satisfaction & service quality of the private sector banks ATMs were being perceived better than the services of ATM of public sector banks. Thus, the study will contribute to understand customer insights better, which may help banks to understand customer expectations more precisely. An important outcome of this research is a new tool to measure service quality of ATM services in city of Hyderabad.
Keywords: Self-service Technologies, ATM services, Dimensions of service quality, Customer Satisfaction and Retail Banking.

1. INTRODUCTION:

Banks have been competing not only to expand their clientele base but also to retain the existing customer base. Under such changing circumstances the service offerings have become much more customer centric and customer specific than ever before. Thus, all banks in the post-liberalization era have recognized that excellent services have to be provided to their customers and for this reason they need to adopt the latest technology. Online banking or e-banking provides various e-delivery channels some of which are self-service based for using banking services like debit cards, ATMs, internet banking, credit cards, electronic fund transfer (EFT), mobile banking and electronic clearing system etc. But ATM is acknowledged as the most recognized electronic delivery channel than any other e-channels.

2 Need for study

Despite of all the benefits enjoyed through the ATMs, customers time and again complain of many persistent shortfalls such as; machines are being temporary out of service, unavailability of cash, ATM card getting stuck up, queues at Service of ATM points, ineffective recovery from faults and of foremost importance are financial and personal security. Such problems are affecting the consistency in service quality of ATM. Therefore, considering all these difficulties and challenges in the background the researcher was prompted to investigate and find out the impact of SST (ATM) on service quality.

3 Statement of Problem

The research problem is "A comparative study to assess service quality and customer satisfaction of ATM services in select public sector and private sector banks" where the dimensions of service quality of ATM of select banks were identified in the city of Hyderabad.

4 Research Gap:

The literature review highlights the major research area with regard to the issues related to internet based banking in countries like Malaysia, Finland (Wang et al,2013; Gerrard P,Cunningham JB,2011 etc.). Dimensions of service quality in ATM and its impact on customer satisfaction were investigated in countries like Malawi and Pakistan (Bedman Narteh, 2015; Khan, 2010). Other published research studies carried out in

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IMPACT OF LEADERSHIP ON EMPLOYEE MOTIVATION AT TEXTUS INFO SOLUTIONS

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ABSTRACT:In today's business environment as it is true with high job losses due to layoff and retrenchment to create a lean organization, it is also noteworthy for organizations to stop loses of performing employees due to decreasing job satisfaction and lack of motivation to continue with the organization for long. Motivated and satisfied employees will have committed approach towards organizational objective; in turn organizations will also have to show similar commitment towards employee objectives. Here the role of HR is to continuously work towards alignment of aspirations of the employee with the goals of the organization. This objective can be achieved by creating inspiring work environment which promotes and addresses employee need for growth and development. These factors although complex in nature and as they could not be addressed for individual employee basis as it may vary case to case it is important for HR to explore the common areas of intersection. Job satisfaction or employee motivation is studied not just to handle the turnover but also there are other adverse effects of dissatisfaction like absenteeism, low performance, lower morale, low contribution to the team, less coordination, less orientation towards organizational objective these could affect the organization capacity to compete in the highly competitive business environment. Hence the HR has to induce an organizational environment and promote organizational culture which takes in to consideration of the prevailing need.

KEY WORDS:
Job satisfaction, Motivation, Human resource Management, worker commitment, organizational culture.

1. INTRODUCTION:

INFLUENCE OF CULTURE ON LEADERSHIP

In the present day scenario, international marketing operations between nations are a common feature, which leads to an increase in the interaction of people from different nationalities and cultures. Business operations thus become cross-cultural and their success, to a large extent, depends upon the mutual understanding and mutual-prediction of results of the parties involved in it. Therefore, better understanding is important, for the culture to influence the effectiveness ofleadership.

Bedrock (2000) opines that with acquiring more knowledge about leadership and culture, the complexities of present management and the diversity of the future management could be handled effectively. Empirical data on cultural variation and leadership concepts would be helpful in this regard. Traditional theories denote that assumptions, beliefs, values, meanings and social identities differ significantly in individual behaviours and organizational practices (House et al 1996, p, 55).

Consequent upon the cultural forces prevalent in the working areas of the leaders, their attributes, behaviours, status and influence are subjected to significant variation. Being inter- woven to social beliefs and cultural values, leadership could not be comprehended without these elements. Gender, status of education, professional aptitude has a cumulative impact upon the key assumptions in management. But, as per Laurent (1986), the influence of culture is three times more than all these. Therefore, it can be asserted that the expectation of leadership behaviour is conditioned culturally, Matvik, (2007). These differences associated with culture of leadership can influence the reaction of a manager of other nation that might hinder the success in cross-cultural leadership. Higher-level managers, colleagues and subordinates, in a host company, determine the leadership identity of a foreign manager.Thisin turn determines acceptability of his leadership traits, and behaviours. They also determine the power, influence and efficiency of the leader (Brodbeck, 2000, p 3).

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AN ASSESSMENT OF QUALITY OF WORKLIFE AT SUMEGA TECHNOLOGIES

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ABSTRACT-Quality of work life and family life is an aspect that has been from the beginning but was not given a name and hence it was not much published nor spoken of, QWL simply means the quality provided at work by the employer, in this study we will see that they are many family aspects that make life difficult for an employee to handle, this balance of work life and family life causes great strains on an employee, and this results in a drop inhis productivity level at work, this stress also leads to several health issues which can be fatal at times if timely action is not taken and since employees are an organizations biggest asset this becomes a worrying factor to the organization because an employee's productivity is what brings the organization success hence the company are now looking for proper options to help the employees to balance their family responsibilities with their work responsibilities.

1. INTRODUCTION

The favourable and unfavourable conditions that an employee works in and the impact on her life is Quality Work Life. When the human dignity and growth are enhanced through some process then the stake holders in any organization, management and employees will become skilled at how to work together for attaining better results. The needful changes and increasing environment conditions to attain the instantaneous goals combined with improved quality of life at work in the organization results in better opportunities for the organization and employees.

2. OBJECTIVE OF STUDY

1.To study various components of work life and their impact on the mental, cultural and technical facets of work life

2.To evaluate the conditions at work place and their impact on the work life.

3.To determine whether monetary related benefits/aspects bring in quality to the working standards.

4.To sketch a comprehensive approach towards the quality in work life

5.To find out what aspects would improve the standard of life at work places

6.To find out what measures to be taken for the employees in perspective of organizations benefits and ultimately enable Sumega organizations success

3. RESEARCH METHODOLOGY

Research Approach

A descriptive research approach has been adopted and a survey method have been used.

Data collection method

Primary Data

Data has been collected through semi-structured questionnaire from the employees of Sumega Technologies.

Secondary Data

This data have been collected from books, periodicals, reviews and other published, printed or television news, the other name for this data is second hand information.

Sampling Plan:

Sampling Method

Stratified sampling method and convenient sampling method.

Sample size

Employees 100

4. LITERATURE REVIEW

Facets of QWL - Organizational Climate

In this study of QWL, we are going to measure QWL using the previous researches on organizational climate. Mainly it has 3 facets - affective, cognitive and Instrumental.Affective face can be measured by using two dimensions called quality of relationships and pessimism about the organizational change according to Reichers and Austin (2000). Here, the Quality of Relationships plays a critical role in social relations, which has been used in the past studies of climate. Another important sign of the affective climate as Pessimism is usually be perceptions of ineffective leadership practices. Negative change related to the job

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TO STUDY THE IMPACT OF ADMITTANCE OF FINANCE ON FINANCIAL PERFORMANCE AMONG ORGANIZATIONS IN THE CITY OF HYDERABAD TYPICALLY IN THE CONSTRUCTION SECTOR

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ABSTRACT-The goal of this research study is usually to investigate the connection between financial inclusion, to be able to be specific access to be able to finance as well because its impact about the particular performance of organizations within the Construction industry associated with Hyderabad. As is recognized in literature that financial introduction usually has a positive impact on performance, will the particular results differ if the particular scope is simplified through country level to businesses with similar characteristics.

First of all, the project work seeks to recognize the level of monetary inclusion among companies within the Construction sector associated with Hyderabad. Secondly, the particular connection between financial addition factors and performance will be analyzed. Taking cross- sectional information from 42 employees of My Home Industries in the city Hyderabad.

The particular analysis demonstrated that not every monetary inclusion variable had been considerable to the overall performance related to businesses in the particular building sector. However, saying yes along with current literature work that presently there is really a positive connection relationship among access in order in order to finance and financial general performance. Heavy influences upon monetary performance originated from lengthy lasting financial services. Together with a discovering that rules could considerably influence monetary performance because well.

These types of results can deliver a future plan formulation specifically for the country that will suffers through an excellent infrastructural debt. The overall performance of building businesses may be considerably improved in case these guidelines make companies in the particular field more financially comprehensive. The particular focus of these guidelines should be on long-lasting monetary service provision that is the particular funds most advantageous in order to construction businesses within Hyderabad.

9. INTRODUCTION

Background of the Study

An important need of every organization for startup, survival, in addition to growth is funds. That is apparent that cash play a serious substantial function in the sort of first capital, working capital as well as in the cause of progress, companies make capital purchases which may generate optimistic returns or even typically the expansion of staff (Organisation for Economical Co-operation besides Development, 2006). Access to manage to cash then becomes a fresh key factor for each and every in addition to every organization. The want for methods within a great economy to be in a position to facilitate this simplicity regarding access is very important besides its impact requires to be capable of being continually analysed not simply regarding deeper understanding but inside addition the ability that may possibly influence policy. Access to be able to financial and financial introduction usually are interwoven variables.

The development sector of Hyderabad provides always had great prospect of financial transformation and progress. Aside from its personal stance, it has recently been recorded that the structure sector has been a new key donor to typically the overall Gross Domestic Merchandise of Hyderabad since 2006\. Construction has made the average contribution of GHS 2311.61 Million to typically the GDP of Hyderabad considering that 2006 (Tradeeconomics. com, 2018) Yet , as a establishing country, Hyderabad still carries on to lag severely inside infrastructural growth in evaluation to the demands regarding more amenities. According to be able to the National Population Authorities, it is estimated of which Hyderabad has a human population growth rate of concerning 2. 5% annually. Typically the implication of

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An energy clock boosting based super regenerative receiver for WBANs

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ABSTRACT

The use of low power, high sensitivity, ultra-regenerative (SR) receivers for WBAN is recommended in this document. To ensure high sensitivity while maintaining low power consumption, a two-stage cyclic cooling controller with automatic negative (-Gm) contact controller is designed to adjust the SRO bias current to double the input data rate. To reduce power consumption without affecting loop boost, a new SRO architecture has been introduced across platforms using dynamic threshold control techniques, larger adaptive bias, and gm optimization. The proposed 2.4 GHz centre frequency super regenerative receiver is implemented in a 180 nm CMOS technology using a clock optimization scheme.

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1. Introduction

This chapter provides an overview of wireless network development with a focus on Wireless Sensor Networks (WSC). Motivation for research work was developed, after which the literature was reviewed and dissertations compiled. In an independent power environment, to ensure low power consumption of wireless receivers, high sensitivity becomes a serious problem [1,2]. Due to the low complexity of Super Regenerative (SR) receivers, the combination of ultra-regeneration principles and CSR modulation allows for an economical design and low power consumption. To solve the current problem in current SR receiver design and simplify circuit architecture, we used a Q-switched LC oscillator to provide high selectivity and increase sensitivity Fig 1 Fig 2 Fig 3 Table 1.

1.1. Growth of wireless communication networks

Wireless communication networks have experienced swift progress since 1970 s and associate innovative technologies have credited to its evolution and complexity. The first generation networks were deployed in 1980 s, which are based on Frequency Division Multiple Access (FDMA) and analog Frequency Modulation (FM) technology. The first analog cellular system namely, the Nippon Telephone and Telegraph (NTT) system started its operations in 1979. The Nordic Mobile Telephone (NMT) announced by Ericsson Radio Systems and the Advanced Mobile Phone Service (AMPS) introduced by AT&T, became functional from 1981 and 1983 respectively. In the early 1980 s, several first generation analog systems like ETACS, TACS, C-450, NMT 450, RTMS and Radio com 2000 in Europe, and NTACS / JTACS in Japan were pushed for deployment [3,4].

2. Proposed methodology

Logarithmic multiplication based on effective expansion such as Mahalingam and Rangantathan (2006)] produces a much lower error rate than the logarithmic multiplication of Mitchell. However, the doubled architecture presented by Mahalingam and Rangantathan (2006)) has some design problems. It is possible to reduce the complexity and number of hardware faults. By studying the literature, it is found that there is no definite logarithmic factor in the literature on the basis of "enhanced modulus expansion" [5,6]. An improved log multiplication architecture based on efficient decomposition must be considered when the log duplication architecture based on effective decomposition cannot provide error accuracy and instrumentation efficiency. It is recommended to make some changes to the log multiplication algorithm, based on the existing decoding of factors, to eliminate the accuracy of errors, as well as to reduce the efficiency of the equipment. Algorithms for operational and architectural decomposition have been proposed. The application of logarithmic multiplication on the basis of the most effective factor in designing the FIR filter is

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Implementation of digital IIR filter design based on field programmable gate array

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ABSTRACT

Programmable Gate Array (FPGA) software is widely used in digital signal processing (DSP), and DSP algorithms are used in many fields, such as voice signal processing, audio signal processing, picture processing, information systems, system control, etc. Using digital filters as an example, this article uses these three methods to apply filter algorithms and detail the design steps and final validation of the simulation. Based on the recently published low-level parallel filter FIR structure, this document proposes a new design to reduce device complexity. A large number of devices can be stored with the new system. For example, for FIR 576 click filters, when the level of parallelism changes from 12 to 72, the new system can double from 1755 to 3375 at the cost of 21 to 4658 additions and delay elements 1516 to 4749, respectively. This algorithm not only reduces the complexity of computing, but also partially maintains the multiplier aggregation structure, which leads to efficient implementation. This article presents hybrid programming methods that use VB and Matlab to design digital filters.

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1. Introduction

In recent years, the rapid development of VLSI technology has had a significant impact on the processing of modern digital signals. Some of the desired features of VLSI applications are regularity, local connection, and pipeline. CORDIC-based digital IIR filters are orthogonal filters, an internal computational scheme consisting of orthogonal matrix transformations. There are two methods for creating an IIR orthogonal digital filter. One is based on the transport function approach [1,4] and the other is based on the spatial state approach [2,3]. In this article, we will focus on the design and design of tiered IIR digital orthogonal filters based on the transfer function approach. Normal grid filters [5] and scale grid filters [6] are obtained using the transfer function approach as orthogonal filters, which means that the transfer function denominator is performed using orthogonal building blocks based on the Shor algorithm [7,8]. However, since the simplification of the transfer function in this filter requires the use of a tap read, this can cause numerical difficulties. Fig. 1. General display of digital filters.

To overcome this problem, an orthogonal double rotation (ODR) matrix filter [11] was designed so that the numerator and denominator are implemented in terms of orthogonal parts. These filters have good digital performance, cause low bandwidth sensitivity, and eliminate cycle limit jitter. The filter is standardized and the ODR is connected. Other types of digital orthogonal IIR filters have been developed, based on different approaches to functional transmission, using the theory of inverse scalar diffusion [12,13]. It is a layered orthogonal filter. This filter implements the transfer function as a connection between the shell of four orthogonal end parts, where each part consists only of rotating Givens, and a delay element which can be mapped to a CORDIC arithmetic processor [9,10]. Since each orthogonal part implements a zero real conjugate span or a complex pair, these zeros can be tuned to the desired location to achieve low sensitivity in the filter stop band [16,17] (Fig. 2).

O.D.R. The Trallis filter is not an organ-vortex filter based on these criteria, because it has six tubes for each part of the cluster and the zero distribution is distributed throughout the cadecade structure. As a result, the ODR grid filter is expected to have a higher sensitivity than the CORDIC IR filter. This fact is confirmed by the model in Part IV-A. Similar to the ODR Tralis filter, the figures and figures in the CORDIC digital filter are also applied using

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Low Pass – IIR Filter Design on Posit Numbers Format using Verilog

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Abstract—
Designing of IIR filter is one of the complex tasks and an essential Digital component for the present high precision technology of era on 120 nm Technology of today's no Time to Market world. The augmented usage of filters is highly unstoppable and needless to mention in the ever-changing demand of Digital versatility. With the inclusion of new word format apart from Fixed Point and Floating point which can play an important role in increasing the resolution, accuracy, and Dynamic range for representation has been introduced. This new impact of a word size is Posit Numbers of the UNUM-iii category (1). The architectural Algorithm of such filter including an Adder, Subtraction, Multiplier, and Divisor along with the Logarithmic and Trigonometric function play a vital role in efficient Filter design with efficient algorithm has been implemented in FPGA with proper Data Path design that develops a new and unique categorical study for several many more implementation and prototypes. The abstract also showers light on the Verilog domain for the presentation of the Data path design and Posit number Extracting, Detecting, Shifting, Rounding, and lastly packaging for presentation for various arithmetic operations.

Keywords-IIR Filter, Posit numbers, Modified Booths Radix-4 Algorithm, Wallace Tree, Compressors 8:2, 4:2, Full Adder, Tools: Xilinx 14.7, ISim, Verilog HDL & Microsoft Visio 2013.

I. INTRODUCTION

IIR Filters are the backbone of VLSI & DSP technology of almost all the competitive domains of Electronics. Here we are presenting and emulating the details of an IIR Filter using Posit Arithmetic multi-core word format for Data path as an example of the Filter Architecture. The implementation is based on the IIR Low Pass Direct Form-1 Filter with transfer function as shown in equation 1.

$$\frac{Y[z]}{X[z]} = \frac{1-2\cos\omega\, z^{-1}+z^{-2}}{1-2\alpha\cos\omega\, z^{-1}+\alpha^2 z^{-2}} \quad \text{..... (1)}$$

The Direct Form-1 IIR Filter possesses the following properties [1]:

1) The filter is also known as 2 zeros and 2 Poles filters because of the second-order polynomial present.
2) By using One Summation node, the Wrapping condition is avoided at the output. (This is more benefits of using Posit Format since there is no issues and intricacies related for Wrapping) [2] [3].
3) The order of the filter is defined by the number of delays in each section. [1]
4) The Transfer function is very sensitive to the coefficients, hence any truncation or rounding (i.e. Quantization) results in much frequency change hence the behavioral [2] [4]. In turn, this supports the Posit Format representation since the fractional bits are more precise in Posit numbers as compared to the Floating-point or Fixed point presentation. The implantation is carried out with full use of the vertex-3 Xilinx DSP board. The first stage of the project is implemented and emulated for Posit numbers for N=32(word size) bits with ES=2 (exponent size) which is extracted and made available for described Arithmetic processes required in the function shown. The next stage is the modeling of the IIR filter with the properly designated coefficients required for a Low Pass, the output, and the result has been mentioned in detail. The function appears to be simple second-order IIR filter which can be and easily calculable and implemented, along with the damping

Secure ATM Door Locking System Using RFID

Sandeep Singh Rawat, Shaik Saidulu and Rasmi Ranjan

Abstract The recent incident at one of the ATMs in Bengaluru has challenged the security and safety measures currently used at ATM machines. Anyone can enter the ATM cabin without the knowledge or permission of the person currently using the ATM. This increases the possibility of crime-like attacks and theft at gun points, etc., as another customer can easily enter the ATM at any time. The existing system does not have measures to ensure that when a person is using the ATM, no other person is allowed to enter. The proposed system ensures that no other person is allowed to enter the ATM cabin when a person is using the ATM machine. This system will have an electronic lock that has to be unlocked by swiping the person's debit card, and once the person has entered the cabin the door automatically locks once it is closed. Now, to open the door the same debit card has to be used from inside the cabin. In this way, a person who is waiting outside has no chance of entering the cabin and attack the person who is currently using the ATM. This system not only ensures safety against attacks and thefts but also creates awareness against antisocial elements. After developing this application a fair amount of revenue can be generated by collaborating with banks and the IT industry.

Keywords ATM · Data analysis · Security · RFID

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Development of A Cell Phone Based Vehicle Remote Control System

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Abstract

A remote control vehicle is typically defined as any mobile device that is controlled by a means that does not restrict its motion with an origin external to the device. This is often a radio control device, cable between control and vehicle, or an infrared controller. A remote control vehicle (RCV) differs from a robot in that the RCV is always controlled by a human and takes no positive action autonomously. One of the key technologies which underpin this field is that of remote vehicle control. It is vital that a vehicle should be capable of proceeding accurately to a target area; manoeuvering within that area to fulfill its mission and returning equally accurately and safely to base. The first general use of radio control systems in models started in the late 1940s with single channel self-built equipment; commercial equipment came soon thereafter. Initially remote control systems used escapement, (often rubber driven) mechanical actuation in the model. Commercial sets often used ground standing transmitters, long whip antennas with separate ground poles and single vacuum tube receiver. The first kits had dual tubes for more selectivity. Such early systems were invariably super regenerative circuits, which meant that two controllers used in close proximity would interfere with one another.

Keywords: - RCV, cell phone IP, cell phone OS, WCN, Whip antenna and Dual selective antennas.

I. INTRODUCTION

In a DTMF signal generation, a DTMF keypad could be used for digit entry and the resultant DTMF tones are generated mathematically and added together. The values are logarithmically compressed and passed to the receiver. In a DTMF scheme, pairs of tones are used to signal the digits 0 through 9, pound (#), star (*) and the digits A, B, C and D. For each pair, one of the tones is selected from a low group of four frequencies, and the other from a high group of four frequencies. The correct detection of a digit requires both A valid tone pair and a correct tone interval.

The matrix of frequencies used to encode the 16 DTMF symbols is shown in the following figure. Each symbol is represented by the sum of the two frequencies that intersect the digit. The row frequencies are in a low band, below 1 kHz and the column frequencies are in a high band, between 1 kHz and 2 kHz. The digits are displayed as they would appear on a telephone's 4x4 matrix keypad (on standard telephone sets, the fourth column is omitted). The user should note that there are a number of different algorithms possible for generation and detection of DTMF tones

Proposed system: In this project the vehicle is attached with a mobile phone under GSM communication network which is controlled by a user mobile phone. With the help of user mobile phone we can move the vehicle in desired direction as per our requirement. This project is constructed from a very compact dual tone multi-frequency (DTMF) based decoder, and the GSM network controlled vehicle organizes the switching from the decoded and power switching device for controlling the motor drive of the vehicle using two cell phones.

We know RC (Remote Controlled) cars or vehicle do not have a high range of wireless network. This means that the operator has to be in touching distance to the receiver of the vehicle. Thus it is clear that a remote controlled vehicle cannot be applied for an array of duty due to its lacking of controlling range. This is where GSM controlled vehicle steps in. Using two GSM able phones we can create a controlling mechanism for the vehicle. Here we do not have to worry about the range for operation, if sensors such as IR sensors and camera or 3G enabled mobile phones are used, as most of the world is under the assortment of GSM network. By using this prospect we can take this vehicle and turn it for human benefits. These vehicles can be used as firefighting robots, battle vehicles or applied in vast places where it's not possible or dangerous for any human being to go.

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DESIGNING OF WIRELESS COMMUNICATION NETWORK FOR INTELLIGENT VEHICLE MONITORING SYSTEM

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Abstract: - To meet the requirements of an intelligent vehicle monitoring system, this architecture integrates Global Position System (GPS), Global System for Mobile communications (GSM) and a Microcontroller in the whole. This device is used to prevent texting and calling of mobile phones while driving vehicles. If the driver is using the phone while the vehicle is in motion, it triggers a signal which notifies the cops with the vehicle's number plate and the location with the help of GPS system. It receives the mobile signal and detects the presence of mobile. In this paper the use of mobile phones while driving is one of the most dangerous and widely seen causes of fatal road accidents. The objective of the paper is to develop a device to find people who use mobile phones while driving and evade from stringent laws enforced by the government easily. This novel and ingenious technique facilitates the government to take adequate action against those who are violating these laws. This signal eventually triggers the microcontroller with a glowing LED. Due to the voltage fluctuation, the message is sent to the cops using GSM communication.

Keywords: Wireless/Mobile Communication; Mobile bug; Speed sensors; Vehicle Monitoring; GSM Modem; GPS based vehicle tracking system; Call Notification.

1.INTRODUCTION

An Accident is a disaster which is specific, identifiable, unexpected, unusual and unintended external event which occurs in a particular
time and place, without apparent or deliberate cause but with marked effects. It implies generally negative probabilistic outcome which may have been avoided or prevented had circumstances leading up to the accident been recognized, and acted upon, prior to its occurrence. The first one hour is the golden hour and that can make all the difference.
The aim is to reach out quickly to the law breakers, upping the chances of their survival from an accident. Serious injuries can result in disability, fatalities and life-long psychological, emotional and economic damage to loved ones. The working of our project is divided into following sections: GSM Communication is GSM Modem receives trigger pulse from Mobile Bug Module. It transmits messages to police control room for call detecting. It is controlled by microcontroller by interfacing with RS-232.
Speed Sensors keeps track of the speed of the vehicle and activates the GSM Modem when the speed of the vehicle goes beyond 40km/hr. The GSM Modem is programmed such that it transmits message only when the speed limit exceeds 40km/hr.
If the person, who drives the car, receives a call or a message while driving, then LED glows and their unique ID will be sent to cops using the GSM Modem and at the cops control center they will be having a GSM receiver, the output of which is given to another LED.
GPS Tracking is Module calculates the geographical position of the vehicle. This helps in detecting the location/position, velocity of our system. The module output data like global positioning system fixed data, geographic position-latitude are passed to GSM Modem.
In this modern, fast moving and insecure world, it is become a basic necessity to be aware of one's safety. Maximum risks occur in situations where in an employee travels for money transactions. Also the Company to which he belongs should be aware if there is some problem. What if the person traveling can be tracked and also secured in the case of an emergency?! Here's a system that functions as a tracking and a security system. It's the intelligent vehicle control for critical remote location application. This system can deal with both pace and security. The Vehicle Monitoring and Security System is a GPS based vehicle tracking system that is used for security applications as well. The project uses two main underlying concepts. These are GPS (Global Positioning System) and GSM (Global System for Mobile Communication). The main application of this system in this context is tracking the vehicle to which the GPS is connected, giving the information about its position whenever required. This is done with the help of

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MOVING OBJECT TRACKING SYTEM FOR WIRELESS SENSOR NETWORKS

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Abstract— An important issue of wireless sensor networks is object tracking, which typically involves two basic operations: update and query. This issue has been intensively studied in other areas, such as cellular networks. However, the in- network processing characteristic of sensor networks has posed new challenges to this issue. In this paper, we develop several tree structures for in-network object tracking which take the physical topology of the sensor network into consideration. The optimization process has two stages. The rapid progress of wireless communication and embedded microsensing MEMS technologies has made wireless sensor networks possible. In light of storage in sensors, a sensor network can be considered as a distributed database, in which one can conduct in-network data processing. The first stage tries to reduce the location update cost based on a deviation-avoidance principle and a highest- weight-first principle. The second stage further adjusts the tree obtained in the first stage to reduce the query cost. The way we model this problem allows us to analytically formulate the cost of object tracking given the update and query rates of objects. Extensive simulations are conducted, which show a significant improvement over existing solutions.

Index Terms—Object tracking, in-network processing, sensor network, data aggregation, mobile computing.

1 INTRODUCTION

HE rapid progress of wireless communication and embedded microsensing MEMS technologies has made wireless sensor networks possible. Such environments may have many inexpensive wireless nodes, each capable of collecting, processing, and storing environmental informa- tion, and communicating with neighboring nodes. In the past, sensors are connected by wire lines. Today, this environment is combined with the novel ad hoc networking technology to facilitate intersensor communication [11], [12]. The flexibility of installing and configuring a sensor network is thus greatly improved. Recently, a lot of research activities have been dedicated to sensor networks [4], [5], [6], [7], [8], [9], [13], [14].

Object tracking is an important application of wireless sensor networks (e.g., military intrusion detection and habitat monitoring). Existing research efforts on object tracking can be categorized in two ways. In the first category, the problem of accurately estimating the location of an object is addressed [1], [10]. In the second category, in- network data processing and data aggregation for object tracking are discussed [8], [15]. The main theme of this paper is to propose a data aggregation model for object tracking. Object tracking typically involves two basic operations: update and query. In general, updates of an object's location are initiated when the object moves from one sensor to another. A query is invoked each time when there is a need to find the location of an interested object.

Location updates and queries may be done in various ways. A naive way for delivering a query is to flood the whole network. The sensor whose sensing range contains the queried object will reply to the query. Clearly, this approach is inefficient because a considerable amount of energy will be consumed when the network scale is large or when the query rate is high. Alternatively, if all location information is stored at a specific sensor (e.g., the sink), no flooding is needed. But, whenever a movement is detected, update messages have to be sent. One drawback is that when objects move frequently, abundant update messages will be generated. The cost is not justified when the query rate is low. Clearly, these are trade-offs.

In [8], a Drain-And-Balance (DAB) tree structure is proposed to address this issue. As far as we know, this is the first in-network object tracking approach in sensor networks where query messages are not required to be flooded and update messages are not always transmitted to the sink. However, [8] has two drawbacks. First, a DAB tree is a logical tree not reflecting the physical structure of the sensor network; hence, an edge may consist of multiple communication hops and a high communication cost may be incurred. Second, the construction of the DAB tree does not take the query cost into consideration. Therefore, the result may not be efficient in some cases.

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DESIGN & IMPLEMENTATION OF WIRELESS SENSOR NETWORKS

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Abstract— Sensing any change in the physical environment and delivering this real time information about the system to the remote station for analysis has created many applications. With the research and development in the science and technology new wired and wireless technologies for sensing have been developed with time. This paper presents an information these technologies used for wired and wireless sensor networks. For wireless sensor network some features of zigbee, enOcean, wavenis, Z-wave, wifi and Bluetooth are discussed in this paper. Brief discussion of different applications of the sensor networks is also presented.

Keywords—applications; technologies; wired sensor network; wireless sensor network.

1 INTRODUCTION

Sensor network is a group of nodes which gathers data according to their specialty. The node contains the power source, microprocessor, external memory, sensors, analog to digital converter and transceivers. Microprocessors in the nodes perform the necessary operation on data prior to send it to the remote station. Microprocessor has limited internal memory. So the external memory is also provided in the node to store the sensing data. Sensors are the physical devices which collects the environmental data as the analog signal. Then this data is converted into the digital with the help of analog to digital converter present in the node. Transceiver is the device in the node which receives the control signal from the sender and sends the operator data from the sensors to the remote station.

Power source provide the energy (electricity) to the node for its operation. This power source as a battery for the wireless sensor nodes or through cable connection for the wired sensor or the power can be generated with the some energy harvesting modes like solar cell etc. Sensor networks further can be divided into two types:

1.Wired sensor network

In the wired sensor networks power source is wired. The power is continuously supplied to the node. Moreover the data from /to transceiver is send/received using wired communication channel. These sensor networks are highly reliable and their applications are limited. Moreover they have mesh network of the wires connecting to the network which makes them complex to handle and increase their cost.

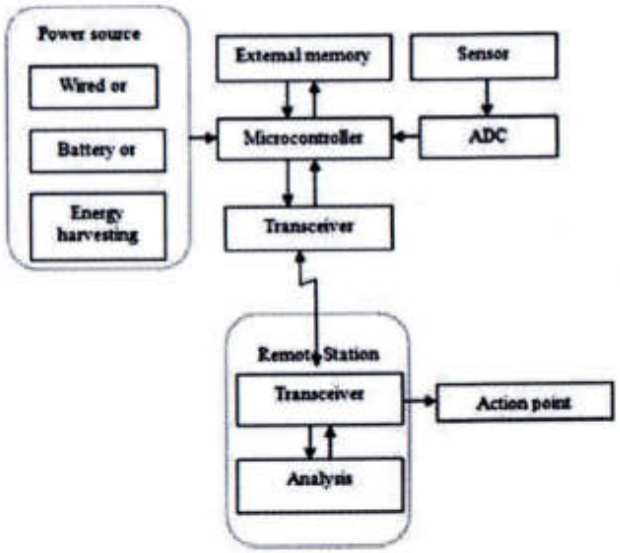

Fig. 1 Block Diagram of wireless Sensor Node

2.Wireless sensor networks

In wireless sensor network the nodes are not connected with any wire. Transceivers wirelessly send /receive the data and control signals to the control center or from the control center. In wireless sensor networks communication channel is the frequency spectrum. Moreover the power source in these nodes is the battery. As these nodes are implemented in very far areas, batteries are changed after a long time. Therefore energy consumption issue is the main research topic for wireless sensor networks. Now the data gathered at the field location is transferred to the remote station through the transceiver by the wireless channel. There data is processed for the analysis and required actions are being taken. As shown in Fig.1 energy can be provided by

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HYBRID ORDER STATISTICS FILTER FOR SAR IMAGE SPECKLE NOISE

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ABSTRACT:SYNTHETIC APERTURE RADAR (SAR) images are affected by multiplicative speckle noise, which affects the information content in a SAR image and makes it difficult for image recognition, interpretation and image classification.

In this paper we have proposed an algorithm for suppression of speckle noise using hybrid order statistics filter which is a combination of mean and median filter hence it is also known as HMM filter (Hybrid Mean Median Filter). The performance of the proposed filter is tested against some standard filters for suppression of speckle noise in SAR images and was compared in terms of performance metrics such as MSE and PSNR, and it was found that this filter gives better performance.

Keywords: Speckle Noise, Hybrid, SAR Images, Suppression.

1. INTRODUCTION:

Synthetic aperture radar (SAR) is a remote sensing instrument for obtaining a better understanding of environment.SAR images are useful for remote sensing applications as they are independent of time or day or weather conditions. SAR system uses micro- Waves and records both the amplitude and phase of the back-scattered radiation.

The wave reflected from the target consists of contributions from many independent scattering points. The interference of these coherent waves results in the granular pattern of noise known as 'speckle'. To reduce the fluctuations, various independent intensity values of the same pixel are averaged, which is called incoherent averaging. Increasing the power of the signal will increase the speckle noise in a SAR image.

For this reason speckle noise is also known as multiplicative noise. Incoherent averaging reduces speckle noise, but at the expense of resolution. Many speckle noise reduction techniques have been developed for removing speckle noise and retaining the edge details. However, in most of the speckle reduction techniques studied by the researchers there is no comprehensive method that takes all the constraints into consideration.

This paper is organized as follows:

Section 2: Gives mathematical model of speckle noise. Section 3: Presents a review of the adaptive speckle filters. Section 4: Introduces the proposed filtering technique. Section 5: Presents quality evaluation metrics for evaluating the quality of the speckle reduction algorithm. Section 6: Gives the experimental results on SAR Images. Section 7: Conclusion. Section 8: References

2. MATHEMATICAL MODEL OF SPECKLE NOISE

A digital image is generated from a SAR echo is represented by spatial variations of pixel intensities. The speckle noise model is approximated as multiplicative and given by

$$D_{m,n} = S_{m,n}.U_{m,n}+V_{m,n} \quad (1)$$

Where $D_{m,n}$ is the noisy pixel, $S_{m,n}$ is the noise free pixel, $U_{m,n}$ and $V_{m,n}$ represents the multiplicative and additive noise respectively and m,n are indices of the spatial locations. Since the effect of additive noise is considerably small when compared to that of multiplicative noise, Eq.(1) is written as

$$D_{m,n} \approx S_{m,n}.U_{m,n} \quad (2)$$

Applying Logarithmic compression to the noisy signal, The logarithmic compression transforms of Eq(2) to additive noise is $\log(D_{m,n}) = \log(S_{m,n})+ \log(U_{m,n})$ (3a)

$$G(m,n) = R(m,n) + N(m,n) \quad (3b)$$

The term $\log(D_{m,n})$, which is the SAR image after logarithmic compression is denoted as G(m,n), and the terms $\log(S_{m,n})$ and $\log(U_{m,n})$,which are the noise free pixel and noisy components are denoted as R(m,n) and N(m,n) respectively after logarithmic compression. This model shows the speckle noise as a multiplicative modulation of the scene reflectivity. Hence the speckle effects are more pronounced in a high intensity area than in a low intensity area.

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DESIGN & IMPLEMENTATION OF CONNECTIONLESS NETWORK SERVICE PROTOCOLS FOR MOBILE AD HOC NETWORKS

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Abstract: The stipulation of connectionless network service (CLNS) is much more demanding in mobile ad hoc networks. A lot of researches have been done so as to provide CLNS by designing various MANET protocols. However, efficient performance evaluations and relative analysis of these protocols in a common pragmatic environment have been performed only in a limited manner. A Mobile Ad Hoc Network (MANET) is a network that changes locations and configure itself on the fly. It means MANETs are used where the infrastructure is not available such as military or police exercises, disaster relief operations and urgent business meetings. In this survey the relative features, functions and reliability of each CLNS protocols are studied and discussed.

Keywords: CLNS, MANETS, Reliability

1. INTRODUCTION:

Recent advancements such as Bluetooth introduceda new type of wireless systems known as mobile ad hoc networks. Mobile ad hoc networks or "short live" networks operate in the absence of fixed infrastructure. They offer quick and easy network deployment in situations where it is not possible otherwise. Ad hoc is a Latin word, which means "for this or for this only" Mobile ad hoc network is an autonomous system of mobile nodes connected by wireless links; each node operates as an end system and a router for all other nodes in the network.

Ad Hoc networks can provide communication forcivilian applications, such as message exchanges among business meeting, medical and security personnel involved in rescue missions. These applications rely only on connectionless services because of no infrastructure available. Connectionless network service provides network layer services to the transport layer. When support is provided for CLNS, routing uses routing protocols to exchange routing information. CLNS does not perform connection setup or termination because paths are determined independently for each packet that is transmitted through a network. In addition, CLNS provides best effort delivery, which means that no guarantee exists that data will not be lost, corrupted, disordered, or duplicated.

CLNS relies on transport layer protocols toperform error detection and correction.

Following this, we recap the operation, key features & functions and major protocols in selecting a connectionless network service. We focus on journal articles and peer-reviewed conferences, thereby hopefully extracting the mostuseful and important rift of the candidate solutions.

(I) Issues need to be considered while providing CLNS:

Connectionless network service refers to communication between two network end points inwhich messages can be sent from one end point to another without prior arrangement.

CLNS are:

- Stateless having no previously definedprotocol
- Easily accessible.

But the CLNS is not ensured that the recipient is available to receive the data. The Data has to be resent several times. It's hard to filter malicious packets using firewalls. No acknowledgement willbe given during the data transfer. The main advantage of using CLNS is that it is mainly used in "real time" applications where data sending is more important.

CLNS is a type of network service at the layer 3 of the OSI model. This service does not have the reliability of the connection-oriented method, but it is useful for periodic burst transfers. Neither system must maintain state information for the systems that they send transmission to or receive transmission from. LANs operate as connectionless systems. A computer attached to a network can start transmitting frames as soon as it has access to the network. It does not need to set up a connectionwith the destination system ahead of time.

However, a transport-level protocol such as TCP may set up a connection-oriented session when necessary. Contrast this with Connectionless service, which does

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FORECASTING BITCOIN PRICES USING DEEP NEURAL NETWORKS

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ABSTRACT Project based learning is the methodology in which projects drive knowledge and is used in dedicated subjects without negotiating the coverage of the required technical material. This paper discusses the scheme and delivery of project based learning in computer science engineering as major project which adopts undergraduate creativities and emphasizes on real-world, open-ended projects. These projects foster a wide range of abilities, not only those related to content knowledge or technical skills, but also practical skills. The goal for this innovative undergrad project is to show how a trained machine model can predict the price of a cryptocurrency if we give the right amount of data and computational power. It displays a graph with the predicted values. The most popular technology is the kind of technological solution that could help mankind predict future events. With vast amount of data being generated and recorded on a daily basis, we have finally come close to an era where predictions can be accurate and be generated based on concrete factual data. Furthermore, with the rise of the crypto digital era more heads have turned towards the digital market for investments. This gives us the opportunity to create a model capable of predicting crypto currencies primarily Bitcoin. This can be accomplished by using a series of machine learning techniques and methodologies.

1. INTRODUCTION

Bitcoin is a payment system of digital cryptocurrency which is entirely decentralized. Transactions based on this network are fully cryptographed. During recent years, cryptocurrencies have had a boom in its prices, Bitcoin has been increasingly considered an investment asset by many traders. Due to its high volatile nature of bitcoin, it has become increasingly hard to predict the price of it and make good financial decisions. Implementing Machine learning in Bitcoin predictions have been focused by many investors and researchers by applying various techniques modelling with various structured data and feature dimensions. To predict the value of Bitcoin with different frequencies, machine learning techniques are used to classify Bitcoin by daily price and high-frequency price. The birth of long short-term memory (LSTM) and the artificial recurrent neural network (RNN) architecture proposed by Sepp Hochreiter and Jürgen Schmidhuber in the year 1997 has sparked a new wave of optimism in predicting the future better . The design of LSTM is the analysis of time-series data points and their sequential relationships, gave hope that we can train the model to estimate the next move before we even see it. Even though our predictions could be close to reality, our goal is to push the error of our prediction to zero .

The money that we used to understand:

As far as the written record has existed, money and banking have gone hand in hand. As discussed by Yuval Noah Harari, in the sweeping history of human race sapiens: it is easy to remember who owes what obligation to whom in kinship, but the economy of obligations is impossible to scale, above all once you add strangers. Currencies around the world are pure manifestations of sovereignty conjured by governments (Steil, 2007). Digital currencies are just the recent innovation and their widespread is a thing of the future. Bitcoins as we know it is the first-ever implemented decentralized database system used not just to store data but also used as cryptocurrencies. The peer-to-peer electronic cash system is not a walk in the park to digest. The technological improvements have outpaced the need of financial networks and outgrown the need for banks in the process. Nakamoto proposed a digital currency that would live on the network of other computers, meaning that the community would provide the processing power of their computer to keep it alive. The key to the entire system was termed as blockchain.

So, what is Bitcoin? To truly comprehend this, you need to know that Bitcoin is a network that runs on a computer program. It is nothing but zeros and ones stored on a computer, relying on a software operating at the very core of it all. It is electronic money; it is not money stored electronically. For instance, google wallet that stores credit card, debit card and the loyalty card is a digital wallet that stores money traditionally, but bitcoin has a different approach (pagliery, 2014)

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FORECASTING STOCK MARKET MOVEMENT DIRECTION USING SENTIMENT ANALYSIS AND SUPPORT VECTOR MACHINE

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Abstract: Investor sentiment plays an important role on the stock market. User-generated textual content on the Internet provides a precious source to reflect investor psychology and predicts stock prices as a complement to stock market data. This paper integrates sentiment analysis into a machine learning method based on support vector machine. Furthermore, we take the day-of-week effect into consideration and construct more reliable and realistic sentiment indexes. Empirical results illustrate that the accuracy of forecasting the movement direction of the SSE 50 Index can be as high as 89.93% witha rise of 18.6% after introducing sentiment variables. And, meanwhile, our model helps investors make wiser decisions. These findings also imply that sentiment probably contains precious information about the asset fundamental values and can be regarded as one of the leading indicators of the stock market.

1. INTRODUCTION

GENERAL

Forecasting stock market trends has been treated as one of the most challenging but important tasks. Stock market is a nonlinear and dynamic system, and investor sentiment constitutes a key factor of the financial market. With the proliferation of news, blogs, forums, and social networking websites, textual content on the Internet provides a precious source to reflect investor sentiment and predicts stock prices as a complement to traditional stock market time series data.

OBJECTIVE

The objective this project is to get an efficient and persuasive sentiment index of the forecasting of stock market how it will vary according to the day-of-week, and closing data of stock market. The returns had the tendency to decline on Mondays. Then, the effect is proved to exist in global stock markets. The reasons probably include that a much larger amount of information is produced on weekends than weekdays.

Existing System:

- Artificial neural networks (ANNs) are biologically inspired computer programs designed to simulate the way in which the human brain processes information.
- ANNs gather their knowledge by detecting the patterns and relationships in dataand learn (or are trained) through experience, not from programming.
- An ANN is formed from hundreds of single units, artificial neurons or processing elements (PE), connected with coefficients (weights), which constitute the neural structure and are organised in layers.

Disadvantages:

- Black box nature

Computational burden

2. LITERATURE SURVEY:

Title: The day-of-the-Week effects of stock markets in different countries

Author:

Year:

Description:

This paper applies the method of rolling sample test and the GARCH model to investigate the day-of-the-week anomalies in stock returns of main indices in 28 markets from 25 countries over the world. We propose the calendar effect performance ratio to measure the significance of day-of-the-week anomalies in this paper. Our study demonstrates that the Monday anomalies are prominent in SZC1, DOW, MERVAL, WIG20, FTSEMIB and STI index; the Tuesday anomalies are prominent in SPX, SPXT; the Wednesday anomalies are prominent in MEXBOL, JCI, DAX, SMI, AS51, NKY and NZSE50FG; the Thursday anomalies are prominent in SMEC, PX and PCOMP; the Friday anomalies are prominent in IBOV, IPSA, RTSI$, XU100, SENSEX, FBMKLCI, IBEX, and HSI index. We also investigate calendar effects for 6 stock market indices measured in US dollars and still find the calendar effect phenomena for these selected indices when they are in US dollars. The findings in this paper will be valuable to both the academia and practitioners.

Title: Stock market sentiment lexicon acquisition using microblogging data andstatistical measures

Author:

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HOME AUTOMATION SYSTEM BASED ON IOT

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Abstract With advancement of Automation technology, life is getting simpler and easier in all aspects. In today's world Automatic systems are being preferred over manual system. With the rapid increase in the number of users of internet over the past decade has made Internet a part and parcel of life, and IoT is the latest and emerging internet technology. Internet of things is a growing network of everyday object-from industrial machine to consumer goods that can share information and complete tasks while you are busy with other activities. Home Automation system (HAS) using IoT (Internet Of Things) is a system that uses computers or mobile devices to control basic home functions and features automatically through internet from anywhere around the world, an automated home is sometimes called a smart home. It is meant to save the electric power and human energy. The home automation system differs from other system by allowing the user to operate the system from anywhere around the world through internet connection.
Keywords: Bluetooth Wireless Technology, Smartphones, Home Automation System, Arduino Uno, Android, Bluetooth Module

1. INTRODUCTION

Since Myanmar's telecoms revolution began in 2014, the number of internet users has risen from 2 million to more than 39 million, while the number of SIM cards in circulation has risen by almost 400 percent, according to government figures. Myanmar now has at least 33 million active mobile subscriptions in a country with an official population of 53 million. Today, most mobile phones using in Myanmar are 'smart phone', which offers more advanced capabilities in connectivity issues than regular cell phones. Smart phone usage rate is reported at 80% in Myanmar. Smart phone usually support one or more short range wireless technologies such as Bluetooth and infrared, making it possible to transfer data via these wireless connections. Smart phone can provide computer mobility, ubiquitous data access, and pervasive intelligence for almost every aspect of business processes and people's daily lives [1]. One of the smart phone applications that have been developed is smart homes technology [2]. The fundamental of building an automation system for an office or home is increasing day-by-day with numerous benefits. Industrialist and researchers are working to build efficient and affordability automatic systems to monitor and control different machines like lights, fans, garage door motors, smoke detection and other requirements [3]. The use of Bluetooth technology in a smart phone today is not just for the transfer of data and files only. In recent years, Bluetooth technology is used one of the applications of home automation System. Bluetooth technology operate over unlicensed, its available at 2.4GHz frequency, it also can link digital devices within a range of 10m to 100m at the speed of up to 3Mbps but it depending on the Bluetooth device class [4]. By using home automation System, we can control household appliances. So, many manual actions are replaced by reducing human efforts and time saving. The design of Home Automation System which remains the existing electrical switches which status is synchronized in all the control system with low voltage activating method and that provides more safety for danger of electric shock and provide security to decrepit peoples. In this paper, Bluetooth based home automation system using android smart phones and Arduino UNO microcontroller board is used. Such a system will enable users to have control over home lighting, water pump and garage motors and smoke detection in their home with Bluetooth. The main requirement for user is an Android smart phone, which is present in almost every person hand nowadays, and a control circuit. The control circuit consists of an Arduino Uno microcontroller, which processes the user controls switching of devices and detect the alarm. The microcontroller and the smart phone are connected with Bluetooth wireless technology because Bluetooth technology is low cost to use and secure wireless network. This application also focuses on smoke detection with secure application against unauthorized user. Remote operation is achieved by any smart phone/Tablet etc., with Android OS, upon a GUI (Graphical User Interface) based touch screen operation.

2. LITERATURE REVIEW

In these recent years, smart home automation system has become very common of technology and especially with fast development in internet WebPages. Various smart home systems with improved technologies have been implemented. Most of the technologies are based on controlling home automation systems in android

IMPLEMENTATION OF FRONT-END WEB TECHNOLOGY USING BOOTSTRAP FRAMEWORK FOR PORTRAYALOFINSTITUTIONONWEB

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Abstract A website is a collection of Webpages, images, videos and other digital assets that is hosted on one or several Web servers, usually accessible via the Internet, Mobile phone or a LAN. The pages of websites can usually be accessed from a common root URL called the homepage, and usually reside on the same physical server. The URLs of the pages organize them into a hierarchy, although the hyperlinks between them control how the reader perceives the overall structure and how the traffic flows between the different parts of the sites.

Web technology refers to the means by which computers communicate with eachother using markup languages and multimedia packages. It gives us a way to interact with hosted information, likewebsites. Webtechnologies include the following:

1. Mark-up languages, such as HTML, CSS, XML, CGI, and HTTP (Front-end or Client-side technologies)
2. Programming languages and technologies that help create applications for the web. Some of these are Perl, C#, Java, Visual Basic, and .NET (Back-end or Server-side technologies)
3. Webserver and server technologies that enable request handling on a network, where different user shave to share the same resources and communicate with each other
4. Databases, which are extremely important for data and information storage on a computer network.

ThiswebsitehasbeendevelopedforShadanCollegeofengineeringandtechnology in an effort to make it as attractive and dynamic as possible. Compared to the existing site the proposed site in this project is more fluent and dynamic. It has more information for the visitors to access. Efforts has been put to make the site very smoot hand responsive. The college website in this project has been developed with the help of HTML, CSS mark-up languages and JavaScript as scripting language for the frond-end. Bootstrap framework was also used to build the website to make it more efficient and good looking.

Keywords: Home, Examination, Facilities, Department, Contact, Events, Responsive Web Design Strategy.

1.INTRODUCTION

1.1 General

A websiteis a collection of Web pages, images, videos and other digital assets that ishosted on one or several Web server, usually accessible via the Internet, Mobile phone ora LAN. The pages of websites can usually be accessed from a common root URL calledthe homepage, and usually reside on the same physical server. The URLs of the pagesorganize them into a hierarchy, although the hyperlinks between them control how thereader perceives the overall structure and how the traffic flows between the different partsofthesites.

Websites are typically dedicated to a particular topic or purpose, such as news, education, commerce, entertainment, or social networking. Hyperlinking between web pages guidesthe navigation of the site, which often starts with a home page. Users can access websitesona range ofdevices, including desktops,laptops,t ablets,andsmartphones.

1.2 Objective

The objective of this project is to make a website that portrays an independent institution. This website has been developed for Shadan College of engineering and technology inaneffforttomakeitasattractiveanddynamicaspossible.ComparedtotheexistingsitetheProposed site in this project is more fluent and dynamic. It has more information for the visitors to access. Efforts has been put to make the site very smooth and responsive. The college website in this project has been developed with the help of HTML, CSS mark-up languages and JavaScript as scripting language for the frond-end. Bootstrap framework was also used to build the website to make it more efficient and goodlooking.

1.3 ExistingSystem

Theexistingsystemisverysimpleandjustthenextstageoftraditionalmannerofportrayalof institutions features and facilities. The existing college website is static which makes itless interactive.The system only has basic features with none to minimal animation andwithoutproperstyling.Thissystemhadbasichtmlwithve

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LIGHTWEIGHT AND DOS RESISTANT MULTIUSER AUTHENTICATION IN WIRELESS SENSOR NETWORKS FOR SMART GRID ENVIRONMENTS

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ABSTRACT :- Using a smart grid, which increases efficiency and makes it easier to monitor critical equipment in a power grid. Online real-time applications equipped with a wireless sensor network (WSN) sense and collect data in order to provide information on power generation, transmission, distribution, and customer. Applications, the administrator, and (mobile) consumers can access the WSN directly. The communications between them must be protected from adversaries to avoid false data injection, which could cause damage either to the applications, the equipment, or the sensor nodes. Another threat comes from the characteristics of the sensor nodes, which makes them vulnerable to denial of services (DoS) attacks, i.e., flooding with false messages. In this paper, a multiuser dynamic cipher puzzle (M-DCP) equipped with TinySet is proposed. This new method provides guaranteed confidentiality in the multiuser WSN authentication and lightweight DoS resistance. The M-DCP using RC5 encryption combined with the elliptic curve digital signature algorithm (ECDSA) and partial recovery can increase brute force complexity to about 1.861 × 10 137 iterations. Furthermore, the regularization of TinySet is done to simplify the administrator's task in defining the initialization parameters. The experiment showed that the regularized TinySet required less storage space with a 64-bit index than with a 32-bit index or with Counting Bloom Filter. In addition, the average query and verification time of the proposed scheme increased only by under a second or 36% compared to Counting Bloom Filter-based authentication. This is still appropriate for implementation in the WSNs

1. INTRODUCTION

1.1 GENERAL Using a smart grid, which increases efficiency and makes it easier to monitor critical equipment in a power grid. Online real-time applications equipped with a wireless sensor network (WSN) sense and collect data in order to provide information on power generation, transmission, distribution, and customer. Applications, the administrator, and (mobile) consumers can access the WSN directly. The communications between them must be protected from adversaries to avoid false data injection, which could cause damage either to the applications, the equipment, or the sensor nodes. Another threat comes from the characteristics of the sensor nodes, which makes them vulnerable to denial of services (DoS) attacks, i.e., flooding with false messages. In this paper, a multi user dynamic cipher puzzle (M-DCP) equipped with Tiny Set is proposed. This new method provides guaranteed confidentiality in the multiuser WSN authentication and lightweight DoS resistance. The M-DCP using RC5 encryption combined with the elliptic curve digital signature algorithm (ECDSA) and partial recovery can increase brute force complexity to about 1.861 × 10137 iterations. Furthermore, the regularization of Tiny Set is done to simplify the administrator's task in defining the initialization parameters. The experiment showed that the regularized Tiny Set required less storage space with a 64-bit index than with a 32-bit index or with Counting Bloom Filter. In addition, the average query and verification time of the proposed scheme increased only by under a second or 36% compared to Counting Bloom Filter-based authentication. This is still appropriate for implementation in the WSNs.

1.2 OBJECTIVE M-DCP is complemented with Tiny Set that organizes user addition, removal, and query with efficient and compact storage. Although Tiny Set increases the user addition time at the administrator node (which acts as the user manager), the storage overhead decreases by a minimum of 77% and theverificationatthesensornodesincreasestounder0.5second compared to CBF.

2. EXISTING SYSTEM

➢ Cooperative Fuzzy Artificial Immune System (Co-Fais)

➢ The security of WSNs has been approached in various different ways.

➢ Existing system is prone to DoS.

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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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COMPARATIVE ANALYSIS OF NON-PERFORMING ASSETS OF PUBLIC AND PRIVATE SECTOR BANKS

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ABSTRACT: Indian banking system was not sound at the time of independence. In 1949, 2 major actions were taken with a view of structural reforms in the banking sector. Banking regulation Act, which provided extensive power to RBI over the commercial banks and another was the nationalization of RBI. Banking regulation act provided excessive power the RBI. In a free enterprise economy, commercial banks operate like any other business entity and gain private profit so at the time of independence it was viewed that the freedom of commercial bank was not in the harmony of the socialistic pattern of society, so they were nationalized in 1969 to establish the control over these banks. The last decade has seen many positive developments in the Indian banking sector. The policy makers, which comprise the Reserve Bank of India (RBI), Ministry of Finance and related government and financial sector regulatory entities, have made several notable efforts to improve regulation in the sector. The sector now compares favourable with International Journal of Business Administration and Management. ISSN 2278-3660 Volume 7, Number 1 (2017), © Research India Publications http://www.ripublication.com 103 banking sectors in the region on met rics like growth, profitability and non-performing assets (NPAs).A few banks have established an outstanding track record of innovation, growth and value creation. This study will attempt to assess the impact of private banks on the traditional public sector banks and a comparative analysis of their working efficiency.

KEYWORDS: Comparative analysis , public & private sector banks.

1. INTRODUCTION

Advances and Loans Allowed by company banks really are invaluable for people intensely, companies, businesses, and modern concerns. The expansion and development of business exercises have been changed to a gigantic amount through fiscal financing. Loans and improvements bolstered by banks help with fulfilling here today and longterm money associated prerequisites of organizations. Conceding loans and advances for financial development might possibly be the prime duty of banks. Loaning by the bank's department is generally pumped on the lands which it will get the impact of resources being traded from the frame to gainful intentions, together with these comparative lines that the market grows.

Nonetheless how Toward devoting conveys a danger termed credit chance in addition, which stems from the downturn of debtor Non-performing. Resource alludes to loans that are in danger of default. After the debtor has failed to make intrigue or primary payments for a couple of weeks, in the authentic point the bank loan amount is considered being a Non-performing Asset. Non-performing Assets (NPAs) are catchy and opportunity for the money associated with foundations considering the fact they anticipate premium payments for the cost.

Banks need to dictate Non-performing resources promote directly to the corresponding three categories in light of this period where the advantage has stayed propounded along with the realizability of this levy

1). Substandard Assets (A substandard resource is just one that includes stayed NPA to get a period not specifically or corresponding to annually),

2. Dicey Assets (With impact from March 3 1, 2005, an asset has to be assigned fetched much, as it's stayed NPA for more than per year),

3. Mis-fortune Assets would be such advantages that are believed about uncollectible.

Now's a study paper A benefit is assigned non-performing resource (NPA) in the event the debtor won't pay obligation is crucial and excitement for a little while of 180 days. Depending on March 2004 But, the default status is going to be led in a debtor in case obligation isn't paid for ninety days.

Record Of this issue:

Extensively, Non-Performing Asset (NPA) is distinguished because of propelling, where installation of settlement or premium of a portion of crucial (when there has to be an incident of duration loans payable from the industry venture banks) or possibly remains outstanding for a specific period. In India, that really is of NPAs has shifted after an ideal moment. As signaled by the Narasimhan Committee Report (1991), those benefits (advances, invoices down declared, overdrafts,

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DYNAMICS OF CURRENCY FLUCTUATION

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ABSTRACT:
While keeping up access to money, global companies are likewise concentrating on their FX exposures — as debasement hazard compromises inflows, the expense of subsidizing remote trade outpourings increments, and the worth and credit danger of FX possessions held in increasingly helpless nations and banks comes into question.

Recognizing FX risks

Before figuring out what move treasury should make to oversee FX chance, the initial step is to understand the degree of hazard and where it emerges:

Build up remote money prerequisites. Income gauging is fundamental to decide the measure of money an organization needs to hold, both at bunch level and in each outside cash. While determining is a customary action for treasurers, it is especially significant at present — given the dangers of cash depreciation, nearby bank counterparty chance, snap capital and money controls, and so forth. While every business is extraordinary, the choice ought to be driven by momentary income determining, hazard resilience, and organizing significant installments.

Stress test income estimates. In the present condition, the potential for determining blunder — both in recognizing and measuring hazard — is higher than regular given the flightiness of interest and interruption in gracefully chains. Stress testing to survey the effect of potential spikes or troughs is a significant method to distinguish liquidity squeeze focuses and potential FX dangers.

Look past the business to distinguish dangers. FX hazard the board on occasion of pressure takes on an unexpected measurement in comparison to during progressively considerate conditions.

While treasurers commonly take a gander at FX hazard as far as income and accounting report introduction, FX chance ramifications expand a lot further. Numerous MNCs sell comprehensively in their gathering useful money, for example USD. Where these organizations offer to clients that work in nearby money, yet pay USD, the client takes on the related FX hazard. Be that as it may, this FX chance turns into the MNC's credit hazard in their records receivable. In like manner, many flexibly chains are USD-named. At the point when a MNC's non-US providers purchase materials and assembling parts in USD, they take on FX chance; be that as it may, this hazard at that point turns into the MNC's provider chance.

KEYWORDS: Currency, Fluctuation

Supporting FX dangers :

Most corporates support in the FX forward business sectors, however as market liquidity has evaporated, and unpredictability expands, treasurers may need to survey their methodology:

See credit limits. The spike in instability is making some huge negative swings in the imprint to showcase valuations of firms' current subsidiary supports. This more prominent negative valuation of these supports diminishes the limit of FX suppliers to execute new fences, and credit lines become completely used. Treasurers ought to evaluate the degree to which supporting credit lines have been affected by the ascent in unpredictability to ensure they can execute new fences when required. Where credit lines are used, treasury may need to utilize less credit concentrated supporting options, for example, FX alternatives. Maintain a strategic distance from under-supporting. Unusualness in estimates makes supporting progressively troublesome. The normal inclination on occasion of vulnerability is to support less, yet this could prompt higher FX hazard. One methodology is to fence dependent on midpoints, and gradually increment support proportions as perceivability increments.

2. PRIMARY DATA:

I have assembled data by associating with traders who are trading money auxiliaries.

3. SECONDARY DATA:

With an authoritative objective of data evaluation I have taken four sets traded NSE. To get more information about this' I accumulated data from objectives, articles and journals related to money partner advertise. for academic clarification behind data I indicated NISM money subordinate module practice manual.

Test SIZE:
USD/INR
GBP/INR
EUR/INR

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ONLINE TRADING AT ANGEL BROKING

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KEYWORDS: ONLINE TRADING ANGEL BROKING.

1. INTRODUCTION:

In order to construct the transparency, efficiency available, interesting depth, NSE offers an entirely automated display screen largely grounded trading system known as National Exchange pertaining to Automated Trading (NEAT) even called Online Trading. This particular method works very well for trading in the management hub industry sector by just the trading associates of its in the consolidated states to manage together with huge effortless and efficiency.

This NEAT or possibly online trading plan has lent considerable level on the marketplace by allowing many users at seacoast to coast to exchange therefore and simultaneously narrowed the spreads greatly. An excellent unique consolidated purchase guide for every share displays, on a real time foundation, industry orders coming out of all over the national nation. Could make NSE a real national industry. It's elevated info effectiveness by simply enabling quicker usage of cost fine info in marketplace charges. High velocity of delivery of trades has enhanced functional effectiveness. It is able to easy for industry individuals to start to watch the entire sector, that created business much more sharp, resulting in elevated trader self-confidence. Since evaluation trail is completely ideal & disputes might be solved by logging the industry delivery process in its entire, most investors regardless of the financial standing of theirs or maybe actual physical place are assured for reasonable treatment.

Technology has converted the ground selection from the inventory marketplaces, they can't demand a trading flooring and also they'll could exchange coming out of the one region, program investors inside the national state. Before display primarily based trading was presents Local Stock Exchanges were definitely participating in a sizable part in the management centre marketplace as there have been neighborhood traders. Today all the switches have become set designed for internet trading according to the stipulations of SEBI.

2. EVOLUTION OF ONLINE TRADING:

On-line trading is getting extremely popular within the last year or perhaps two because of the ability of ease and use. Number of companies have eliminated online to fulfill up their customer's needs, enabling these to operate if they need and how they might like to. Trading may be the investing of products and services yet, in current context this identifies investing of economic services which includes securities, through NET.

3. TRADING:

Trading within dematerialized investments is quite like trading in actual physical securities. The main distinction might be the point that in sufficient time of settlement, rather than shipping in the actual physical type, it's usually completed through profiles transfer.

Trading in the stock market may be accomplished only through documented run member's of the stock market whether or perhaps not the securities will keep bodily kind of Demat type. DP's function is helping the settlement in demat type merely. Trading within dematerialized investments is currently sold at NSE(National share exchange), BSE(Bombay share exchange), DSE(Delhi share exchange), MSE(Madras share exchange), and ISE(Inter connectivity stock exchange). These types of switches have areas extraordinary for trading in an area along with dematerialized investments wherein industry could be attained perhaps in actual physical or maybe just demat type depending on the number of the supplying.

4. NATIONAL SECURITIES DEPOSITORIES LIMITED: (NSDL)

By November 1996 NSDL commenced its functions. Holding and managing of securities in the electronic form gets rid of issues that normally linked with physical certificates, like traumatisme loss in transportation, issue of negative delivery etc., This facilitates settlement periods Further. Number of users of NSDL depository product is raising steadily. It is actually the endeavor-to keep all modern-day and potential uses of NSDL depository system.

The investors of National Securities Depository Limited (NSDL) are Industrial Creation Bank of India (IDBI) Unit Trust of India (UTI), HDFC Bank, Krauts Bank Deena Traditional bank, Global Trust Traditional bank, Standard Chartered Traditional bank, Citibank NA and Hong Kong as well as Shanghai Banking Firm Limited

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PERFORMANCE OF HEDGE FUNDS

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KEYWORDS: Performance of hedge funds.

ABSTRACT
Any aim perusal of this foundation of financial evolution of this grown and of those growing economies of this world renders you using inevitable belief that economic strategy generally and fiscal system particularly have played have been playing with a critical part in initiating and accelerating the development of the market (Jayanna S 1990).The financial system as an integral aspect of the financial system, oils the wheels of financial system very efficiently and economically. The main function of any fiscal strategy is to ease the allocation and installation of economic resources both spatially and temporally generally speaking (Merton Robert, 1995) and also to ease the transfer of capital out of excess impending units to shortage pending units specifically; that subsequently affects the economies, investment decisions, technological creation and long term growth prices.

1. INTRODUCTION:

In the present financial problem financing expenses are dropping and vacillations in the offered sector have positioned speculators in disarray. One thinks that its difficult to use choice on the venture. This is essential, on account of ventures are unsafe in nature and monetary experts have to consider various parts before placing methods into speculation highways. These components include hazard, go back, the unpredictability of liquidity as well as offers. The process goal of contrasting curiosity in frequent shop and value shares programs is breaking down the demonstration of shared assets with the benchmark of theirs and also contrasting them and values by making use of alpha, beta, return, and hazard as being a boundary. Genuine info had been taken for ascertaining hazard, beta, alpha and return.

The investigation is going to manage fresh speculators that have to put resources into typical supports plans in value giving info about precisely how to quantify the hazard as well as the return of particular shared market conspire. The investigation prescribes innovative monetary experts to choose shared assets instead of values as an outcome of the higher industry as well as hazard precariousness. The shared store is an endeavour that capacities as a financial centre individual among fiscal business as well as experts community. They begin asset planning, assignment of improvement as well as the property of financial markets in the economic system. The essential objective of the typical property is gathering the assets from the massive amount of speculators that for probably the most part delay to get into legally in the capital industry due to various limitations, for instance, absence of capability, adept info, adequate assets, accessibility of good time for study and research, so forth along these lines the present evaluation is an unassuming exertion to examine the demonstration of shared assets like a financial delegate in the common public. The examination has centred on three important perspectives. Within the very first place, delivery assessment of shared reserve according to financing perspective, dissecting the several hazards as well as a return while placing methods to financial store. Next, the business presentation assessment of the shared subsidize based on the speculators perspective that has contributed the cash of theirs to popular assets. The discernment of theirs, fulfilment, targets, inclination, conduct, demeaour, so forth with regard to popular assets are considered. 3rd angle is in touch with the presentation of shared property in placing to the management standards of theirs whether the typical assets are proceeding based on requirements or perhaps not.

2. GLOBAL SCENARIO:

The cash associated segment is in a process of fast change. Improvements are proceeding all around as a part of the common fundamental changes designed for enhancing the earnings as well as usefulness of the economic system in the greatly powerful world. The task of an incorporated money connected foundation is invigorating and do monetary development. The US twenty eight billion Indian monetary place has developed at around fifteen % and has

shown dependability throughout the prior rather some time, in any case, when various markets in the Asian place were confronting an urgent situation. This particular soundness has become throughout the power that the In-nation framework as well as the account organizations have worked through these years. The financial division has stayed up together with the growing requirements of different and corporate borrowers. Banks, capital market participants as well as

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ESTIMATING THE RUNNING COSTS OF COMMERCIAL BUILDINGS: ARTIFICIAL NEURAL NETWORK MODELING

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Abstract: Running costs of a building is a substantial share of its total life-cycle cost (LCC) and it ranges between 70-80% in commercial buildings. Despite its significant contribution to LCC, investors and construction industry practitioners tend to mostly rely on construction cost exclusively. Though the early stage estimation of running costs is limited due to the unavailability of historical cost data, several efforts have been taken to estimate the running costs of buildings using different cost estimation techniques. However, the prediction accuracy of those models is still challenged due to less quality and amount of data employed. This study, therefore, developed an artificial neural network (ANN) model for running costs estimation of commercial buildings with the use of building design variables. The study was quantitively approached and running costs data together with 13 building design variables were collected from 35 commercial buildings. The ANN model developed resulted in a 96.6% perfect correlation between the running cost and building design variables. The testing and validation of the model developed indicate that there is greater prediction accuracy. These findings will enable industry practitioners to make informed cost decisions on implications of running costs in commercial buildings at its early stages, eliminating excessive costs to be incurred during the operational phase.
Keywords: Cost modeling, Operations cost, Maintenance cost, Building design variables, Decision-making, LCC.

1. INTRODUCTION AND LITERATURE REVIEW

Usually, costs incurred during the operational phase of a building responsible for a substantial share of its Life Cycle Cost (LCC). Some buildings have inherently higher running cost than others, such as commercial buildings. For example, the running costs of commercial buildings account for over 69% of the total LCC (Wang et al. 2014). Similarly, Wong et al. (2010)revealed that the running cost of an office building varies between 72 to 81% of its total LCC. Despite its contribution to the LCC structure, often running cost is given less focus in investment decision making and investors tend to mostly rely on initial cost alone.

A recent study on the review of existing models for LCC estimation revealed that there is no simple model for estimating the running cost of buildings to date (Krstić and Marenjak 2017). The application of available methods and models for the running cost estimation of buildings are also limited to the later stage of building life cycle as these models require an extensive set of operational cost data (Krstić and Marenjak 2017). For example, Al-Hajj and Horner (1998) have presented a running costs model for institutional buildings, with eleven cost elements and to an accuracy of 1.13%. Similarly, Kirkham et al. (2002) and El-Haram et al. (2002) have developed WLCC models for hospital buildings where cost components such as facilities management costs, energy costs, maintenance costs, residual costs, and discount rate were determinants of WLCC. Early-stage supportive running cost estimation models are therefore essential as it provides implications of costs to be incurred during the operating phase of buildings at early design stages of building constructions.

Estimation of cost of a product, system, or service based on its determinants is a well-known and approved method for cost estimation over the years. For example, Kirkham et al. (1999)have developed an energy cost model for sports centres based on building design variables such as the number of users and floor area. However, Krstić and Marenjak (2017) stressed that these models are not based on adequate historical cost records and not based on the available cost structure, rather than standard cost structure. Authors further indicate that the models developed so far ignore some important factors such as the age, location, level of occupancy, and standards of operation.

Deciding through which type of building to include in a forecasting model is not the only problem. The choice of modelling technique is also important (Boussabaine et al. 1999). Among the statistical approaches, regression techniques deserve attention due to relative ease of implementing and requirement of less computational power than other statistical

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MIX DESIGN OF CONCRETE BY BIS METHOD

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Abstract—The quality of concrete in a structure is determined not only by the proper selection of its constituents and their proportions, but also by appropriate techniquesin the production, transportation, placing, compacting, finishing, and curing of the concrete of the actual structure, often at a job site..Although these processes have an impact on the actual quality of concrete
In order to obtain a strong, durable and economical concrete mix, it is necessary to understand the characteristics and behavior of the ingredients

1. INTRODUCTION

Concrete is the most widely used man-made construction material. It is obtained by mixing cement, water and aggregates (and sometimes admixtures) in required proportions. The mixture when placed in forms and allowed to cure becomes hard like stone. The hardening is caused by chemical action between water and the cement and it continues for a long time, and consequently the concrete grows stronger with age. The hardened concrete may also be considered as an artificial stone in which the voids of larger particles (coarse aggregate) are filled by the smaller particles (fine aggregate) and the voids of fine aggregates are filled with cement. In a concrete mix the cement and water form a paste called cement water paste which in addition to filling the voids of fine aggregate acts as binder on hardening, thereby cementing the particles of the aggregates together in a compact mass.
The strength, durability and other characteristics of concrete depend upon the properties of its ingredients, on the proportions of mix, the method of compaction and other controls during placing, compaction and curing. The popularity of the concrete is due to the fact that from the common ingredients, it is possible to tailor the properties of concrete to meet the demands of any particular situation. The advances in concrete technology have paved the way to make the best use of locally available materials by judicious mix proportioning and proper workmanship, so as to produce concrete satisfying performance requirements.

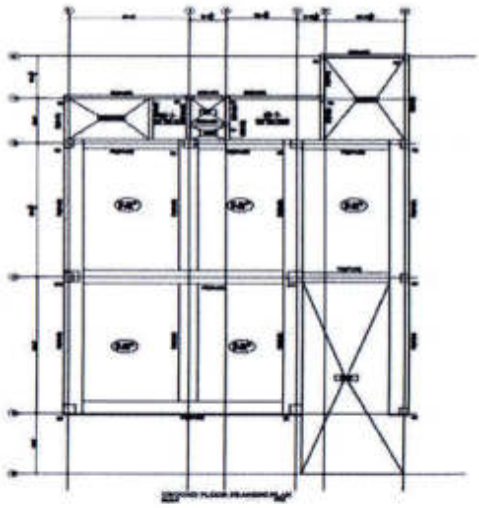
2. CONSTITUENTS OF CONCRETE

The constituents of modern concrete have increased from the basic four (Portland cement, water, stone, and sand) to include both chemical and mineral admixtures. These admixtures have been in use for decades, first in special circumstances, but have now been incorporated in more and more general applications for their technical, and at times economic benefits in either or both fresh and hardened properties of concrete.
The main constituents of concrete are:

(i) Cement
(ii) Aggregates
(iii) Water
(iv) Admixtures

3. CEMENT

Cement is a well-known building material and has occupied an indispensable place in construction works. There is a variety of cements available in the market and each type is used under certain conditions due to its special properties. The cement commonly used is portland cement, and the fine and coarse aggregates used are those that are usually obtainable, from nearby sand, gravel or rock deposits. In order to obtain a strong, durable and economical concrete mix, it is necessary to understand the characteristics and behaviour of the ingredients



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ESTIMATION OF RESIDENTIAL BUILDING USING LOW COST MATERIALS

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Abstract: Affordable housing mainly deals with effective costing and following of sustainable building techniques which helps in reducing the cost of construction without sacrificing the strength, durability and performance. The plan of 2BHK have been considered for Residential building. The total residential building is divided into two parts i.e., Structural and non Structural. As the cost of cement takes major part of total building cost, so we adopted fly ash by replacing cement with percentages of 30%, 40%, 50% for structural elements. The strength tests such as compressive, split test, flexural test have been calculated. From the test results, 40% replacement of fly ash gave required strength for single storey building. For Non- structural elements, the low cost materials such as concrete frames, hollow concrete blocks etc were adopted .This project recommends plan and sustainable materials adopted for a single storied building. After assigning low cost materials for structural and Non- structural elements of building, the quantity and cost is estimated. The overall cost is reduced up to 30% compared to conventional building cost.

Keywords : Sustainable building techniques, Building materials , Estimation

1. INTRODUCTION

Housing is a basic need of human being. But this is out of the means of low income house holder who constitute majority of population in our country. In India maximum affordability of household was defined to be 5.1 times the household's total gross income as compared to the developed countries. Low cost housing is a different concept which deals with effective costing and following of sustainable building techniques. There is a huge misconception that low cost housing is suitable for only sub normal works and they are built by using cheap building materials of low quality. The fact is that Low cost housing is done by proper management of resources. The production of Portland cement is not only costly and energy intensive, but it also produces large amounts of carbon emissions. The production of one ton of Portland cement produces approximately one ton of co2 in the atmosphere. Fly ash is a byproduct of the combustion of pulverized

coal and is collected by mechanical and electrostatic separators from the fuel gases of thermal power plants where coal is used as a fuel. Fly ash is commonly used in concrete in replacement ranging from 0%-30% by weight of the total cementitious material. Large quantities of fly ash are available around the world at low cost and the use of HVFA seems to offer the best solution to rising cement demands. The use of HVFA in concrete has recently gained popularity as a resource efficient, durable, cost effective, sustainable option for OPC concrete application.

The low cost materials such as Hollow concrete blocks , spiral stair case, concrete flooring , pre cast doors and window frames are recommended for cost reduction of Residential building.

2. CONSTRUCTION OF 2 BHK :

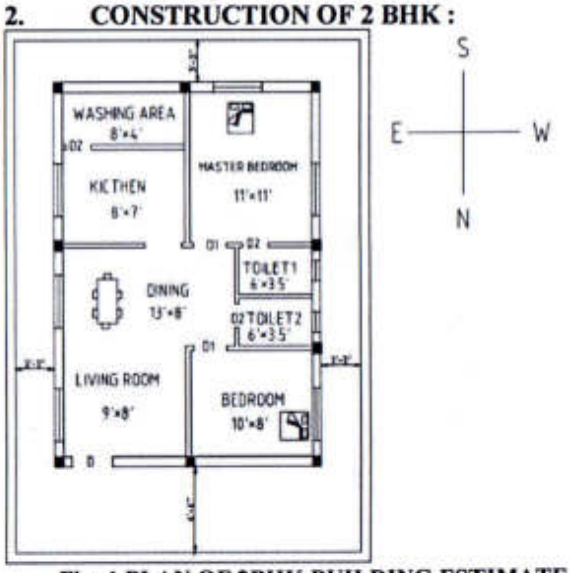

Fig: 1.PLAN OF 2BHK BUILDING ESTIMATE

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CONSTRUCTION PLANNING AND MANAGEMENT OF RESIDENTIAL BUILDING USING PRIMAVERA

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Abstract Indian Construction industry now days are facing with a lot of problem which is produce the lost of a billion ringgit. The main factor which gives the instability to the construction industry is a cost and time planning. By referring to the news in mass media the cost and the time of the project will be the first factors that lead in the uncompleted of the project or the delayed of the project. This phenomenon will cause a lot of problem to the client which is the client must do the payment back to the bank form the loan that the bank provided although the project did not complete. Cost of the project is the factor that usually may lead of the project delayed or uncompleted The time scheduling also is the major factor that lead to the delayed or the uncompleted of the project. The construction company is facing a tough challenge in the time planning of the project because without the proper planning the time factor will cause the lost of the profit to the company. All of the construction company have planning and scheduling the time first before starting the project and some of the company did not follow well the time constraint of the project and this situation will lead the delayed of the project. Sometimes the construction companies which are planning their time for the project did not concern about the environment factor when doing the planning. The environment factor must be consider when doing the planning because the bad impact of the environment factor to the scheduling of the project will cause the delayed of the project and at the same time will make the loss of profit to the company. Thus it is important to carry a study on schedule developing for a project

I. INTRODUCTION

India is the one of the developing countries which is concentrating in the development of the new buildings and at the same time maintaining all existing building. The government is spending a lot of money for the new infrastructure works especially schools, hospitals, universities and low cost housing projects. With this investment, many contracting companies are being set up. At the same time multinational companies are looking forward in exploring the construction industry in India. By looking for the expenditure of the construction industry, the project management profession is being very valuable for the construction companies in order to make sure the projects can be completed successfully. The project management knowledge becomes the critical part in the project because it contains the knowledge in controlling the cost, scheduling, and resources. In this Project Management field, project manager plays very important role in the construction project. Project management professionals are responsible for ensuring the project completes successfully, thus it is important for them to have experience and knowledge in Project Management techniques.

II. LITERATUREREVIEW

The life cycle is the only thing that uniquely distinguishes projects from non-projects". If that is true, then it would be valuable to examine just what role the so-called Project life cycle plays in the conduct of project management. The basic life cycle follows a common generic sequence: Opportunity, Design & Development, Production, Hand-over, and Post-Project Evaluation. A project can be defined as the work required Taking an opportunity and converting it into an asset." In this sense, both the opportunity And asset are singular, with the implied use being for generating benefit rather than Consumed as a resource in normal operational activity over a prolonged period. (Kerzner, 1995).

III. METHODOLOGY

The Project Management Module is comprehensive, multi-project planning and control software built on Oracle and Microsoft SQL server relational database for enterprise-wide project management scalability. The Project Management module can stand alone for Project and resource management, or it can be used in conjunction with other products, including the Time sheets module, Methodology Management module and PRIMAVERA"s Web application The project Management module enables organization to store and manage its projects in a central location. The module

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CONSTRUCTION PLANNING & MANAGEMENT OF COMMERCIAL BUILDING USING PRIMAVERA_

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ABSTRACT—The main objective of this project is to analyze and design a RCC framed structure with and without diaphragm for seismic forces.For this analysis we considered a college building [G + 3] (3 dimensional frame).In order to compete in the ever growing competent market it is very important for a structural engineer to save time, as a sequel to this First architectural plan and layout of a college building has been prepared in AUTOCAD and the analysis and design is done by using the software package STAADPRO. In this first the analysis and design is done by applying dead load, live load and floor loads and the results are tabulated. Then again the analysis and design is repeated by applying the panel properties with pressure intensity on the panel and the results are tabulated.The results obtained from the above two steps are compared and are represented graphically

1. INTRODUCTION

The construction industry mainly caters to the need of providing shelter, harnessing energy and creates public access. The basic human needs have not changed over time even though the process and environment in which designer or constructor operate have become increasingly more complicated. Rapidly escalating technology has made challenging construction possible which were impossible to imagine in the previous generations. India is the one of the developing countries which is concentrating in the development of the new buildings and at the same time maintaining all existing building. The government is spending a lot of money for the new infrastructure works especially schools, hospitals, universities and low cost housing projects. With this investment, many contracting companies are being set up. At the same time multinational companies are looking forward in exploring the construction industry in India

By looking for the expenditure of the construction industry, the project management profession is being very valuable for the construction companies in order to make sure the projects can be completed successfully. The project management knowledge becomes the critical part in the project because it contains the knowledge in controlling the cost, scheduling, and resources. In this Project Management field, project manager plays very important role in the construction project. Project management professionals are responsible for ensuring the project completes successfully, thus it is important for them to have experience and knowledge in Project Management techniques. The construction management it may refer to the contractual arrangement under which is a firm supplies construction management service to an owner. However, in its more common 7 use it refers to the act of managing the construction process which is the way to manage the basic resource of construction. The resource included workers and subcontractor, equipment and construction plant, material, money and time. Skillful construction management results in the project completion on time and within budget. Time management is on keys of effective project management. They are a few problems effect the time management such as a rework activity, the change of job specification without direct notification, work overload, unreasonable time constraint and etc. The impact that from poor time management will cause delay or event worst effect mostly on cost as it is correlates to each other. As a solution of this situation the planning and scheduling will be the best method that can be used to overcome with this problem. With the proper planning and scheduling it will assist the project manager in completing the project within the time and meet the aim and objective of the project.

2. OBJECTIVE OF STUDY

For conducting this study the following objectives are proposed and these objectives will be the guideline for the production of the final thesis.

To learn the various interdependencies between activities of a construction project.

To sequence the activities in the most appropriate way.

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SHEET PILE TECHNOLOGY

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ABSTRACT—Piling is a type of ground treatment constructed to resist the lateral pressure of soil when there is desired change in ground elevation. Sheet pile retaining walls are usually used in soft soils and when there is excess water in the surrounding subsoil, which interferes with the foundation of structures. In case of soft soils sheet piles act as retaining walls for sliding soil and in the later case they are used as water barrier for stopping the surrounding water penetrating the foundation leading failure of structure. In this particular work sheet piles are used for retaining the non-cohesive soil sliding frequently interrupting the earth-work in excavation as well as for stopping the excessive water penetrating through the soil from surroundings. Scope of this work is to study the Topography of the soil, Engineering Properties to reflect the type and selection of sheet pile suitable and methods of driving.

I. INTRODUCTION

I. A deep foundation is distinguished from shallow foundation by the depth they are embedded into the ground. Poor soil and large design loads at shallow depths are some of the reasons to recommend deep foundation. There are different terms used to describe deep foundation including the piles which are generally driven into ground in-situ. Sheet piles can be made up of timber, steel, reinforced concrete, etc.

II. Sheet piling is a form of driven piling using thin interlocking sheet of steel to obtain a continuous barrier in the ground. They are used for the stabilization of the soil. The main application of sheet piles is in retaining walls and cofferdams erected to enable permanent works to proceed. Normally, vibrating hammer, t-crane and crawle drilling are used to establish sheet piles. Material used can be estimated by driving them 1/3 above ground and 2/3 below ground, but this can be altered depending on the environment.

III. Generally tests are performed on soils to obtain physical properties of soil around a site to design earthworks and foundations for proposed structures. They can be performed either in laboratory or on site. Some of the laboratory tests performed is particle size analysis, direct shear test, soil compaction test, etc,.

IV. Particle size analysis is done to determine the soil gradation. The distinction between coarse and fine particles is usually made at 75μm. The rate of sedimentation is used to determine the particle gradation

V. Direct shear test determines the consolidated, drained strength properties of a sample. A constant strain rate is applied to a single shear plane under a normal load, and the load response is measured. If this test is performed with different normal load, the common shear strength parameters can be determined.

VI. Recently, development of construction methods for densely populated urban area is emphasized. For example, in order to ease traffic congestion, railroads are re-laid on viaducts. For this project, structures are usually constructed very close to existing structures, and the space allowed for construction work is limited. In addition, it is required to reduce costs, as well as minimizing the impact to the environment, such as noise, vibration and disposals from construction work. Sheet-pile Foundation, which combines the footing and sheet-piles, proposed as a new foundation form (Koda et al. 2003, Nishioka et al. 2004) is one solution. Because of the confinement of the ground is increased by the sheet-piles, both bearing capacity and horizontal resistance of the SPF are improved compared to those of the shallow foundation. Therefore, the applicability became wider than that of the shallow foundations. For example, SPF can be adopted on the loose sandy ground to which the pile foundation has been usually applied. The construction cost of SPF is almost the same as that of the shallow foundation and more competitive than that of the pile foundation. On the other hand, since the pile work is not necessary, it can avoid various disadvantages of pile foundation, such as noise, vibration and the disposal of surplus soil.

On the basis of the materials from which they are made, the different types of sheet piles are:

a) Timber/wood sheet piles
b) Reinforced concrete sheet piles
c) Steel sheet piles
d) Composite

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EXPERIMENTAL STUDY AND THE EFFECT OF ALKALI TREATMENT WITH TIME ON JUTE POLYESTER COMPOSITES

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ABSTRACT—The main aim of the work is the treatment that is to be given to enhance the surface properties of the fibers in view of obtaining better interfacial reaction between the matrix and the fiber of the composite, which in turn enhances the mechanical properties of the laminate on the whole. The work also focuses on the effect of alkaline solution treatment on the fibers. Numbers of laminates are prepared with different soaking time to be able to subject them to various test methods.

Key words: Alkali treatment, Natural fiber, laminate

1. INTRODUCTION

Currently, many research projects are devoted to the utilization of cellulose-based fibers as reinforcement for plastics. However, these fibers are mainly composed of cellulose, hemi- cellulose, and lignin. In order to expand the use of cellulose-based fibers for composites, it is useful to have the information on fiber characteristics and factors which affect performance of thefibers

P. J. Roe, M. P. Ansell in (1985),

[1] studied the behavior of the jute fiber. Raw jute fiber has been incorporated in a polyester resin matrix to form uni- axially reinforced composites containing up to 60 vol % fiber. The tensile strength and Young's modulus, work of fracture determined by Charpy impact and inter-laminar shear strength have been measured as a function of fiber volume fraction. Derived fiber strength and Young's modulus were calculated. Polyester resin forms an intimate bond with jute fibers up to a volume fraction of 0.6, above which the quantity of resin is insufficient to wet fibers completely. He compared properties of jute and glass fibers, and on a weight and cost basis jute fibers are seen in many respects to be superior to glass fibers as a composite reinforcement. Jute fiber forms an intimate bond with polyester resin, and can fully or partially replace glass fiber without entailing the introduction of new techniques of compositefabrication.

A.K. Mohanty, Mubarak A. Khan,

G. Hinrichsen in (1998),[2] investigated on surface modifications of two varieties of jute fabrics, i.e. hessian cloth (HC) and carpet backing cloth (CBC), involving de waxing, alkali treatment, cyanoethylation and grafting, were made with a view to their use as reinforcing agents in composites based on a biodegradable polymericmatrix,Dipa Ray, B.K.Sarkar, A.K.Rana and N.R .Bose in (2001),[3] investigated the effect of alkali treatment of 5% alkali (Noah) solution for 0, 2, 4, 6 and 8 h at 30°C.

Joung-Man Park, Son Tran Quang, Byung-Sun Hwang, K. Lawrence De Vries in (2005),[4] investigated on interfacial evaluation of the untreated and treated Jute and Hemp fibers reinforced different matrix polypropylene-maleic anhydride polypropylene copolymer (PP-MAPP) composites by micromechanical technique combined with acoustic emission (AE) and dynamic contact angle measurement.

Thi-Thu-Loan Doan, Hanna Brodowsky Edith Mader in (2006),[5] studied the thermal, dynamic mechanical and aging behavior are critical issues for the application of jute/polypropylene composites.

H.M.M.A. Rushed, M. A. Islam and F. B. Rizvi in (2006),[6] experimented on natural fibers such as flax, hemp, jute, kenaf. In the research work, jute fiber reinforced polypropylene matrix composites were developed by hot compression molding technique with varying process parameters, such as fiber condition (untreated and alkali treated), fiber sizes (1, 2 and 4 mm) and percentages (5%, 10% and 15% by weight). An attempt was made by U. S. Ishiakul, X. Y. Yang, Y.W. Leong, H. Hamada, T. Semba, and K. Kitagawa in (2007),[7] at increasing both toughness and rigidity by simultaneous toughening andreinforcement.

E. Sinhal,S.K. Rout P.K. Barhai in (2007),[9] all together treated the jute fibers with argon cold plasma for 5,

10 and 15 min. Structural macromolecular parameters of untreated and plasma treated fibers were investigated using small angle X-ray scattering (SAXS), and the

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DESIGN AND 3D PRINTING OF FOOT AND ANKLE-FOOT ORTHOSES

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ABSTRACT- Many people with disabilities require positioning of the feet and stability at the ankles, which is achieved through the use of an ankle-foot orthotics (AFO). Models currently in use are bulky, uncomfortable, and hard to put on, especially for pediatric patients. These patients visibly have trouble walking as their oversized shoes, necessary for the insertion of the AFO, get in the way. The goal of this research is to design a AFO to solve the current issues. The design is constructed with many considerations taken into account. Finally, structure is modeled in Creo (Pro-E) software and saved in IGES format, Then the model is imported in Ansys software for analyzing various stresses, at last manufacturing process takes place with the help of 3D printing.

1. INTRODUCTION

The Ankle-foot-orthotics (AFOs) is externally applied assistive devices that are prescribed to the patients with neuromuscular dysfunctions in order to improve abnormal lower limb motor functions. AFO's are mainly used to control the range of motion of the ankle joint, to compensate for the muscle weakness caused by different motor neuron diseases, to improve the gait functions during post-operative stages and to optimize the efficiency of walking.

Different types of AFO's are used to treat different dysfunctions. Each type of AFO's has its characteristic function. However, AFO's with same function can have different designs that differ in material, geometry, additional mechanism and components which affect the comfort, cost of AFO and oxygen consumption of patients. Additionally, recent advances in different technology areas, such as 3D manufacturing, three dimensional (3D) scanning and CAD-CAM (computer aided design-computer aided manufacturing) have led to new designs and manufacturing methods for AFO's. The objective of this project is to provide a design, analyze, and manufacture of AFO's.

2. LITERATURE SURVEY

First of all, it would be beneficial to describe orthoses and prosthesis concepts that are mostly confused with each other. Briefly, orthoses are braces to support dysfunction of a body part, while prostheses are artificial parts to replace a missing body part. Prostheses are devices for external and internal use. External prostheses, such as prosthetic legs or prosthetic breast form used after mastectomy (Lake, Ahmad, & Dobrashian, 2013), can be employed for cosmetic and also functional aims with the developments in prosthetic technology. On the other hand, internal prostheses, such as artificial knee joints (Guo, Hao, & Wan, 2016) and cataract lenses (Heys & Truscott, 2008) are devices which are surgically implanted within a body.

Orthoses are assistive devices that are used to align, protect and assist limbs or body parts besides supporting to treat deformities. Orthoses can be used for neurological conditions, injuries and congenital deformities. Orthoses are designed as standard or custom made forms from an individual mold in the shape of patient's foot. Orthoses can be divided into two classes, i.e. i) standard orthoses for general use and ii) custom made orthoses that are prescribed for more complex conditions. Orthoses are used for lower extremity (Moisan & Cantin, 2016), upper extremity (Belda-Lois et al., 2006), and spine (Hofmann et al., 2016). Lower extremity orthoses have a wide range of use that are designed for hip, knee and ankle joints' immobilizations. They reduce energy consumption and pain as assisting the gait and improving the posture. Development of lower extremity orthotic technologies and new materials lead to new designs and manufacturing methods, and also affect selection criteria of orthoses.

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AN OVERVIEW OF JOINING OF AL AND ITS ALLOYS BY FUSION AND SOLID-STATE WELDING PROCESSES

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ABSTRACT- Among all the non-ferrous materials, aluminium is widely employed in various aerospace, defence and industrial applications. The natural qualities, of aluminium and its alloys, like lightness, electrical and thermal conductivity, corrosion resistance, suitability for surface treatments, the diversity of the alloys and intermediates, ease of use, recycling make them usable in many applications. The applications demand the manufacturing of components by a superior manufacturing process, so that the products will be without any defects. Welding is one such process which is widely used in fabrication of aluminium components. Both fusion and solid- state welding processes are employed in the manufacturing of aluminium components. An attempt is made in this paper to take an overview of some fusion welding and some solid-state welding processes to weld Al and its alloys with a focus on the process parameters of these processes, tools used, micro structure of the welded specimens, thermal profiles, strength of joints and heat treatment. This is an attempt understand and summarize the issues related to welding of aluminium and its alloy

Keywords— Process parameters, microstructure, Aluminium.

1. INTRODUCTION

Pure aluminium is relatively soft. Generally, it cannot meet the demands made on advanced materials for high yield stress and high temperature performance as strength should not be lost at increased working temperatures and processing temperatures [1]. It is possible to some extent to meet these demands by means of alloying and heat treatment. The typical alloying elements in aluminium are copper, magnesium, manganese, silicon, tin and zinc. Alloying elements are selected based on their effects and suitability [2]. Based on the type of alloying element, the aluminium alloys are divided into 8 groups. They are 1xxx, 2xxx, 3xxx, 4xxx, 5xxx, 6xxx, 7xxx, 8xxx. Each alloy system is metallurgically distinct. Furthermore, different alloys within the given class may have different properties and characteristics. As a result processing for each alloy may vary. Aluminium and aluminium alloy are gaining huge industrial significance because of their excellent combination of mechanical, physical and tribological properties. One of the major routes of fabrication of theses alloys for various application in welding. Joining of aluminium and its alloys was never an easy task due to the various problems. This paper is an attempt to take an overview of problems associated with welding of aluminium and its alloys employing various conventional fusion welding techniques and solid state weldingtechniques.

2. WELDING PROCESSES

Gas Tungsten Arc Welding (GTAW)

GTAW is also known as Tungsten Inert Gas (TIG) welding. It is the welding process, in which heat is generated by an electric arc struck between a tungsten non-consumable electrode and the work piece as shown in "Fig.1". The weld pool is shielded by an inert gas (Argon, helium, Nitrogen) protecting the molten metal from atmospheric contamination.The heat produced by the arc melts the work pieces edges and joins them. Filler rod may be used, if required. Automation or mechanization of the TIG process can have a number of benefits. These include the ability to use faster travel speeds, resulting in less distortion and narrower heat affected zones[3].

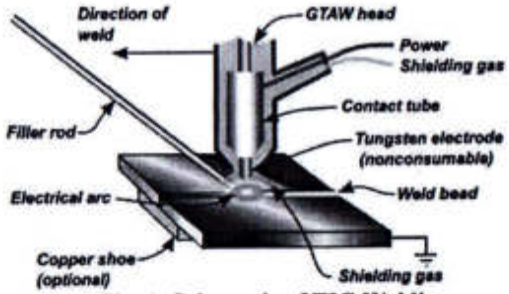

Fig. 1: Schematic of TIG Welding

Gas Metal Arc Welding (GMAW)

GMAW is also known as Metal Inert Gas (MIG) welding. The GMAW process was developed in the 1950s.In this process an electric arc forms between a

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CALCULATION OF SPECIFIC ENERGY IN BARE AND TBC COATED SUPER ALLOYS

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ABSTRACTAerospace engines and land based Gas turbines operates at very high temperatures which are made with materials which can withstand high temperatures such as Ni- based or Co-based superalloys. To increase the efficiency of engine by increasing working temperature, however superalloys are used for engine components needs to protect from high temperatures. The thermal barrier coatings (TBCs) gives good protection to high temperatures and also it is easy to apply on blades and engine components. A TBCs of 150 Im thick on a gas turbine blade will lead to an increase of 150 – 200o C in the operating temperature of the gas turbine.However, further cooling is necessary to protect the TBC and underlying superalloys from high temperatures air film cooling is one of the best way cool the turbine blades easily. For this purpose, fine holes drilling on the surface of turbine blades is required. Laser drilling of these TBC/superalloys multi layer system is best method than other existing techniques.

Conventional drilling methods are not possible or difficult to use for drilling of very small and fine holes. Laser drilling does not involve tool wear and it is easy to drill the bare and ceramics coated superalloys. Plasma sprayed thermal barrier coatings (TBCs) consist of partially stabilized zirconia as a top coat and NiCrAlY as bond coat, deposited on a nickel based superalloy (Inconel/IN718) substrate used for laser drilling experiments.Different thickness of TBCs, (600 & 1600 Im) on 2mm thick IN718 superalloy and 4mm thick IN718 superalloy used for this study. A pulsed Nd: YAG Laser (I = 1.06 Im) with a focal length of 120mm and using different pulse widths and pulse energy were used for drilling.

During laser drilling, material removal in general occurs by vaporization and expulsion of molten material.The energy required to remove material via melt ejection or expulsion of molten material is about one twelfth for IN718 and one third for ZrO2of that required to vaporize the same volume.In this project we investigated the amount of specific energy required to remove the material from melt ejection and vaporization mechanisms. And compared with theoretical values.In addition, all metallurgical characteristics of interest, viz. extent and nature of spatter, recast and heat-affected zone have been evaluated

1. INTRODUCTION OF THE LASERS

The increasing demand for processing of advance materials like superalloys and other materials which are difficult-to-process by conventionally and the availability of high power lasers have stimulated interest in research and development related to laser manufacturing. The already existing laser-based operations such as laser cutting, laser welding, laser heat treatment and rapid prototyping have already found their way into actual manufacturing shop floors. In addition, the applications of lasers in surface alloying, cladding and glazing now offer the exciting possibility of producing new materials with novel properties. The increasing interest in the use of lasers for manufacturing can be attributed to the several unique advantages listed below, which are generically applicable to the entire range of materials processing applications. The materials that can be processed using laser ranges from metals and alloys to inorganic as well as organic non metals and composites. The prominent laser based materials processing applications are briefly discussed below.

1. Laser Cutting
2. Laser Drilling
3. Laser Welding
4. Laser Cladding
5. Laser Alloying
6. Rapid Prototyping
7. Laser Marking
8. Laser Hardening
9. Laser Glazing

2. LITERATURE REVIEW

Gas Turbine

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DESIGN & DEVELOPMENT OF FRP SANDWICH CRASH BUMPER FOR ENHANCED SAFETY

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ABSTRACT:A bumper is a shield made of steel, aluminum, rubber, or plastic that is mounted on the front and rear of a passenger car. When a low speed collision occurs, the bumper system absorbs the shock to prevent or reduce damage to the car.. The crash bumper is a component associated with the safety of passenger and automotive engine and related components.

Better and Improved design is a continuous process to create better components with improved performance than the existing ones. A new or better component is one which is more economical in all respects such as cost, performance, and aesthetics and so on..

In the present work the PVC made automotive bumper is studied thoroughly and the section properties are evaluated. Various fiber reinforced plastic designs considered for theanalysis on the basis of providing betterflexuralrigidity at very moderate change in the weight of bumperwere proposed. The cross sectional area and mechanical properties are calculated along with the flexural rigidity of designs. Finite element analysis is carried out on these designs to select a better and commercially feasible design. The proposed design model has been fabricated and tested.

1. INTRODUCTION

The bumper is one of the most important parts of a car, which can be found at the rear-most and front-most parts. The car bumper is designed to prevent or reduce physical damage to the front and rear ends of passenger motor vehicles in low-speed collisions. Automobile bumpers are not typically designed to be structural components that would significantly contribute to vehicle crash worthiness or occupant protection during front or rear collisions. It is not a safety feature intended to prevent or mitigate injury severity to occupants in the passenger cars. Bumpers are designed to protect the hood, trunk, grille, fuel, exhaust and cooling system as well as safety related equipment such as parking lights, headlamps and taillights and rest of the vehicle in low speed collisions. When bumpers are poorly designed, these car body parts sustain most of the damage in parking-lot collisions and other low-speed impacts.

Basic function of bumper :

The function of the bumper is to absorb crash energy without significant damage to the bumper itself and no damage to the vehicle's front or rear end. The bumper of vehicle is a first element, which perceives the front impact in the most common cases of automobile accidents Generallytoday's bumpers are made with a reinforcement bar of steel, aluminum, or plastic with a plastic cover. The system includes crash absorbing mechanisms that compress on impact, such as polypropylene foam or plastic honeycomb. The most effective bumpers are positioned with distance between the reinforcement bar and the vehicle's sheet metal. It helps the vehicle sustain tremendous impact while preventing the safety systems from being damaged. However, it can reduce the injury of passengers especially during high speed impacts. Car bumpers can be damaged in accidents, For low speed collisions of 16km/h or lower bumpers are intended to protect body parts such as, hoods trunk lids, and lamps from losing their functions. Bumpers are designed to plastically deform at the time of collision under the speeds. So as to absorb the crash energy and protect automotive body and the rest of the vehicle.

2. LITERATURE REVIEW

Stephen H.Hamid Razi and M. Dudley 1999. [1], Have carried out study of composite material. In a composite material under tension or compression loading, a damage zone (DZ) is developed in front of a notch prior to failure. Recent research indicates that the DZ manifests itself in the form of strain-softening material behavior. This describes a generalized analysis method based on a bilinear strain-softening material law combined with a damage zone model (DZM) to predict residual strength of thin-skin honeycomb sandwich structures with damage such as holes and slots. This method was

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INVESTIGATION ON PERFORMANCE OF BURNISHING PROCESS ON DIFFERENT MATERIALS

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Abstract
The main aim of this paper is to analyze the impact of roller burnishing operations on the work material, which is a cold- working, non-metal removal and plastic deformation process. Surface finish has a positive and prolonged effect on the functioning of the machined parts. In this work roller burnishing is used to get a high-quality surface finish on different materials like aluminium, copper and brass.
A test rig was set up on a center lathe to conduct experiments. The surface finish of the roller burnished cylindrical surfaces was examined for the soft materials like aluminium, Copper and also for hard materials like Brass. The optimum values of feed, speed, and depth of penetration were suggested by conducting a number of experiments varying one-factor-at-a-time holding the other parameters constant. Number of passes of the tool was also the factors under study for the optimization.
Since all the factors are independent, varying one-factor-at-a-time and keeping the rest constant method of experimental optimization technique will not give accurate results either for the main effects or any interactions present. At same time it is not possible to vary more than one factor at a time experimentally.

1. INTRODUCTION

Surface Roughness:
The surfaces of engineering components will provide link between manufacturing and their function in use. Provision and long-term keeping of specified characteristics of machine parts greatly depends on their surface quality. The main cause of machine failures (80%) are wear of contact surfaces in mating parts. Wear resistance of rubbing parts can be improved by reducing the initial wear of components. In this line, it is better practice to make the sliding Surfaces with a roughness equal to that of worn-in parts.
In today's production of machines and instrument components, finishing processes are becoming more and more important. Increasing attention is being paid to the quality of the surface finish obtained. Surface finish is important not only as an appearance it also has a positive prolonged effect on the functioning of machine parts. Surface finish is a characteristic of any machined surface. It is sometimes called as surface texture or roughness. The advantages of good surface finish are:

- Good surface finishes increase the wear resistance of the two work pieces in an assembly.
- Good surface finishes have cosmetic affect and make the parts look good.
- Good surface finish permits the proper function of static and dynamic O-ring in hydraulic and Pneumatic equipment
- Good surface finishes increase the load carrying capacity, tool life.
- Good surface finishes increase the corrosion and fatigue life of the components

Surface roughness is generally defined as the irregularities, which are inherent in the production process left by the manufacturing tool.
Some factors are

- The marks left by the tool
- The finer structure due to the tearing of material during machining.
- The debris of built-up edge.
- Small irregularities in the shape of the tool tip.

Poor surface finish may neutralize the effect of tolerances and require more power to operate the machines. Hence surface finish has vital role in machining process. The components manufactured without good surface finish may result in numerous problems. Increased wear on moving stressed parts, Excessive stress concentration etc. Thus,with a view to eliminate the above problems, a good surface finishing process is required.

2. LITERATURE

Burnishing
Burnishing is also called as chip less finishing process. It cold works the metal surfaces by applying the forces that exceed the yield strength of the material through

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EXPERIMENTAL INVESTIGATION OF AIR FLOW CHARACTERISTICS IN RECTANGULAR CHANNEL USING PEDESTALS AS VORTEX GENERATOR

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Abstract- This experimental study is to investigate the effect or influence of pedestal vortex generator on one wall of rectangular duct on the flow performance. The effects of geometrical parameters of pedestal vortex generator and aspect ratio of duct on friction factor ratio have resulted in Reynolds number which is based on hydraulic diameter of the rectangular channel in the range 8000 to 24000. The factors which are varied for vortex generator were pitch to height ratio of vortex generator (p/h) and aspect ratios of vortex generators (Δ). Vortex generator numbers were also varied on wall at axial locations. Experimental results reported for aspect ratio 2.8, 5.5, 7.3 and 1.6 of pedestal vortex generator and pitch to height ratio (P/h) 4,8,12, 16. And 8000 to 24000 is the range of Reynolds number. Experimentally investigated that the friction factor ratio increases with increase in Reynolds number and friction factor ratio increases with decrease in pitch to height ratio. For pedestal vortex generator with aspect ratio 2.8 and height 8mm the results were, For pitch to height ratio (P/h)=16 friction factor ratio for 8000 Reynolds number is 27.12% less than the friction factor ratio for the Reynolds number 24000. So it is clear that friction factor ratio increases with increase in Reynolds number. And for Reynolds number 20000, pitch to height ratio (P/h) =4 friction factor ratio is 21.14% greater than pitch to height ratio (P/h)=16 so we can say that friction factor ratio increases withdecrease in pitch to height ratio.

Keywords: Pitch to height ratio, Aspect ratio, Pressure drop, Hydraulic diameter, Pedestals

1. INTRODUCTION

There are many uses in engineering processes in which we come across addition or removal of heat for this to happen we use heat exchange equipment's in wide applications of engineering. Flow in channels gains more attention because of their uses in heat exchangers. In channels we use vortex generators which obstruct the flow and produce vortices due to these vortices heat transfer rate is enhanced. There are many types of vortex generators which are used in channel flow and the most often used are ribs, wings and winglet pairs. And for these vortex generators there are many number of methods to raise the coefficient of heat transfer. Commonly used methods are active, passive and compound methods. But here we are using passive method in which no external power is used but we make use of geometry of surface which is main factor in passive method, where as in active method we use external power like mechanical equipment's, surface vibration ,electric or acoustic fields. The method which makes use of both active and passive method is named as compound method. In passive method the main factors which raises the heat transfer rate mainly depends on two important things one is disturbing thermal layer and mixing of bulk fluid. This disturbance in the presence of roughness elements will raise the heat transfer rate by producing a boundary layer which is thinner than undisturbed thermal boundary layer. Mixing of bulk fluid increases the heat transfer rate and because of vortices produced due to disturbance reduces thermal gradient in the center and it mainly on side wall region of the channel. This can be achieved by using vortex generators.

The method which uses vortex generators to raise the heat transfer rate is named as induced vortex enhancement technique. The vortex generators are mainly divided into four forms on the basis of their geometry. Ribs, winglet pairs, delta wings and delta winglet pairs.

Vortex generators which disturb the flow and produce vortices which further increase the heat transfer rate and these shapes of vortex generators are either be cut or punched. And these vortex generators are attached to the surface of the channel which is to be roughened. These

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PIC MICROCONTROLLER BASED POWER FACTOR CORRECTION

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Abstract- This project includes a new implementation method to improve power factor for both leading and lagging loads using PIC Microcontroller after determining their zero crossing locations of voltage and current waveforms by zero cross detectors (ZCD). Capacitive and inductive banks are used for the compensation of power factor according to nature of load which is determined based on microcontroller algorithm.
To design this project microcontroller plays a major role. The interfaced devices to the microcontroller are node cu, Zero cross detector, Potentiometer, Current Transformer, Voltage Transformer, Capacitive Bank and Inductive Bank. The main purpose is to detect the zero crossing of the voltage and current and then switching of capacitive and inductive banks based on microcontroller algorithm.The voltage is first stepped down using potential transformers and the current is stepped down using current transformer whose rating is decided based on maximum rating of your load. These two waves of voltage and current are passed through zero cross detectors (ZCD). The waves that appear across the output of the ZCD are the square waves and their amplitude approaches almost to the biasing of the operational amplifier. These two waves are then fed to microcontroller so that it can measure the phase delay between the voltage and current waveforms and then show the power factor accordingly based on the proposed algorithm. The microcontroller then based on number of counts decides the power factor and displays it on LCD.
Keywords: PIC Microcontroller, zero cross detectors (ZCD).

1. INTRODUCTION

This project includes a new implementation method to improve power factor for both leading and lagging loads using PIC Microcontroller after determining their zero crossing locations of voltage and current waveforms by zero cross detectors (ZCD). Capacitive and inductive banks are used for the compensation of power factor according to nature of load which is determined based on microcontroller algorithm.
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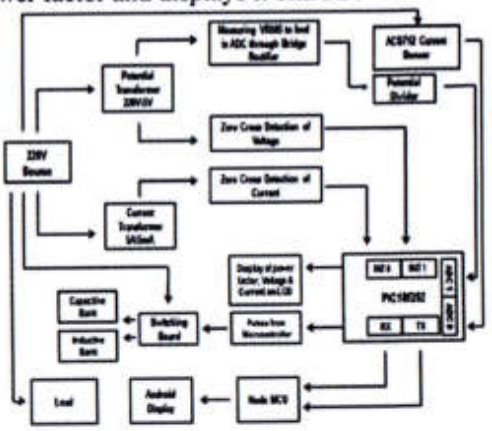
The voltage is first stepped down using potential transformers and the current is stepped down using current transformer whose rating is decided based on maximum rating of your load. These two waves of voltage and current are passed through zero cross detectors (ZCD).

1.1 Block Diagram

These two waves are then fed to microcontroller so that it can measure the phase delay between the voltage and current waveforms and then show the power factor accordingly based on the proposed algorithm. The microcontroller then based on number of counts decides the power factor and displays it onLCD.



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ACCIDENT DETECTION AND REGULATIONTHROUGH INTERNET OF VEHICLES BY USING VANET

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Abstract: The dramatic increase of urban motorcycle road fatalities has led to significant issues in contemporary traffic management systems. The impact of synergetic paradigms of VANET envisages sustainable solutions for smart transportation. Furthermore, Internet of Vehicle (IoV) the fastest growing extension module of VANET builds highly compatible cloud-based collaboration among heterogeneous entities like vehicles, human and internet services.

The proliferation of such IoV enabled device configuration provides scalable, efficient and quality driven applications for smart city ecosystem. This project focusses on identifying and examining the adoption of wearable embedded smart helmet technology among the motorcyclist that reduces the potential injuries to the head and prevention of accidents due to drunken drive for safe riding.

In addition, this project critically evaluated the existing best practices of smart helmet management and issues in terms of software and hardware aspects.

Keywords – ARDUIN, ZIBGEE, InternetofVehicle(IoV)

1. PROBLEM DEFINITION

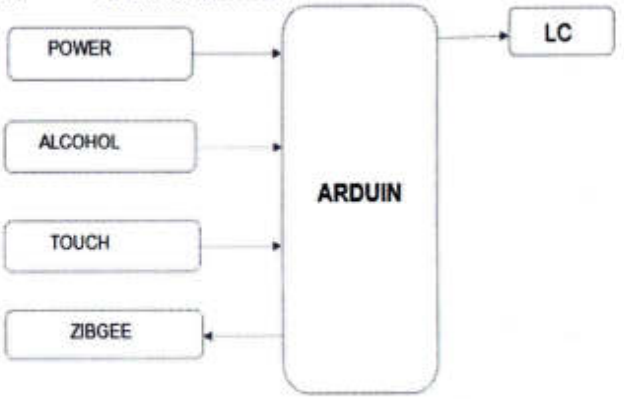
A traffic accident is defined as any vehicle accident occurring on a public highway (i.e. originating on, terminating on, or involving a vehicle partially on the highway). These accidents therefore include collisions between vehicles and animals, vehicles and pedestrians, or vehicles and fixed obstacles. In higher-income countries, road traffic [1] accidents are already among the top ten leading causes of disease burden in 1998 as measured in DALYs (disability-adjusted life years). In less developed countries, road traffic accidents were the most significant cause of injuries, ranking eleventh among the most important causes of lost years of healthy life. In Indian road system, widening of the road is not an alternative solution to avoid traffic in such a cities.

As per Section 129 of Motor Vehicles Act, 1988 makes it compulsory for every individual riding a two-wheeler to wear protective headgear conforming to standards of the Bureau of Indian Standards. Despite creating much awareness, people don't wear helmets. Traffic police monitoring for helmets is not permanent solution. As traffic police cannot be present at all places. Also they do not have adequate manpower to implement the rule as manning traffic is also a priority.

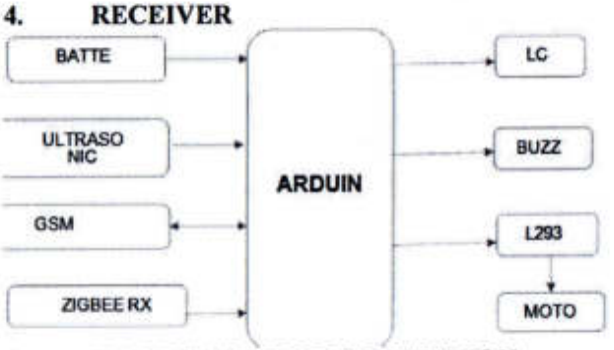
2. BLOCK DIAGRAM

Transmitter and Receiver sections are designed as below

3. TRANSMITTER



4. RECEIVER



5. HARDWARE IMPLEMENTATION

This chapter briefly explains about the Hardware implementation of authentication of design & implementation of a smart helmet based on iot. It discusses the circuit diagram of each module in detail.

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An energy clock boosting based super regenerative receiver for WBANs

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ABSTRACT

The use of low power, high sensitivity, ultra-regenerative (SR) receivers for WBAN is recommended in this document. To ensure high sensitivity while maintaining low power consumption, a two-stage cyclic cooling controller with automatic negative (-Gm) contact controller is designed to adjust the SRO bias current to double the input data rate. To reduce power consumption without affecting loop boost, a new SRO architecture has been introduced across platforms using dynamic threshold control techniques, larger adaptive bias, and gm optimization. The proposed 2.4 GHz centre frequency super regenerative receiver is implemented in a 180 nm CMOS technology using a clock optimization scheme.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Research ? 2019.

1. Introduction

This chapter provides an overview of wireless network development with a focus on Wireless Sensor Networks (WSC). Motivation for research work was developed, after which the literature was reviewed and dissertations compiled. In an independent power environment, to ensure low power consumption of wireless receivers, high sensitivity becomes a serious problem [1,2]. Due to the low complexity of Super Regenerative (SR) receivers, the combination of ultra-regeneration principles and CSR modulation allows for an economical design and low power consumption. To solve the current problem in current SR receiver design and simplify circuit architecture, we used a Q-switched LC oscillator to provide high selectivity and increase sensitivity Fig 1 Fig 2 Fig 3 Table 1.

1.1. Growth of wireless communication networks

Wireless communication networks have experienced swift progress since 1970 s and associate innovative technologies have credited to its evolution and complexity. The first generation networks were deployed in 1980 s, which are based on Frequency Division Multiple Access (FDMA) and analog Frequency Modulation (FM) technology. The first analog cellular system namely, the Nippon Telephone and Telegraph (NTT) system started its operations in 1979. The Nordic Mobile Telephone (NMT) announced by Ericsson Radio Systems and the Advanced Mobile Phone Service (AMPS) introduced by AT&T, became functional from 1981 and 1983 respectively. In the early 1980 s, several first generation analog systems like ETACS, TACS, C-450, NMT 450, RTMS and Radio com 2000 in Europe, and NTACS / JTACS in Japan were pushed for deployment [3,4].

2. Proposed methodology

Logarithmic multiplication based on effective expansion such as Mahalingam and Rangantathan (2006)] produces a much lower error rate than the logarithmic multiplication of Mitchell. However, the doubled architecture presented by Mahalingam and Rangantathan (2006)) has some design problems. It is possible to reduce the complexity and number of hardware faults. By studying the literature, it is found that there is no definite logarithmic factor in the literature on the basis of "enhanced modulus expansion" [5,6]. An improved log multiplication architecture based on efficient decomposition must be considered when the log duplication architecture based on effective decomposition cannot provide error accuracy and instrumentation efficiency. It is recommended to make some changes to the log multiplication algorithm, based on the existing decoding of factors, to eliminate the accuracy of errors, as well as to reduce the efficiency of the equipment. Algorithms for operational and architectural decomposition have been proposed. The application of logarithmic multiplication on the basis of the most effective factor in designing the FIR filter is

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SEGWAY ROAD CLEANING AND WATER SPRINKLE SYSTEM

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Abstract- The uses of alternative sources of energies are becoming widely spread in all over the world. Our sun is also a very good source of different energies; the light energy has a very remarkable value. The Solar panel converts the light energy into the electrical energy.
The efficiency of solar panel can be maximized by aligning the solar panel with the sun. The sun tracking system is designed in this project, offers a reliable and affordable method of aligning a solar panel with the sun on single axis. This project is based on microcontroller 8051 with a simple circuit and sun tracking software.
In the recent years, the energy sources like fossil fuel, gas, crude oil, coal, nuclear fuel etc. are becoming scared due to excessive use of it for domestic as well as commercial purpose. These are non-renewal sources of energy.
The situation was energy resources are scared, it is vital to use renewable source of energy for example solar energy, Wind power, Tides, Hydroelectricity, Geothermal power. This paper gives the design and construction of 8051 microcontroller for solar panel tracking system to produce solar energy. Solar tracking system produces more energy since the solar panel remains aligned to the sun.
"Solar Tracking System" is a power generating method from sunlight. This method of power generation is simple and is taken from natural resource. This needs only maximum sunlight to generate power. This paper helps for power generation by setting the equipment to get maximum sunlight automatically.
This system is tracking for maximum intensity of light. When there is decrease in intensity of light, this system automatically changes its direction to get maximum intensity of light.
Keywords: Solar Tracking System, Arduino, Intermittency

1. INTRODUCTION

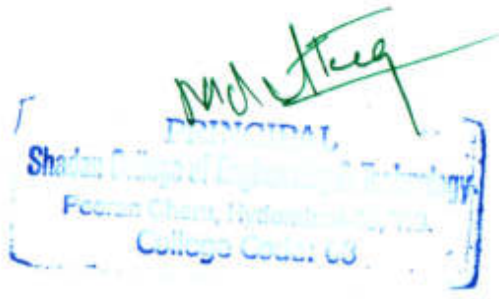
The Segway PT (referred to at the time as the Segway HT) wasdevelopedfromtheself-balancing iBOT wheelchair which was initially developedat UniversityofPlymouth,inconjunctionwith BAE Systems and Sumitomo Precision Products. Segway's first patent was filed in 1994 and granted in 1997 followed by others including one submitted in June 1999 and granted in October2001.
The invention, development, and financing of the Segway was the subject of a book, and a leak of information prior to publication of the book and the launch of the product led to excited speculation about the device and its importance. JohnDoerr speculatedthatitwouldbemoreimportantthantheInternet.
South Park devoted an episode to making fun of the hype before the product was released. SteveJobs was quoted as saying that it was "as big a deal as the PC", (but later retracted that saying that it "sucked", presumably referring to "the design"butcommentingaboutthe boutiqueprice,asking,"You're sure your market is upscale consumers for transportation?") The device was unveiled on 3 December 2001, following months of public speculation, in Bryant Park, New York City,onthe ABCNews morning program Good Morning America with the first units delivered to customers in early2002.

1.1 Energy Resources

The world's energy resources can be divided into fossil fuel, nuclear fuel and renewable resources.Renewable energy resources and significant opportunities for energy efficiency exist over wide geographical areas, in contrast to other energy sources, which are concentrated in a limited number of countries. Rapid deployment of renewable energy and energy efficiency, and technological diversification of energy sources, would result in significant energy security and economic benefits. Solar energy and wind energy are chosen here for hybrid power generation

2. HARDWARE IMPLEMENTATION

1. Memes
2. Arduino
3. 4 channel relay



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DESIGN & IMPLEMENTATION OF CONVOLUTION NEURAL NETWORKS

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Abstract- Full end-to-end text recognition in natural images is a challenging problem that has received much atten- tion recently. Traditional systems in this area have re- lied on elaborate models incorporating carefully hand-engineered features or large amounts of prior knowl- edge. In this paper, we take another method and combine the representative power of large, multilayer neural networks together with recent developments in unsupervised feature learning, which allows us to use a common framework to train highly-accurate text detec- tor and character recognizer modules. Then, using only simple off-the-shelf methods, we integrate these two modules into a full end-to-end, lexicon-driven, scene text recognition system that achieves state-of-the-art performance on standard benchmarks, and popular streets

1 INTRODUCTION

Extracting textual information from natural images is a challenging problem with many practical applica- tions. Unlike character recognition for scanned docu- ments, recognizing text in unconstrained images is com- plicated by a wide range of variations in backgrounds, textures, fonts, and lighting conditions. As a result, many text detection and recognition systems rely on cleverly hand-engineered features [5, 4, 14] to repre- sent the underlying data. Sophisticated models such as conditional random fields [11, 19] or pictorial structures [18] are also often required to combine the raw detec- tion/recognition outputs into a complete system.

In this paper, we attack the problem from a differ- ent angle. For low-level data representation, we use an unsupervised feature learning algorithm that can auto- matically extract features from the given data. Such algorithms have enjoyed numerous successes in many

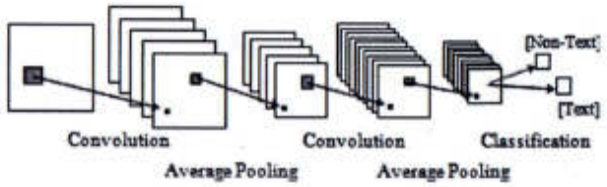

Figure 1. CNN used for text detection.

related fields such as visual recognition [3] and action recognition [7]. In the case of text recognition, the system in [2] achieves competitive results in both text detection and character recognition using a simple and scalable feature learning architecture incorporating very little hand-engineering and prior knowledge.

We integrate these learned features into a large, discriminatively-trained convolutional neural network (CNN). CNNs have enjoyed many successes in simi- lar problems such as handwriting recognition [8], visual object recognition [1], and character recognition [16]. By leveraging the representational power of these net- works, we are able to train highly accurate text detection and character recognition modules. Using these mod- ules, we can build an end-to-end system with only sim- ple post-processing techniques like non-maximal sup- pression (NMS)[13] and beam search [15]. Despite its simplicity, our system achieves state-of-the-art perfor- mance on standard test sets.

2 LEARNING ARCHITECTURE

In this section, we describe our text detector and character recognizer modules, which are the essential building blocks of our full end-to-end system.Given a 32-by-32 pixel window, the detector decides whether the window contains a centered character. Similarly, the recognizer decides which of 62 characters (26 upper- case, 26 lowercase letters, and 10 digits) is in the win- dow. As described at length in Section 3, we slide the

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TRUST MANAGEMENT SCHEME FOR CLUSTERED WIRELESS SENSOR NETWORKS

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Abstract— In this work, we propose a new lightweight Group- based Trust Management Scheme (GTMS) for wireless sensor networks, which employs clustering. Our approach reduces the cost of trust evaluation. Also, theoretical as well as simulation results show that our scheme demands less memory, energy, and communication overheads as compared to the current state-of-the-art trust management schemes and it is more suitable for large-scale sensor networks. Traditional trust management schemes developed for wired and wireless ad hoc networks are not well suited for sensor networks due to their higher consumption of resources such as memory and power. Furthermore, GTMS also enables us to detect and prevent malicious, selfish, and faulty nodes.
Index Terms—Trust evaluation, trust modeling, trust management, security, sensor networks.

1 INTRODUCTION

RUST in general is the level of confidence in a person or a thing. Various engineering models such as security, usability, reliability, availability, safety, and privacy models incorporate some limited aspects of trust with different meanings [1]. For example, in sensor network security, trust is a level of assurance about a key's authenticity that would be provided by some centralized trusted body to the sensor node (SN) [2], [3]. In wireless ad hoc and sensor network reliability, trust is used as a measure of node's competence in providing required service [4], [5], [6], [7]. In general, establishing trust in a network gives many benefits such as the following:

1. Trust solves the problem of providing correspond- ing access control based on judging the quality of SNs and their services. This problem cannot be solved through traditional security mechanisms [8].
2. Trust solves the problem of providing reliable routing paths that do not contain any malicious, selfish, or faulty node(s) [9], [10].
3. Trust makes the traditional security services more robust and reliable by ensuring that all the communicating nodes are trusted during authentication, authorization, or key management [11].

For Wireless Sensor Networks (WSNs), we visualize that trust management is a cooperative business rather than an individual task due to the use of clustering schemes such as LEACH [12], PEGASIS [13], TEEN [14], and HEED [15] in

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For information on obtaining reprints of this article, please send e-mail to: tpds@computer.org, and reference IEEECS Log Number TPDS-2008-04-0133. Digital Object Identifier no. 10.1109/TPDS.2008.258.

real-world scenarios. Moreover, SNs can also be deployed in the form of groups [16], which are willing to collaborate with each other in order to process, aggregate, and forward collected data [17]. This highlights the fact that these clustering schemes and group deployments enable SNs to fulfill their responsibilities in a cooperative manner rather than individually. Therefore, establishing and managing trust in a cooperative manner in clustering environment provides many advantages. Such as, within the cluster, it helps in the selection of trusted cluster head by the member nodes. Similarly, the cluster head will be able to detect faulty or malicious node(s). In case of multihop clustering [15], [18], it helps to select trusted en route nodes through which a node can send data to the cluster

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RESOURCE ORGANIZATION OF COGNITIVE RADIO NETWORKS VIA FUZZY LOGIC TECHNIQUE

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Abstract: The spectrum is a scarce resource and must utilize efficiently, the cognitive radio is a prospective solution for underutilized spectrum. Introduction of flexibility and intelligence in the wireless devices and applications have introduced the concept of Cognitive Radio. This objective has inspired various research activities on going which included the decision making aspects. In this work, a decision making process in cognitive radio is analyzed using fuzzy logic system, in which Dynamic Resource Management of Cognitive Radio Networks is effectively done. The fuzzy logic tool is very helpful for complex or uncertain process where it is difficult to develop mathematical model. Cognitive radio (CR) is a promising technology to solve the challenging spectrum allocation problem. So that, we have selected three descriptive factors for choosing the aggregation weight in dynamic resource management such as Nodes control, Nodes Link state amount and Nodes Link state time. The efficiency of the decision making process in cognitive radios is analyzed. Based on linguistic knowledge 5 rules are set up. The output of the fuzzy logic system gives the probability of the decision based on the three descriptive factors. Recognizing that fuzzy logic inference can better handle uncertainty, fuzziness, and incomplete information in node convergence report, Fuzzy Convergence is developed as a novel approach to aggregate wireless node control with affordable message overload. We show how fuzzy logic system can be used for decision making operation in cognitive radio

1. INTRODUCTION

Spectrum scarcity is one of the biggest challenges that the modern world is facing. The efficient use of available licensed spectrum is becoming more and more critical with increasing demand and usage of the radio spectrum. Different researches show that the usage is not uniform throughout the licensed spectrum rather it is heavy in certain parts of the spectrum and has portions that are utilized inefficiently.

Some researchers even claim that more than 70% of the licensed frequency band is not in use, most of the time. So, there is much room for work yet in the unutilized parts or the inefficiently utilized parts of the spectrum, to overcome the spectrum scarcity problem.

Different researches are in progress and ways are being found to efficiently utilize the available licensed spectrum. One of the ways is the use of Cognitive Radio, according to this; the already licensed spectrum can be used more efficiently by introducing artificial intelligence, the decision making to be specific, in the radio. This enables the radio to learn from its environment, considering certain parameters. Based on this knowledge the radio can actively exploit the possible empty frequencies in the licensed band of the spectrum that can then be assigned to other processes in such a way that they dont cause any interference to the frequency band that is already in use.

This makes the efficient usage of the available licensed spectrum possible. The users that are allocated the licensed frequency bands of the spectrum are the primary users and the users that are allocated the empty frequencies within the licensed frequency band, according to their requested QoS specifications, are known as the secondary users or the cognitive users. They are called as the secondary users as they utilize the unused spectrum resources only, on non-interfering basis, with the primary users.

This paper will focus on the implementation of different spectrum allocation techniques for these secondary users, based on Fuzzy logic Algorithms and an evaluation of the performance of these techniques using Matlab coding. This work will focus on the decision-making process mainly, with an assumption that the radio environment has already been sensed and the QoS requirements for the application have been specified either by the sensed radio environment or by the secondary user itself [4].

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DESIGN & IMPLEMENTATION OF MEMORY ARCHITECTURES IN QUANTUM DOT CELLULAR AUTOMATA TECHNOLOGY

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Abstract: The QCA technology is used for designing and implementation of digital circuits efficiently due to its features like smaller feature size, high speed, low power dissipation and high switching frequency. These characteristics prompt memory cell architecture and implementation in QCA as an appealing choice for manufacturing storage devices. CMOS technology is experiencing power dissipation, short channel effects and quantum effects problems with its relation to chip size, which makes it too hard for integrating more transistors, reaching its scaling limits. Quantum Dot Cellular Automata (QCA) is one of emerging nanotechnologies in recent times to overcome this flaw. This paper discusses architectures of several line and loop based memory cells to compare in terms of density, low power, complexity and switching frequency and to deduce an architecture method which is significant for designing memory cells

Keywords: Quantum Dot Cellular Automata, memory cell, architecture, density, complexity, low power

1. INTRODUCTION

In CMOS computing components are becoming smaller in size based on the Moore's law. This has caused CMOS based computing devices to experience several limitations (Misra et al., 2014). Some of important CMOS limitations are high power consumption, interconnection effects, short channel effects, fabrication difficulties and its high cost as a result of CMOS devices, high performance capability and device density which is making difficulties for CMOS technology advancement (Bhoi et al., 2021).

A new alternative paradigm for conventional CMOS technology in nanotechnology called QCA technology has emerged which overcomes flaws which are experienced with CMOS technology (Misra et al., 2015). The QCA technology used quantum cells, which makes it reversible in nature and has a relatively small feature size, low power dissipation and low delay compared to conventional CMOS (Bhoi et al., 2017).

The QCA technology features are very suitable for implantation of memory cells, while designing QCA memory cell architecture, important issue to consider is switching frequency and feedback paths so that so that arrangement of clocking zones are accurate in order for correct operation by means of pipelining (Frost et al., 2002).

Memory architecture, designing in QCA technology cannot be done similar to that of CMOS technology due to QCA's unique characteristics like the placement of the cells, clocking need to be considered so that memory is always in movement.

In this paper, our objective is to discuss and study memory architectures, which are broadly based on the prior line based and loop based memory cell designs, then discuss both line and loop based memory designs for their characteristics like density, low power, design complexity and latency. Lastly, we conclude why loop based architecture design approach of memory cells is suitable.

The paper organization is as follows. Section II briefly discusses fundamentals of QCA technology such as QCA cells, clocking schemes of QCA, and basic QCA gates and memory in motion. Section III discusses existing line and loop based memory cell architectures.

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BLOCKCHAIN BASED PUBLIC INTEGRITY VERIFICATION FOR CLOUD STORAGE AGAINST PROCRASTINATING AUDITORS

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Abstract :-The deployment of cloud storage services has significant benefits in managing data forusers. However, it also causes many security concerns, and one of them is data integrity. Publicverificationtechniquescanenableauser toemployathird-partyauditortoverifythedataintegrityonbehalfofher/him,whereasexistingpublicverificationschemesarevulnerabletoprocrastinating auditors who may not perform verifications on time. Furthermore, most of publicverification schemes are constructed on the public key infrastructure (PKI), and thereby sufferfrom certificate management problem. In this paper, we propose the first certificateless publicverification scheme against procrastinating auditors (CPVPA) by using blockchain technology.The key idea is to require auditors to record each verification resultinto a blockchain as atransaction. Since transactions on the blockchain are time-sensitive, the verification can be time-stamped after the corresponding transaction is recorded into the blockchain, which enables usersto check whether auditors perform the verifications at the prescribed time. Moreover, CPVPA isbuilt on certificate less cryptography, and is free from the certificate management problem. Wepresentrigoroussecurityproofstodemonstratethesecurityofcpvpa,andconductacomprehensive performance evaluationtoshowthatCPVPAisefficient

1. INTRODUCTION:-

The deployment of cloud storage services has significant benefits in managing data for users.However,it also causesmany security concerns,andone of themis dataintegrity.Publicverificationtechniquescanenableauser toemployathird-partyauditortoverifythedataintegrityonbehalfofher/him,whereasexistingpublicverificationschemesarevulnerabletoprocrastinating auditors who may not perform verifications on time. Furthermore, most of publicverification schemes are constructed on the public key infrastructure (PKI), and thereby sufferfrom certificate management problem. In this paper, we propose the first certificate less publicverification scheme against procrastinating auditors (CPVPA) by using blockchain technology.The key idea is to require auditors to record each verification result into a block chain as atransaction. Since transactions on the blockchain are time-sensitive, the verification can be time-stamped after the corresponding transaction is recorded into the block chain, which enables usersto check whether auditors perform the verifications at the prescribed time. Moreover, CPVPA isbuilt on certificate less cryptography, and is free from the certificate management problem. Wepresentrigoroussecurityproofstodemonstratethesecurityofcpvpa,andconductacomprehensive performance evaluationtoshowthatCPVPAisefficient.

2. EXISTING SYSTEM

In this paper, we have an existing system is the first certificateless public verification schemeagainstprocrastinatingauditors(CPVPA) byusingblockchaintechnology.CPVPAisbuiltonthecertificate less cryptography and avoids the certificate management problem. CPVPA, resistsmalicious auditors and procrastinating ones without introducing any trusted entity, where eachverification performed by the auditor is time-stamped by integrating it into a transaction of blockchain. The key idea is to require auditors to record each verification result into a blockchain as atransaction Since transactions on the blockchain are time-sensitive, the verification can be time-stamped after the corresponding transaction is recorded into the blockchain, which enables userstocheckwhetherauditors performthe verifications atthe prescribedtime.

Existing System Disadvantages:-

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A HIERARCHICAL ATTENTION MODEL FOR SOCIAL CONTEXTUAL IMAGERECOMMENDATION

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ABSTRACT- Image based social networks are among the most popular social networking services in recent years. With tremendous images uploaded every day, understanding users' preferences on user-generated images and making recommendations have become an urgent need. In fact, many hybrid models have been proposed to fuse various kinds of side information (e.g., image visual representation, social network) and user-item historical behavior for enhancing recommendation performance. However, due to the unique characteristics of the user generated images in social image platforms, the previous studies failed to capture the complex aspects that influence users' preferences in a unified framework. Moreover, most of these hybrid models relied on predefined weights in combining different kinds of information, which usually resulted in suboptimal recommendation performance. To this end, in this paper, we develop a hierarchical attention model for social contextual image recommendation. In addition to basic latent user interest modeling in the popular matrix factorization based recommendation, we identify three key aspects (i.e., upload history, social influence, and owner admiration) that affect each user's latent preferences, where each aspect summarizes a contextual factor from the complex relationships between users and images. After that, we design a hierarchical attention network that naturally mirrors the hierarchical relationship (elements in each aspects level, and the aspect level) of users' latent interests with the identified key aspects. Specifically, by taking embeddings from state-of-the-art deep learning models that are tailored for each kind of data, the hierarchical attention network could learn to attend differently to more or less content. Finally, extensive experimental results on real-world datasets clearly show the superiority of our proposed model

1. INTRODUCTION

There is an old saying "a picture is worth a thousand words". When it comes to social media, it turns out that visual images are growing much more popularity to attract users. Especially with the increasing adoption of smartphones, users could easily take qualified images and upload them to various social image platforms to share these visually appealing pictures with others. Many image-based social sharing services have emerged, such as Instagram1, Pinterest2, and Flickr3. With hundreds of millions of images uploaded every day, image recommendation has become an urgent need to deal with the image overload problem. By providing personalized image suggestions to each active user in image recommender system, users gain more satisfaction for platform prosperity. E.g., as reported by Pinterest, image recommendation powers over 40% of user engagement of this social platform.

Naturally, the standard recommendation algorithms provide a direct solution for the image recommendation task. For example, many classical latent factor based Collaborative Filtering (CF) algorithms in recommender systems could be applied to deal with user-image interaction matrix Successful as they are, the extreme data sparsity of the user-image interaction behaviourlimits the recommendation performance. On one hand, some recent works proposed to enhance recommendation performance with visual contents learned from a (pre-trained) deep neural network. On the other hand, as users perform image preferences in social platforms, some social based recommendation algorithms utilized the social influence among users to alleviate data sparsity for better recommendation . In summary, these studies partially solved the data sparsity issue of social-based image recommendation. Nevertheless, the problem of how to better exploit the unique characteristics of the social image platforms in a holistical way to enhance recommendation performance is still under explored.

2. LITERATURE SURVEY

1.TITLE: Toward the next generation of recommender systems: A survey of the state-ofthe-art and possible extensions.

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PREDICTION AND DIAGNOSIS OF HEART DISEASE PATIENTS USING DATA MINING TECHNIQUE

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ABSTRACT- We are living in a post modern era and there are tremendous changes happening to our daily routines which make an impact on our health positively and negatively. As a result of these changes various kind of diseases are enormously increased. Especially, heart disease has become more common these days. The life of people is at a risk. Variation in Blood pressure, sugar, pulse rate etc. can lead to cardiovascular diseases that include narrowed or blocked blood vessels. It may causes Heart failure, Aneurysm, Peripheral artery disease, Heart attack, Stroke and even sudden cardiac arrest. Many forms of heart disease can be detected or diagnosed with different medical tests by considering family medical history and other factors. But, the prediction of heart diseases without doing any medical tests is quite difficult. The aim of this project is to diagnose different heart diseases and to make all possible precautions to prevent at early stage itself with affordable rate. We follow 'Data mining' technique in which attributes are fed in to SVM, Random forest, KNN, and ANN classification Algorithms for the prediction of heart diseases. The preliminary readings and studies obtained from this technique is used to know the possibility of detecting heart diseases at early stage and can be completely cured by proper diagnosis

1. INTRODUCTION

There are so many diseases which affect us badly and one among them is Heart disease. It is a serious disease since we often hear that most of the people die out of Heart diseases and other kinds of similar diseases relates to heart[1-3] It is observed by most of the medical scholars that at many times most of the heart patients might not survive heart attacks and they die with it. In this paper we would like to deal with the four classification techniques which is use to prediction of heart disease[4-6]. Namely SVM, Random forest, KNN, ANN. The studies have been done by evaluating the medical profiles of people who undergoes treatment in JMMC (Jubilee Mission Medical College) Thrissur, by categorizing their age, sex, pulse rate, blood pressure as well as fasting blood sugar Etc. we chose those categories since it is observed that heart diseases are mainly studied likewise.

We hope there is always prime in studying about heart diseases. Our research we try to the possibility of detecting the heart diseases at early stage. It can completely cure the disease by proper diagnosis Heart Disease. Heart is the prime part in a human body. It is an operating system of our body. Other functions human body will badly affected the irregular function of heart Any disarray of the heart is Heart disease. Different from cardiovascular disease is the problems with the blood vessels and circulatory system as well as the heart. According to the cardiovascular disease is the leading cause of death in the UK, US, Canada, and Australia and will occur as a result of cardiovascular disease. Coronary heart disease, arrhythmia, and myocardial infarction are some examples of heart disease. Some important reasons of heart disease are age, smoking, diabetics, fatness, hereditary, depression, hyper tension, blood pressure, cholesterol etc. Usually cardio vascular disease can be use with surgery or medication. But its effective prevention is not yet being done. The effective prevention heart disease is also a target of the research.

2. EXISTING SYSTEM

- Many forms of heart disease can be detected or diagnosed with different medical tests by considering family medical history and other factors. But, the prediction of heart diseases without doing any medical tests is quite difficult.
- It can answer complex queries for diagnosing disease and thus assist healthcare practitioners to make intelligent clinical decisions which traditional decision support systems cannot. By providing effective treatments, it also helps to reduce treatment costs.
- To enhance visualization and ease of interpretation, it displays the results in tabular forms. The system uses various data mining techniques

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A PRACTICAL ATTRIBUTE-BASED DOCUMENT COLLECTION HIERARCHICAL ENCRYPTION SCHEME IN CLOUD COMPUTING

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ABSTRACT:
Ciphertext-policy attribute-based encryption can provide fine-grained access control and secure data sharing to the data users in cloud computing. However, the encryption decryption efficiency of existing schemes can be further improved when encrypting a large document collection. In this paper, we propose a practical Cipher text-Policy Attribute-Based Hierarchical document collection Encryption scheme named CP-ABHE By practical, we mean that CP-ABHE is more efficient in both computation and storage space without sacrificing data security. In CP-ABHE, we first construct a set of integrated access trees based on the documents attribute sets. We employ the greedy strategy to built the trees incrementally and grow the trees by dynamically combining the small ones. Then all the documents on an integrated access tree are encrypted together. Different to existing schemes, the leaves in different access trees with the same attributes share a same secret number which is employed to encrypt the documents. This greatly improves the performance of CP-ABHE. The security of our scheme is theoretically proved based on the Decisional Bilinear Diffie-Hellman assumption. Simulation results illustrate that CP-ABHE performs very well in terms of security, efficiency and the storage size of the ciphertext.

1. INTRODUCTION

Ciphertext-policy attribute-based encryption can provide fine-grained access control and secure data sharing to the data users in cloud computing. However, the encryption/decryption efficiency of existing schemes can be further improved when encrypting a large document collection. In this paper, we propose a practical Ciphertext- Policy Attribute-Based Hierarchical document collection Encryption scheme named CP-ABHE. By practical, we mean that CP-ABHE is more efficient in both computation and storage space without sacrificing datasecurity. InCP-A BHE,we first construct a set of integrated access trees based on the documents' attribute sets. We employ the greedy strategy to build the trees incrementally and grow the trees by dynamically combining the small ones. Then all the documents on an integrated access tree are encrypted together. Different to existing schemes, the leaves in different access trees with the same attribute share a same secret number which is employed to encrypt the documents. This greatly improves the performance of CP-ABHE. The security of our scheme is theoretically proved based on the Decisional Bilinear Diffie-Hellman assumption.Simulation results illustrate that CP- ABHE performs very well interms of security, efficiency and the storage size of the ciphertext.

2. EXISTING SYSTEM

ABE schemes, each document is encrypted individually and a data user can decrypt a document if her attribute set matches the access structure of the document. Existing ABE schemes can be divided into Key-Policy ABE (KP-ABE) schemes and Ciphertext- Policy ABE (CP-ABE) schemes. Both the KP-ABE and CP-ABE schemes are impractical to encrypt a large document collection. Existing techniques cannot provide fine-grained access control mechanisms to the encrypted documents The encryption process in existing system, is executed N times, leading to high computation complexity.

3. EXISTINGSYSTEM DISADVANTAGES

- The encryption process in both the two schemes is executed N times, leading to high computation complexity.
- There is a tradeoff between the size of the content keys' ciphertext and data users' secret keys.
- Decrypting the ciphertext is also time-consuming considering that each document is encrypted individually.

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DYNAMIC MULTI-KEYWORD RANKED SEARCH BASED ON BLOOM FILTER OVER ENCRYPTED CLOUD DATA

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Abstract— With the advantage of storage as a service many enterprises are moving their valuable data to the cloud, since it costs less, easily scalable and can be accessed from anywhere any time. The trust between cloud user and provider is paramount. We use security as a parameter to establish trust. Cryptography is one way of establishing trust. Searchable encryption is a cryptographic method to provide security. In literature many researchers have been working on developing efficient searchable encryption schemes. In this paper we explore some of the effective cryptographic techniques based on data structures like CRSA and B-Tree to enhance the level of security, hence trust. We tried to implement the search on encrypted data using Azure cloud platform.

Keywords: Searchable Encryption, Multi keyword, CRSA, B tree, Azure

1. INTRODUCTION

Cloud computing is one way of computing. Here the computing resources are shared by many users. The benefits of cloud can be extended from individual users to organizations. The data storage in cloud is one among them. The virtualization of hardware and software resources in cloud nullifies the financial investment for owning the data warehouse and its maintenance. Many cloud platforms like Google Drive, iCloud, SkyDrive, Amazon S3, Dropbox and Microsoft Azure provide storage services.

Security and privacy concerns have been the major challenges in cloud computing. The hardware and software security mechanisms like firewalls etc. have been used by cloud provider. These solutions are not sufficient to protect data in cloud from unauthorized users because of low degree of transparency [4]. Since the cloud user and the cloud provider are in the different trusted domain, the outsourced data may be exposed to the vulnerabilities [4]

[14] [5]. Thus, before storing the valuable data in cloud, the data needs to be encrypted [2]. Data encryption assures the data confidentiality and integrity. To preserve the data privacy we need to design a searchable algorithm that works on encrypted data [13].

Many researchers have been contributing to searching on encrypted data. The search techniques may be single keyword search or multi keyword search [11]. In huge database the search may result in many documents to be matched with keywords. This causes difficulty for a cloud user to go through all documents and have most relevant documents. Search based on ranking is another solution, wherein the documents are ranked based on their relevancy to the keywords [3]. Economical searchable encryption techniques help the cloud users especially in pay-as-you use model. The researchers combined the rank of documents with multiple keyword search to come up with efficient economically viable searchable encryption techniques. In searchable encryption related literature, computation time and computation overhead are the two most frequently used parameters by the researchers in the domain for analysing the performance of their schemes. Computation time (also called "running time") is the length of time required to perform a computational process for example searching a keyword, generating trapdoor etc. Computation overhead is related to CPU utilization in terms of resource allocation measured in time.

In this research work, we analyse the security problems in cloud storage and propose a solution for the same. Our contribution can be summarized as follows:

1. For the first time, we define the problem of secure ranked keyword search over encrypted cloud data, and provide such an effective protocol, which fulfils the secure ranked search functionality with no relevance score information leakage against keyword privacy.
2. Thorough security analysis showed that our asymmetric based ranked searchable encryption scheme using CRSA and B-tree indeed enjoys "as-strong-as-possible" security guarantee compared to previous searchable symmetric encryption (SSE) schemes.

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DYNAMIC ROUTING WITH SECURITY CONSIDERATIONS

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Abstract: Security has become one of the major issues for data communication over wired and wireless networks. To enhance the security of data transmission, existing system works on the cryptography based algorithms such as SSL, IPSec. Although IPSec and SSL accounts for great level of security, they introduce overheads. A mass of control messages exchanging also needed in order to adopt multiple path deliveries from source to destination. Different from the past work on the designs of cryptography algorithms and system infrastructures, we will propose a dynamic routing algorithm that could randomize delivery paths for data transmission. The algorithm is easy to implement and compatible with popular routing protocols, such as the Routing Information Protocol in wired networks and Destination-Sequenced Distance Vector protocol in wireless networks, without introducing extra control messages. An analytic study on the proposed algorithm is presented, and a series of simulation experiments are conducted to verify the analytic results and to show the capability of the proposed algorithm.

Keywords: dynamic routing, routing protocols, Routing Information Protocol, Destination-Sequenced Distance Vector protocol, Bellman Ford algorithm

1. INTRODUCTION

In the past decades, various security-enhanced measures have been proposed to improve the security of data transmission over public networks. Existing work on security-enhanced data transmission includes the designs of cryptography algorithms and system infrastructures and security-enhanced routing methods. Their common objectives are often to defeat various threats over the Internet, including eavesdropping, spoofing, session hijacking, etc. Among many well-known designs for cryptograph based systems, the IP Security (IPsec) and the Secure Socket Layer (SSL) are popularly supported and implemented in many systems and platforms. Although IPSec and SSL do greatly improve the security level for data transmission, they unavoidably introduce substantial overheads especially on gateway/host performance and effective network bandwidth. For example, the data transmission overhead is 5 cycles/byte over an Intel Pentium II with the Linux IP stack alone, and the overhead increases to 58 cycles/byte when Advanced Encryption Standard (AES) is adopted for encryption/decryption for IPsec. Another alternative for security-enhanced data transmission is to dynamically route packets between each source and its destination so that the chance for system break-in, due to successful interception of consecutive packets for a session, is slim. The intention of security- enhanced routing is different from the adapting of multiple paths between a source and a destination to increase the throughput of data transmission.

OBJECTIVE

The main objective is to propose a dynamic routing algorithm to provide security enhanced data delivery without introducing any extra control messages. The objective of this work is to explore a security enhanced dynamic routing algorithm based on distributed routing information widely supported in existing wired and wireless networks. We aim at the randomization of delivery paths for data transmission to provide considerably small path similarity (i.e., the number of common links between two delivery paths) of two consecutive transmitted packets. The proposed algorithm should be easy to implement and compatible with popular routing protocols, such as the Routing Information Protocol (RIP) for wired networks and Destination- Sequenced Distance Vector (DSDV) protocol for wireless networks, over existing infrastructures. These protocols shall not increase the number of control messages if the proposed algorithm is adopted. An analytic study will be presented for the proposed routing algorithm, and a series of simulation study will be conducted to verify the analytic results and to show the capability of the proposed algorithm.

MOTIVATION

In Static Routing, the routes are entered manually. It is the best solution when we have small networks, and the networks do not change very often. When we say change

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ELECTRONIC MARKETPLACE FOR COMPUTING CAPITAL WITH BLOCK-CHAIN TECHNOLOGY

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ABSTRACT

We developed a blockchain-based E-marketplace. A decentralized E-marketplace platform utilizing the blockchain technology is implemented. We use the self-enforcement of smart contracts to secure the deposit and process the payment. Each transaction is verified through the blockchain and is recorded to the decentralized ledger. This enables trustless transactions since the smart contract is self-executed. The smart contract is able to perform credible transactions without trusted third parties, and the transactions on the blockchain are trackable and irreversible. Therefore, both the buyer and the seller cannot breach the contract. All processes are recorded on the blockchain including the product launch, purchase, delivery, and payment. It is trackable and could be submitted to courts as electronic evidence to solve the transaction disputes.

1.2 OBJECTIVE

The smart contract is able to perform credible transactions without trusted third parties to improve the customer experience by the efficient delivery of the content and the rapid responses to the customers' demands. It will bring some benefits such as increase traceability, tamper resistant, and ensures that trust is achieved without the need for centralized power. Better experience in pervasive e-commerce.

1.3 EXISTING SYSTEM

- The current e-marketplace ecosystem evolved from Internet technologies.
- It plays an important role in the global economy.
- But the existing system is unable to improve the customer experience by the efficient delivery of the content and the rapid responses to the customers' demands.

More time and cost is required

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ENHANCED SECURITY FOR ONLINE EXAMS USING GROUP CRYPTOGRAPHY

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ABSTRACT: Online exam is field that is very popular and made many security assurances. Then also it fails to control cheating. Online exams have not been widely adopted well, but online education is adopted and using allover the world without any security issues. An online exam is defined in this project as one that takes place over the insecure Internet, and where no proctor is in the same location as the examinees. This project proposes an enhanced secure filled online exam management environment mediated by group cryptography techniques using remote monitoring and control of ports and input. The target domain of this project is that of online exams for any subject's contests in any level of study, as well as exams in online university courses with students in various remote locations. This project proposes a easy solution to the issue of security and cheating for online exams. This solution uses an enhanced Security Control system in the Online Exam (SeCOnE) which is based on group cryptography with an e-monitoring scheme.

1. INTRODUCTION:

Education has expanded rapidly. Even so, the off-line test is usually chosen as the evaluation method for both off-line education and online education. The se- curity of online examinations remains a problem. In some cases, the person writing the exam on a networked computer is moni- tored by a proctor at some predetermined location. But, the requirement for an exam location goes against the accessibility, the major attraction of e-learning or distance learning. The requirement may also negate the cost savings generated by e-learning or pose obstacles for remote students. Simplification and automation of educational processes are other benefits of online educatio, and online exams inherit these advantages.

To remove the requirement for human intervention in secure online exam management so as to capitalize on the advantages of online processes, this paper proposes a solution to the issue of security and cheating for online exams. This solution uses an en- hanced Security Control system in the Online Exam (SeCOnE) which is based on group cryptography with an e-monitoring scheme. The cryptography supports enhanced security control for the online exam process, as well as authentication and in- tegrity. The e-monitoring provides a proctor function to remote examinees to prevent cheating, and thus removes the require- ment of having to go to a fixed location. The target of this paper is online exams for mathematics or English contests in middle or high school, and exams in online university courses with stu- dents at remote locations. This paper addresses the problem of administering an online exam at a fixed time with the same ques- tions for all examinees, just like an off-line exam, but without re- stricting the physical location of the examinees. As the SeCOnE system enables many kinds of tests to be given online, it can pro- vide teachers with better evaluation standards for students and may contribute to improving the quality of education.

Requirements For A Secure Online Exam

The requirements for a secure online exam are as follows.

- Accessibility Online exams should be possible without re- gard to location and time.
- Monitoring The absence of proctoring on online exams may relax the examinees and encourage cheating. Therefore, it is necessary for an online exam manage- ment system to have some monitoring method to prevent and to detect cheating.
- Management Online exam management includes

problem creation, problem sheet distribution, answer sheet collec- tion, marking, grade posting, and handling of appeals. The cost savings of online exams mitigate the burden of exam enforcement and induce many examinees located at very remote sites to participate in the exam. Educators can ob- tain more objective standards for evaluation.

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COMPARATIVE ANALYSIS OF CAPITAL MARKET AND PERFORMANCE

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ABSTRACT- Stock futures are derivative contracts that provide you to get or sell a couple of stocksat a set price by a specific date. Once you get the contract, you are obligated to uphold the conditionsof the agreement. It allows hedgers to shift risks to speculators.It gives traders a competent notion of what the futures price of a stock or value of an index mayvery well be. Based on the existing future price, it can help in identifying the near future demandand offer of the shares.Since it really is predicated on margin trading, it allows small speculators to participate and tradein the futures market by paying a little margin rather than the whole value of physical holdings.

KEYWORDS: Comparative Analysis of capital market and performance

1. INTRODUCTION:

This undertaking will be useful for people who need to put resources into a cash related exchangeor who need to consider the showcase of securities exchange and this task divulgences andrecommendations are helpful to get benefits for an extended length and passing inspectors.Relative financing cost impacts trading scale through changes in capital streams. Regardless,capital streams are not coordinated by relative development cost alone. For instance, in India andChina capital inflows as outside direct undertaking (FDI) are happening an aftereffect of higherpace of return that remote analysts (i.e., overall affiliations) might want to acquire in these nationsthan in their nuclear family economies.

2. MARKET AND PERFORMANCE:

The affiliation coefficient is a genuine measure that forms the idea of the relationship between thegeneral enhancements of the two factors. The degree of attributes for the relationship coefficientobliged by 1.0 on a level out worth explanation or between - 1.0 to 1.0. In the event that therelationship coefficient is more obvious than 1.0 or not really - 1.0, the affiliation estimation ismisinformed. A relationship of - 1.0 shows an ideal negative relationship, while a relationship of1.0 displays an ideal positive affiliation. A relationship of 0.0 shows zero or no relationshipbetween the improvement of the two components

Above all else, make it unsurprising to work together in India. The most noteworthy need for anyfinancial specialist is to believe that the ref won't change the standards of the game halfway, in anyevent not all of a sudden.

There have been numerous changes in the previous not many years that have brought India'spositioning up in the simplicity of working together by around 100 positions. In any case, Indianassembling has scarcely mixed. A considerable lot of the choices have made more alarm thanenergy in view of their suddenness and intervention. Speculators need long haul security of termsof working together more than quick simplicity before submitting billions, particularly ingreenfield ventures.

3. LITERATURE REVIEW :

In India to succeed, India needs to decide. Beginning with the GARR proposition of2009, India's financial arrangement making has been directed by the state's need of blocking chargespillage and expanding its duty income. Observation and examination of business have overwhelmed the advancement and backing of venture. The worry for condition has additionally been applied obtusely to make it hard to set up new manufacturing plants.

The legislature has done a great deal to bring down the expense of working together; for instance,the ongoing lure of 17 percent charge for interest in assembling if creation starts beforeOctober 2023. Many state governments have shortened or suspended work security laws to add tothe arrangement. In any case, financial specialists are frightened by the suddenness and mediationof these choices. They need significant serenity more than the present arrangement.

The second thing that India needs to make fabricating

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TO STUDY THE EFFECTIVENESS OF PERFORMANCE APPRAISALSYSTEM ATCAPITAL IQ INDIA PVT LTD

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ABSTRACT:Performance Appraisal has been considered as the most significant and indispensable tool for an organisation, for the information it provides is highly useful in making decisions regarding various personnel aspects such as promotion and merit increase. Performance measures also link information gathering and decision-making process which provide a basis for judging the effectiveness of personnel sub-divisions such as recruiting, selection, training and compensation.This research will concentrate on examining the effect of the performance appraisal on individual as well as on the organisations. The sample size of 100 has been chosen from the CAPITAL-IQ PVT LTD. The data used for study is primary data collected through the help of questionnaire filled by the samples. The data was evaluated with the help of statistical tools i.e., descriptive statistics. The findings of the research show that.Performance appraisal in CAPITAL-IQ meets the most important function of performance appraisal itself that is improvement of performance. Performance appraisal in the past helped them in getting promotion. Employees find their superior to be helpful and co-operative.

KEY WORDS:
Performance Appraisal, Recruitment, Selection, Training, Personal Qualities, Employer, Employee, Feedback, Compensation

1 INTRODUCTION:

Performance Appraisal (PA) has been considered as the most significant an indispensable tool for an organisation, for the information it provides is highly useful in making decisions regarding various personnel aspects such as promotion and merit increase. Performance measures also link information gathering and decision-making process which provide a basis for judging the effectiveness of personnel sub-divisions such as recruiting, selection, training and compensation.Constant appraisal of each associate should be to contribute by all chances towards the achievement of its objective. hierarchic feasibility is as all now and again as possible separated and body capability. In like manner, since the organization exists to accomplish the objectives, the PA of accomplishment that individual specialists have in achieving this individual objective is critical to pick hierarchic adequacy. The assessment of at any rate gainful specialists is at the social gathering their objective to return to a crucial piece of human in spite of the pros.

1.2 NEED FOR THE STUDY:

Performance appraisal should be a positive experience and contribute to the overall welfare of the organization. If done properly, performance appraisal is a very effective tool to improve performance, productivity and for developing employees. It helps individuals to do better, raises self-esteem and motivation. To give appraisal data concerning the degree of accomplishments and course of an operator. Evaluation of an employee's performance helps to take management decisions on transfers, promotions, increments etc. 2. Performance appraisal helps to ascertain the training and development needs of the employer. It ensures basic data concerning staff and right now outline of their commitments.

1.3 OBJECTIVES:

1. To identify the factors for appraising the performance of employees.
2. To assess the techniques used by the company in appraising performance of employees.
3. To suggest measures to improve performance of employees.

1.4RESEARCH METHODOLOGY

Research Design:

A Descriptive Research Design has been adopted and a Survey Method has been used.

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TO STUDY THE EFFECTIVENESS OF RECRUITMENT AND SELECTION PROCESS USING SOCIAL NETWORK

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ABSTRACT:The main motivation of this paper is the usage of social media and social network, in specific LinkedInin the recruitment and selection procedure. Millennial are predicted to make up three fourths of the global workforce in the future years. This generation is significant and different from the older generation due to their presence during the complete overhaul of our society and tectonic shifts taking place in the tech sector. Their expectations, needs and requirements are completely different from those of previous generations. In the past few years internet and social media has taken over every aspect of our lives. The millennial generation has been one of the biggest drivers of this rapid expansion. Social media is one of the most effective tools as it holds the power to generate awareness about causes and form relationships. An average millennial spends a significant portion of their day on a social networking site. In the paper, the researcher has tried to establish a study on how employers can effectively use social media to recruit employees that are the right fit for their vision, mission and culture. The researcher has tried to highlight practices of employers to attract prospective employees to apply for vacancies in the company. The research methodology used is secondary data collected via analytics reports, articles and research papers. The effective use of social media is also analyzed by the use of multiple case studies. The study is significant as it contributes to understanding social media and practices adopted by the human resource department to attract potential talent.

KEYWORDS: Social Media, Recruitment, Selection, Strategies, Millennials, Talent.

1 INTRODUCTION:

Social networking sites (SNSs) can be viewed as instruments to filter job candidates in the selection period. This could have negative or positive results for job candidates based on the subject material of any SNS profile. puts it this way: Online social media sites offer you a screening instrument for job candidates. It is improbable that a job candidate would actually connect provocative photos, detailed descriptions of sexual escapades, or maybe a summary of hobbies which has funneling beer and recreational drug make use of on his/her resume. But with only a couple of clicks of the mouse, you are able to figure out all kinds of revealing info about prospective candidates'. From a management standpoint, using SNSs in recruitment and selection processes entails pitfalls and promises for HR professionals. The promises within the recruitment phase are talked about first, since it's also the very first stage in the resourcing process. The promises in the selection period are reviewed in section 4.3.2. The literature applied to each chapter four and also chapter five is conducted from diverse, mostly American sources as well as positioned in the context of the frame of mine of reference.

Need of the study:

In order to study the recruitment management by using social networking platforms.

- To determine and recommend measures because of the improvement on the recruitmentprograms.
- Create a talent pool of applicants to allow the choice of perfect prospects for thebusiness.
- Determine future and present demands of the group along with its personnel planning and work analysisactivities.
- Meet the companies legal and social responsibilities about the structure of its workforce.

OBJECTIVES:

- In order to learn the recruitment and selection process in SUMEGA TECHNOLOGIES Ltd,Hyderabad.
- To understand how the new applicants are recruited and also positioned in SUMEGA TECHNOLOGIES Ltd,Hyderabad.