Decentralized File Sharing System Using- IPFS

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ABSTRACT

Storing and Retrieving large amounts of data, especially media on centralized servers leads to a huge expense in terms of storage and maintenance. High traffic on these centralized systems can cause bottlenecks and crashes. The usage of the proposed networking protocol namely, the IPFS which is "The Inter-Planetary File System" is a peer-to-peer distributed file system which connects all computing devices with same system of files. The conclusion is that, in order to overcome the centralization in current working systems, the proposed IPFS model achieves it since it has no single point of failure, and nodes do not need to trust each other.

1. INTRODUCTION

A Decentralized file sharing system. The decentralized sharing and storage network is built using the IPFS infrastructure. Using this architecture, chunks of the media file can be stored in multiple nodes on the network. When a user requests for a certain media file, be it text , an image or a video, all these chunks of data can be retrieved from these nodes in parallel thereby reducing the retrival time drastically. A progressive Web App (PWA) is built that enables a cross platform interface for uploading and listing the user's files. In simple terms, it's a universal decentralized cloud files storage and sharing platform.

The working of IPFS is a main stream, that enables the model we built to function the way a decentralized network should. Al-though there have been many distributed file system in use and, Among the academic attempts, AFS [6] has succeeded widely and still in use today and to name a few, However these applications were not designed as infrastructure to be built upon and no general file-system has emerged that offers global low-latency, and decentralized distribution. Along with the cross platform Progressive Web App (PWA), we have also built a cross platform mobile app, which serves the features of efficient uploading and downloading of data between any number of nodes connected on the network with an add on feature of firebase user Authentication which provides a sense of security to the mobile app, which was seen lacking in the Progressive Web App (PWA).

1.1. OBJECTIVE

The main objective of our proposed system is to provide the end user with an decentralized file sharing system that also acts as a storage platform, which is achieved by using the IPFS as an infrastructure for the model to work.

1.2. PROPOSED SYSTEM

The model being developed enables the end user with the flexibility of using the features of IPFS both on desktop and mobile, and bringing through a file sharing system where-in nodes connected to the network can readily access and share the data among themselves forming a swarm of interconnected networks for communication.

VOICE ASSISTANT FOR VISUALLY IMPAIRED IN ANDROID

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Abstract: - This is an innovative system for visually impaired people and acts as a voice assistant for them. This system is used to help the visually impaired to have access to the most important features of the phone enhancing the quality of the system making use of different custom layouts and using speech to text. The system has custom messaging features also. It also have dialer options as well. There is an important thing is to know about the current time and location. All the actions are performed by the system. The user also read the contents of the message for checking purpose. The system also allows the user to open the prescribed application using voice. Our voice assistant application give solution for visually impaired people. The custom app doesn't save any data it is dependent on the phones data.

I. INTRODUCTION

Now a days, many android applications are available which provides many smart things to the users. Google's Android Operating System in Mobile phones are still relatively new, however, Android Operating System has been progressing quite rapidly. Easy access to thousands of applications via the Google Android App Market – When you love to install applications or games, through Google's Android App Market can download applications for free. Conceived as a counterpoint IOS, Android is a graph showing a significant development, it certainly cannot be separated from supports major mobile phone manufacturers who participated to bring mobile-phone operating system Android.

II. RELATED WORK

This paper proposed Be My Eyes, a universal voice control solution for non-visual access to the Android operating system.[1]It has been observed that nearly about 60% of total blind population across the world is present in INDIA.[4]As our society farther expands, there have been many supports for second-class citizens, disabled. One of many supports that are urgent is the guarantee of mobility for blind people. There have been many efforts but even now, it is not easy for blind people to independently move.[2] With the rapid growth of wireless communications, the need for voice recognition techniques has increased greatly. Voice applications based on voice interfaces, voice recognition, and voice dialogue management can help users to be focused on their current work without extra effort for hands or eyes.[3].

EXPRESSIVE KEYWORD SEARCH IN CLOUD OVER ENCRYPTED DATA

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Abstract: : Searchable encryption enables a cloud server to perform keyword search over scrambled information for the benefit of the information clients without learning the basic plaintexts. Notwithstanding, most existing accessible encryption plots just help single or conjunctive keyword look, while a couple of different plans that can perform expressive keyword search are computationally wasteful since they are worked from bilinear pairings over the composite-request gatherings. In this paper, we propose an expressive public key accessible encryption conspire in the prime-request gatherings, which permits keyword look arrangements (i.e., predicates, get to structures) to be communicated in conjunctive, disjunctive or any monotonic Boolean equations and accomplishes noteworthy execution improvement over existing plans. We formally characterize its security, and demonstrate that it is specifically secure in the standard model. The results show that our plan is considerably more productive than the ones worked over the composite-request gatherings.

Indexed Terms - Searchable encryption, cloud computing, expressiveness, attribute based encryption.

I. INTRODUCTION

Cloud Computing is a rapid growing technology which provides various of resources to the user on demand like storage resource, computing resources and so on. Basically, users store the data on cloud and retrieve the data when required. But the problem is unauthorized access of the data. Thus, searchable encryption (SE) allows a cloud server to performs keyword search over encrypted data without learning the underlying plaintexts on behalf of the data users. Consider a cloud-based social insurance data framework that has redistributed patient health records (PHRs) from different medicinal services suppliers. The PHRs are scrambled in request to conform to protection guidelines like HIPAA. In request to encourage information use and sharing, it is exceedingly alluring to have an searchable encryption plot which permits the cloud specialist organization to look over encoded PHRs for the benefit of the approved clients, without learning data about the basic plaintext. Multiple data sharing among multiple data users is the main context in the ystem. Hence, SE plans in the private-key setting , which expect that a single client who looks and recovers his/her very own information, are not appropriate. Hence, SE plans in the private-key setting , which expect that a single client who looks and recovers his/her very own information, are not appropriate. On the other hand, , private data recovery (PIR) protocols , which enable clients to recover a specific information thing from a database which openly stores information without uncovering the information thing to the database manager, are additionally not reasonable, since they require the information to be freely accessible. So as to handle the keyword search issue in the cloud-based human services data framework situation, we resort to open key encryption with keyword look (PEKS) plans, which is initially proposed in. . In a PEKS plot, a ciphertext of the keyword called "PEKS ciphertext" is added to an encoded PHR. To recover all the encoded PHRs containing a keyword, state "Diabetes", a client sends a "trapdoor" related with a search query on the keyword "Diabetes" to the cloud service provider, which selects all the encrypted PHRs containing the keyword "Diabetes" and returns them to the user while without learning the underlying PHRs. However, the solution in as well as other existing PEKS schemes which improve on only support equality queries . Set intersection and meta keywords1 can be used for conjunctive keyword search. . In order to address the above deficiencies in conjunctive keyword search, schemes such as the ones in were put forward in the public-key setting. Ideally, in the practical applications, search predicates (i.e., policies) should be expressive such that they can be expressed as conjunction, disjunction or any Boolean formulas of keywords. In the above cloud-based healthcare system, to find the relationship between diabetes and age or weight, a medical researcher may issue a search query with an access structure (i.e., predicate). SE schemes supporting expressive keyword access structures were presented in. In this paper, we propose an open key based expressive SE conspire in

MEDIBOX – IOT Enabled Patient Assisting Device

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***Abstract*—The wellbeing and health division is basic to human culture and thusly ought to be one of the first to get the advantages of forthcoming advances like IoT. A portion of the Internet of Medical Things (IoMT) are associated with IoT systems to screen the everyday exercises of the patients. As of late there has been endeavors to structure new therapeutic gadgets which screen the prescriptions and help matured individuals for a superior helped living. In this paper, one such endeavor is made to structure a multipurpose convenient savvy gadget named MEDIBOX which enables the patients to take their medications at the correct time. This container is a capable framework which keeps medications prescribed by the doctor and therefore keeps up the power of the prescriptions regardless of whether the patient is voyaging. Identified with this, we have built up cloud-based establishment and checking that stores and controls the MEDIBOX usefulness for further examination and future adjustment in plan angles.**

Keywords: IOT, Android Device, Assisting Device, NodeMCU, Power Supply.

I. INTRODUCTION

IoT is making solid advances in the restorative business with the presentation of applicable sensors and gadgets. IoMT is a gathering of therapeutic gadgets associated with medicinal services IT frameworks for various applications. The development of IoMT has especially affected human services for the matured and handicapped individuals, yet not simply restricted to them. In the quick paced world, indeed, even standard people need support with their everyday exercises. One such imperative action is to assist them with taking their medicines once a day without missing any portion. The by and by accessible gadgets for prescription adherence have a few disadvantages and are confined to fundamental usefulness like filling just a solitary need of an update framework. The multifaceted nature and cost related with increasingly expand frameworks prompted the improvement of another versatile gadget in this paper named as "MEDIBOX" – a canny prescription apportioning gadget. It is intended to help the old individuals who regularly neglect to take their prescriptions or take the wrong pills or dose. It likewise causes individuals who used to travel much of the time and should take customary medicine. Henceforth, we proposed a multi-reason, compact IoT-empowered MEDIBOX which is utilized deliberately to address those relevant issues.

Just around 50 percent of patients hold fast to their medicine routine alright to get the full advantages of their remedies. There are numerous explanations behind not carefully following the routine i.e., carelessness, multifaceted nature, absence of legitimate mindfulness about the meds, an absence of association from family and companions, etc. Numerous individuals can't keep in mind whether they took as much time as is needed, particularly the individuals who take numerous medications. The individuals who defer their dose timings risk an overdose while curing at the following booked time. Under and over-measurement of medication, the nonattendance of medicine organization and checking systems can prompt numerous complexities in wellbeing. In spite of the fact that blunders can happen in any phases of prescription procedure, it frequently occurs amid the organization arrange. MEDIBOX is intended to alarm the patient at the correct occasions alongside the right measurements in remedy. Alongside reminding a patient about prescription it ought to be guaranteed that drugs are devoured without corrupting their strength. Capacity is an imperative angle of the all-out medication control framework, so in the plan of MEDIBOX a fitting situation is made to keep up the medication viability. The historical backdrop of drugs an individual expended is very vital, so the utilization subtleties are transferred to the cloud for further medicinal reference. MEDIBOX is additionally skilled enough to caution its client about their next meeting with the specialist.

Ambient Assisted Living (AAL) includes specialized frameworks to help old people in their everyday exercises to permit an autonomous and safe way of life to the extent that this would be possible. MEDIBOX is centred around helping the old and patients in holding fast to the drugs normally come what may, subsequently making a difference them to maintain a strategic distance from any future challenges. The MEDIBOX structure fuses a controller, sensors for estimating a lot of parameters, a continuous clock and a SD card module. The cooling framework is consolidated in the MEDIBOX utilizing a little Peltier gadget. The subtleties of the devoured prescriptions with explicit time interim are saved money on a safe cloud that can be utilized for further examination. Thus, in this paper, we have planned a social insurance framework that, using IoT-empowered sensors and important equipment, helps people in taking their recommended prescriptions on time evading future results.

II. RELATED WORK

The Internet of Things (IoT) is broadly being perceived by scientists as a standout amongst the most modern advances with the planned to significantly change wellbeing, security and addresses significant effects inside the general public. Medicinal gadget organizations are transmuting themselves from gadgets/consumable suppliers to illness/care the board firms. The IoMT gives a domain in which the patient's fundamental parameter subtleties get transmitted through a entryway onto a cloud based stage where it is put away, totalled and dissected. It helps store information for many

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 06 Issue: 04 | Apr 2019 www.irjet.net p-ISSN: 2395-0072

STUDENT PORTAL

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Abstract : *Social media is a platform where the general public communicates with each other. But there are no proper source or media which allows students/teachers to communicate with students/teachers of other colleges that are under VTU(Visvesvaraya Technological University). So, in this paper, an Integrated Android Application is described which allows students as well as teachers to communicate with students and teachers of other colleges under VTU and also provides them with additional features and functionality.*

Index Terms: **Integrated, Android Application, Social media.**

1. INTRODUCTION

Social media applications are used for posting and sharing information. It is used by a large number of students as well as teachers. But when it comes down to sharing information related to achievements in academics or other college related activities like Hackathons, Quiz competitions etc., social media applications like Facebook does not provide the right platform as they go unnoticed by other students/teachers. Hence, to provide a platform where students as well as teachers can interact with other students and teachers, share student related events, ask queries, share/upload notes etc., an integrated android application is built to provide all of these features and functionality.

2. LITERATURE SURVEY

There have been several applications and websites developed that are focused on student related activities :

[1] Smart Campus is a mobile as well as web application. It's main objective is to develop an application for the execution of several academic operation to provide students with information regarding complaints, any placement activities, general notices, and important notices regarding all departments. But it is applicable for only one University.

[2] University Portal portals integrate campus-specific information and activities which is stored in the campus electronic vaults such as databases, file systems and existing application systems, with unstructured data. But lack of or delayed communication can hamper progress and slow down the rate at which work is done.

[3] Student App for GDCST is another web application that provides students, teachers and administration to do all their study related activities without login to different websites. But it has limitations like students can only receive messages and not send them and the university has to create the student's account.

A SMART DRIVER ALERT SYSTEM

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Abstract: - Road traffic constitutes a major part in the problem of society. As the road traffic is increasing day by day there is a necessity of following the traffic rules with proper discipline. Traffic rules consists of traffic sign boards and traffic signals which are meant to be followed by everyone in the society. To provide a comprehensive assistance to the driver for following the traffic signs, we are representing Traffic sign detection and driver alert system .This paper presents an overview of the traffic sign board detection and recognition and implements a procedure to extract the road sign from a natural complex image, processes it and alerts the driver using voice command. It is implemented in such a way that it acts as a boon to drivers to make easy decisions. The camera used is installed on the vehicle. Traffic signs are detected by examining the colour using the colour space. Our methodology of implementation used for segmentation and recognition of the red object sign boards obtained as a live video image as per algorithm.

Indexed Terms -MATLAB R2018a, Image processing..

I. INTRODUCTION

In traffic environments, India records a huge number of accidents in the world. In this situation, an automatic system used to detect and recognize traffic signs, mounted on vehicles, would help a lot. Many of them are avoidable, especially those which are caused by missing the traffic sign boards. Automatic traffic sign detection and recognition plays a crucial role in building an autonomous system .A fast real-time and automatic traffic sign detection and recognition can support and disburden the driver, and thus, significantly increase driving safety and comfort. Road signs, indicating turns, directions and landmarks, also help to save time and fuel by providing information on the route to be taken to reach a particular destination. These markers let drivers know how fast to drive. They also tell drivers when and where to turn or not to turn. In order to be a terrific driver, you need to have an understanding of what the sign mean.

II. RELATED WORK

In Existing work this approach is used in many fields like counting the number of objects and counting the vehicles and observing the traffic and detecting particular objects using blob analysis. But the proposed system going to detect and classify sign boards which will not done before. So this can extend various other poses. At present, there are lots of applications in the system of traffic surveillance and video monitoring Optimization for surveillance system generally aims at improving system efficiency and seeks for good performance with less resource. Live video process in surveillance systems leads to study on image processing methods. Researchers improve algorithms to achieve good performance. However, most of them aim at video processing and separating from concrete surveillance application. When working, video based traffic surveillance system will get live video data, transmit data, and conduct processing and return result. We will mainly concentrate on the steps involving in data processing and complex computing which will affect system performance immensely, consisting of greying, banalization, demonising and moving object

© 2019 JETIR May 2019, Volume 6, Issue 5 www.jetir.org (ISSN-2349-5162)

SPEECH BASED HOME AUTOMATION SYSTEM WITH USER AUTHENTICATION

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Abstract: - Generally, most of the home appliances nowadays, are controlled by switches and remotes. Also, one need to be near the switchboard to access those appliances. Not only this, it is tough for the handicapped, especially abled or elderly people to access the switchboards which are at some height. So, in order to solve all these issues, we have implemented a home automation system based on human speech using IOT (Internet of Things). Also, Desktop application is provided for registering new user with multiple voice samples and removing the existing user and to access the devices in case the user is not in system's range.

Index Terms - IOT, Voice Automation, Speech Recognition, Speaker recognition

I. INTRODUCTION

Nowadays, most home appliances such as TV, light bulbs, and air-conditioners are controlled by switches or remote controllers manually. In order to control switch-based appliances, a user must be near the switches. To overcome this inconvenience, there have been many researches to use human speech to control home appliances [5]-[6]. One need to go near the switchboard, press the switch to Switch ON/OFF the desired appliance. Now, imagine a house with elderly/handicapped people who are not able to reach to the switch easily. In such cases, this switch or remote technique becomes a burden for them. So, in order to help such people and to make their life even easier, we implemented a home automation technique which is based on the person's voice. The person must speak out the command switch ON/OFF. Along with voice technology, a Desktop Application is provided using which the house owner can add/remove the access of any person to these appliances. This application also provides the user some manual switch buttons by which he/she can access the appliances when he/she is out of the system's range. In order to achieve this, we are making use of a very commonly used technology called IOT (Internet of Things). It is an internetwork of physical devices which communicates with each other and process according to the information being shared. There are various ways to interact with the home automation system like: using sensors, various body gestures or by using a person's biometrics like retina scanning, fingerprint or by human voice.

In this system, we are using human voice to control the home appliances. The entire voice control system is divided into 4 modules: Speech Detection, Speaker Verification, Voice Recognition & Command Execution. Along with voice control, we are also providing a desktop application to add/remove the authenticated users who can access the voice command.

Home automation means controlling of home functions and features automatically and controlling the home appliances using voice commands provides accessibility, comfort, energy efficiency, security by providing control and monitoring of appliances, security surveillance.

II. LITERATURE SURVEY

This paper provides a simple introduction to the IoT, its application and potential benefits to the society [1]. IoT has received much attention from scientists, industry and government all over the world for its potential in changing modern day living. IoT is envisioned as billions of sensors connected to the internet through wireless and other communication technologies. The sensors would generate large amount of data which needs to be analysed, interpreted and utilized [2].Internet of Things is a concept where each device is assign to an IP address and through that IP address anyone makes that device identifiable on internet [3].Gadget controlling by switch or remote is old idea now. We can control any home apparatuses by utilizing our voice. The fundamental point of this venture is to control light, fan, AC and so forth utilizing human voice. The benefits of utilizing a voice interface as a medium are perpetual. As a matter of first importance we would get rid of or altogether lessen the requirement for preparing in working the innovation. Also, the appropriation of innovation administrations for disentanglement would prompt to a more extensive and more fluctuated access to a similar innovation would help individuals with incapacities. [4]

III. PROPOSED SYSTEM

3.1 Block Diagram of Proposed System

IDENTITY MANAGEMENT USING BLOCKCHAIN

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Abstract: In the present interconnected world, digital IDs are used to demonstrate identity. These IDs prove to be related to the service being accessed and requires us to apply a significant amount of privacy. The current systems possess number of problems such as proxies, vulnerable to data theft but blockchain proves to be the solution for this type of Identity related problem. In this paper, we describe a decentralized identity management system that ensures users own and control their data by using blockchain technologies. The main objective is to maintain a decentralized system to store identity of a person and protect individual identities and massively reduce fraudulent activities.

Indexed Terms - ReactJS, Blockchain, BigChainDB, Hash.

I. INTRODUCTION

In recent years, Blockchain technology has got more attention in the security field. In past we used to store data in a centralized database which is not that efficient, if the database is breached or if someone has knowledge on security features of it, data inside it can be easily be amended or misused. By using Blockchain the system that could run only under authority, can now run between strangers even they are not trust worthy and that too without any middle-men. This can achieved by using Blockchain, because it uses decentralized technique for storing data and can expect same performance as in centralized fashion, which was not possible earlier using centralized system. Blockchain has been our choice to develop the project, Blockchain holds blocks linked together. Each block in a blockchain contains a cryptographic hash of the previous block, a timestamp, and transaction data. By design, a blockchain is immutable, meaning the data can only be asserted to the chain and no existing data can be modified. The blockchain is also transparent, meaning any public address transactions and holding are open for viewing. The system is also decentralized; hence the servers won't be overloaded with requests. The system is hence resistant to tampering while being transparent to public.

II. RELATED WORK

We live in the age where nearly everything about our own identity can be found on the web. Our online information impressions are broad, consolidating every little thing about us from our name, age, money related history, work history, locations and social records. The Aftermath 2008 report published by Identity Theft Resource Centre [1] has shown that financial identity theft crimes was reported by 73% of the respondents while 5% reported criminal cases only, and 2% reported governmental issues only. The rest were combination cases: financial and criminal (6%), financial and governmental (9%), and a combination of all three types (5%). By combining the blockchain decentralized principle with identity verification, a digital ID can be made that would act as a digital watermark which can be assigned to every online transaction. The solution can help the organizations to check the identity on every transaction in real time, hence, eliminating rate of fraud[2]. Finding an effective method to protect users from identity theft and in this way protecting consumers and society as a whole is of urgent importance to maintain a healthy economy and stable social environment. The main idea here is to provide the solution for identity theft and Identity management using blockchain tries to overcome the identity theft problems.

COUNTERFEIT DRUG IDENTIFICATION AT SUPPLY CHAIN

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Abstract: Counterfeiting of drugs and medications have been enrooted into our community and the general public isn't aware of it. According to Outsourcing Pharma in 2012 [1], 75% of the world's counterfeit drugs had some origins from India. The volume is alarming and shows the inefficiency in the current system not capable of tracking the counterfeit drugs. To fix situation of such scale will be requiring a complete change in the system and can't be achieved without the help of general public. SmartChain is the software as service we are providing to manufacturers, pharmacists, and general public to make a system which will be able to make each drug identifiable and help pharmacists and users distinguish between counterfeit and authentic drugs. The main objective of SmartChain is to help users from distinguishing counterfeit and genuine drugs in doing so helping overcome other problems such as Ensuring brand safety, preventing hazards led by consuming, counterfeit drugs, creating awareness in general public, being a support system to authorities to track the origin of counterfeit drugs.

Indexed Terms - ReactJS, Blockchain, bigChainDB, QR code, Cloud Services, Hash.

I. INTRODUCTION

This paper covers the issues with the current supply management systems' measures taken to help distinguish between the genuine and counterfeit drugs. The paper also includes chapters which will be talking about the project work done on the same issue to build a system which works more efficient than existing ones and will have a positive impact on not just improving the numbers statistically but also creating awareness in society that not to take consumption of medicines for granted.

Blockchain has been our choice to develop the project, Blockchain holds blocks linked together. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data. By design, a blockchain is immutable, meaning the data can only be asserted to the chain and no existing data can be modified. The blockchain is also transparent, meaning any public address transactions and holding are open for viewing. The system is also decentralized; hence the servers won't be overloaded with requests. The system is hence resistant to tampering while being transparent to public.

II. RELATED WORK

The current supply chain management system works based the Drug companies. The drug companies handle the medicines being supplied at their will, based on the margins, return of investment, vulnerability of drug getting counterfeited, hence we can conclude there is no uniformity in how the drugs are supplied or managed. Some of the existing techniques [2] include improving packing of drugs where the packing is done in such a way that if there is any tampering of packages meaning the drug has been counterfeited, RFID where medicines are tagged and these tags are used as seals to identify the product as genuine, mass encryption technology, and use of holograms which is also used to tag products to help others identify it as authentic. These techniques have proven to be expensive as per either price or time consumed. The techniques used are an overhead to manufacturer to integrate such methods as margins are very low and won't be worth for manufacturer to deliver products who's packaging will cost more than actual medicine. These techniques have

SMART AUTOMATIC MOVABLE ROAD DIVIDER

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Abstract: Road for continuous and approaching traffic. This helps keeping the progression of traffic. By and large, there is equivalent number of paths for both progressing and approaching traffic. For instance, in any city, there is mechanical zone or shopping zone where the traffic by and large streams in a single heading in the first part of the day or night. The opposite side of Road divider is for the most part either unfilled or under-used. This is valid for pinnacle morning and night hours. This outcomes in loss of time for the vehicle proprietors, roads turned parking lots just as underutilization of accessible assets. Our thought is to detail an instrument of computerized mobile road divider that can move paths, with the goal that we can have progressively number of paths toward the hurry. The total effect of the time and fuel that can be spared by adding even one additional path to the course of the surge will be noteworthy. With this application proposed underneath, we will likewise wipe out the reliance on manual mediation and manual traffic coordination so we can have a more astute traffic everywhere throughout the city. A Computerized portable road divider can give an answer for the previously mentioned issue viably. This is conceivable through IOT. IOT alludes to Web of Things where the genuine digitalization comes into picture. Here sensors has a noteworthy job. We can accomplish this utilizing Arduino board. On the off chance that the stream is smooth on either side, at that point there is nothing to stress except for the path which is having more traffic, the divider is moved to a specific separation to the smoother path so as to smoothen the bustling path.

Keywords—Raspberry – pi, image processing, traffic control, Vehicle counting, Arduino Board, Pi Camera, Ultrasonic sensors.

I.INTRODUCTION

The issue with Road Dividers is that the quantity of paths on either side of the road is fixed. Since the assets are restricted and populace just as number of vehicles per family is expanding, there is huge increment in number of vehicles on roads. This calls for better use of existing assets like number of paths accessible. The primary point of this task for the traffic controlling. The reason for the venture is to diminish the season of voyage in the pinnacle hours and to maintain a strategic distance from traffic blockages and to give a superior and a more intelligent answer for the above traffic issues

NEAR FIELD COMMUNICATION FOR PAYMENTS

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Abstract—One of the basic goal of technology is to merge various technologies to make life easy. NFC or Near Field Communication is one such technology. NFC technology have become increasingly prominent over the past few years. It has created a revolution among users as consumers switch to cardless transactions and digital transactions. Payments through NFC technology aims at providing users a secure transaction from customer to retailer by providing an easy user experience with less human interference. NFC are built in different kind of devices such as mobiles, wristbands, cards, tags etc. which allows transfer of information or payment credentials between any such NFC enabled devices. In this research an NFC card is used to store minimal payment credentials which is transferred to other device during payment.

Keywords: **NFC, Digital transactions, NFC card.**

I. INTRODUCTION

As an indispensable part of commerce environment, payment with paper currency and in face-to-face way has existed for centuries. With the rapid development of technology, payment has been persistently changing from traditional methods to the ones faster and more convenient. For the past decades, along with the popularization of the internet, the E-commerce has emerged and fitted in many fields around us. Therefore, internet has made it possible to revolutionize the way we do payment. The mobile payment refers to payment services operated under financial regulation and performed from or via a mobile device. Internet environment and mobile devices make merchants and customers around the world connected. With the information technology, the mobile payment can simplify payment procedure tremendously. Users of mobile payment can get rid of the limitation from real currency and geography. Recently mobile payment has sharply risen with the issue of the Google Wallet. The value of mobile transaction is expected to reach more than $ 600 billion by 2020 and Asia, Western Europe and North America will be responsible for most of all mobile payment transactions. Near Field Communication (NFC) is an emerging technology for short range communication between two electronic devices. It is based on the **Radio Frequency Identification (RFID)** which uses magnetic field induction to enable communication. NFC operates within the globally available and unlicensed radio frequency ISM band of **13.56Mhz,** whereas other contactless technologies such as Bluetooth operates in **2.4Ghz** frequency. Digital Payment systems are broadly defined as any system used to perform transactions through monetary value and requires both parties to adhere to the technologies which are necessary for digital transactions.

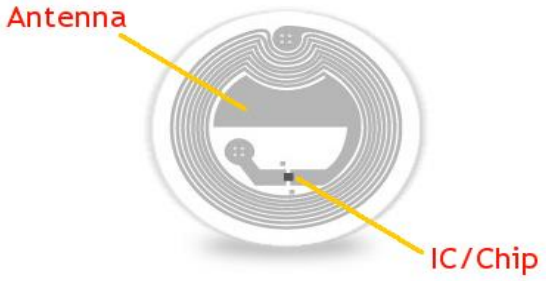

FIG 1: COMPONENTS OF NFC TAG

A. EXISTING SYSTEM

In the current system, Paytm is available in 11 Indian languages and offers online use-cases like mobile recharges, utility bill payments, travel, movies, and events bookings as well as in-store payments at grocery stores, fruits and vegetable shops, restaurants, parking, tolls, pharmacies and education institutions with the Paytm QR code.

DISADVANTAGES OF EXISTING SYSTEM

WIN-WIN ONLINE ADVERTISING POSTING WEBSITE

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Abstract: Advertisement is cost oriented work and sometimes very costlier advertisement also doesn't work out. Now a day's placing the advertisement in website becomes popular and getting more response than any other advertisement which was in practice. The Win-Win Online Advertisement Posting Website is a wonderful advertising concept and it also lies at the heart of Advertising Empire. Though new advertising concepts keep coming up all the time, this one is something that is altogether different. Win-Win Online Advertisement Posting Website presents an earning opportunity to the website owner and as well as for members (Advertisers) by allowing them to post advertisements in this website. These advertisements are either text advertisements or image based advertisements.

Win-win Online Advertisement Posting Website is content-targeted advertising program. This can give you advertising revenue with a minimal investment in time and no additional resources. It delivers relevant text and image advertisement that are precisely targeted to your site and your site content. When people visit our website they are able to see these advertisements. Member's earnings are based on how many sponsored links are displayed on his page and also based on how many times end users visits his web page. The Win-Win Online Advertisement Posting Website system calculates member's credit points based on per-click.

IndexTerms - : **Advertising, Online advertising, Website, Members, End users, Per-click, Revenue, Marketing.**

I. INTRODUCTION

Nowadays modern telecommunication and information technologies are more and more actively implemented in all spheres of social life. This is significantly changing ways in which products and services are produced and marketed. That is why the information industry plays a great role in the global and international marketing development and predetermines its prospective growth. Progress in communications technologies has affected the creation of innovative marketing techniques, and Internet-marketing is one of the most dynamic ones. The number of Internet users has been increasing every year. That emerges new forms of social and economical activities such as virtual enterprises, distant learning etc. Due to this, the Internet users have become the crucial segment of consumers that can influence a steady business development.

Online advertising is likely to be the one of the most important marketing methods regarding the Internet users. The Internet is becoming one of the main means of communication and intercourse between people in business and private life. The intensity of this phenomenon is constantly growing. What is more, the Internet tends to play a significant role as a new channel of international marketing and advertising.

Advertisement is cost oriented work and sometimes very costlier advertisement also doesn't work out. Now a day placing the advertisement in web site becomes popular and getting more response than any other advertisement which was in practice. Suppose a company wants to place an ad in a famous web site they have to pay huge amount to the web site owner, which is not possible for smaller or middle size companies. Keeping all this in mind, this Win-Win Online Advertisement Posting Website System is developed. Here the advertisement companies need not to give the huge amount at one stock, they are paying to the web site ad management for the number of response they get for their ad on click base. Each click will cost very less amount almost less than one rupee. Similarly the web site owner also get amount for each click on the ads which are placed in Win-Win website.

II. RELATED WORK

J. Richards and C. Curran define advertising as "a paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action now or in the future" [3]. J. Strauss and R. Frost [4] offer traditional marketing view with focus on the Internet and other technologies that have had a profound effect on marketing. V. Mozgova [5] defines Internet marketing as "the process of using modern information Internet technologies for conducting market research, product development, pricing, bringing to the consumer and implementing new approaches to sales promotion to maximize customer satisfaction through innovation, organization of material and information exchanges".

Internet advertising can be defined as any form of communication between a consumer and a publisher, that incorporates advertisements by emails, search engine results pages, banners etc. The main goal of the Internet advertising is increasing sales that can be achieved by attracting more consumers with an access to the Internet. Another reason of using such advertising is to

PREDICTIVE ANALYSIS OF SOYBEAN CROP YIELD

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Abstract: Outlier detection in machine learning identifies events or actions that do not meet expectations of existing events in a dataset. These events can lead to various defects, frauds or errors. Outlier detection is an important issue that is researched in several research areas and also in various application domains [1]. Such values in an agriculture dataset may have effects on plant growth. So, outlier removal is an important process. Soybean being one of the most grown crops and even most asked crops in the world is contributing to 25% of world's edible oil. Outliers present in the factors such as seed, leaves, stem, seed size, roots etc. may have hostile effects on plant growth of soybean crop. Hence detection of outliers in soybean crop growth becomes an important to achieve high yields. This allows the farmers to minimize yield losses taking correct actions when necessary. The proposed system uses machine learning techniques such as linear regression and Random Forest to find anomalies and remove them, thus increasing prediction accuracy of plant growth.

Keywords- **Outliers, Soybean, regression, classification**

I. INTRODUCTION

Soybean crop is considered to be one of the most important crops in the world. The importance is not only as oil seed crop and feed for livestock but also is a good source of protein for human diet. The demand for soybean has increased since a decade which has challenged its supply. In order to meet the demand, it is important to increase the crop yield [2]. Exploitation of Soybean crop in India started four decades ago and since then the production and demand for the crop has increased unparallelly. Soybean and their derivatives are most traded commodity and accounts for about 10% of global agriculture trade. The demand for Soybean and its products has rapidly increased since 1990s and has crossed the trade for wheat and other coarse grains [3]. However, various factors may have direct or indirect effect on soybean crop growth rate. These factors include month, precipitation, temperature, hail, germination, seed, seed-size, leaves etc. Any anomalies detected in any of these attributes may delay plant growth. Thus, removal of such anomalies becomes important.

Outliers are extreme values that fall beyond other observations. Outlier detection or anomaly detection is the process of identifying those values that fall beyond the normal distribution. In agriculture, a lot of research is carried out on yield data due to its importance in crop management. Most of the datasets available in the repository may have a minimum of 10% erroneous, missing or not available values [4]. Agriculture dataset like soybean have several errors like outliers and missing values due to some unknown sources which lead to wrong prediction. For example, poor weather condition during a particular season may affect crop growth during that season. A vast number of unsupervised, semi supervised and supervised algorithms are found in the literature for outlier detection. These algorithms further can be classified to classification-based, clustering-based, nearest neighbour based, density based, information theory based, spectral decomposition based, visualization based, depth based and signal processing-based techniques [4]. The proposed model uses data pre-processing technique such as Z-score for outlier detection.

II. RELATED WORK

Varun Chandola [1] provided a structured and comprehensive outline of research on outlier detection. Here existing system is divided into different categories, and to each category key assumptions were applied to distinguish normal and abnormal behaviour. Acu˜na [5] proposed various techniques to detect outliers and also provided experimental results that show improved effectiveness of performance of classifiers on outlier removal. Nedunchezhian [7] presented missing value problems in data mining and evaluated few methods used for missing value imputation. Sánchez [11] compared predictive accuracy of ML and linear regression techniques for crop yield prediction in ten crop datasets. Various algorithms were used for massive crop yield prediction in agricultural planning.

III. BACKGROUND PROBLEM

Though, previous researches have proved that outliers decrease the classifier accuracy, there are no paper suggesting the best algorithm suitable for the soybean dataset to increase the production growth. This research gap has motivated to propose this model.

DISEASE PREDICTION – BREAST CANCER IN WOMEN USING MACHINE LEARNING CLASSIFICATION TECHNIQUES

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Abstract: *Among women worldwide, Breast cancer is one of the most common cancer cases. BC is characterized by the mutation of genes, constant pain, changes in the size, color (redness), skin texture of breasts. The objective is to classify Breast cancer into either Benign or Malignant tumor. Today, Machine Learning (ML) Techniques are being broadly used in the breast cancer classification problem. They provide high classification accuracy. In this paper, we present three different algorithms: Support Vector Machine (SVM), Artificial Neural Networks (ANNs) and Decision Tree for Breast cancer classification. We propose a comparison between the three implementations and evaluate their accuracy.*

Index Terms-*Breast cancer, Decision tree, Support Vector Machine, Artificial Neural Networks, Diagnosis.*

1. INTRODUCTION

Breast Cancer's causes are multifactorial and involves family history, obesity, hormones, radiation therapy and even reproductive factors. Every year, one million women are newly diagnosed with Breast cancer, according to the report of the World Health Organization (WHO) half of them would die, because it's usually late when the doctors detect the cancer. Breast Cancer is caused by typo or mutation in a single cell, which can be shut down by the system or causes a reckless cell division. If the problem is not fixed after few months, masses are formed from cells containing wrong instructions. Malignant tumors expand to the neighboring cells, which can lead to metastatic tumor or reach other parts, whereas benign masses can't expand to other tissues, the expansion is then only limited to benign mass. Many previous studies confirm that detection of breast cancer in early stages significantly increase the chance of survival because it prevents the spreading of malignant cells throughout the entire body. The main contribution of this paper is to review the role of machine learning techniques in early detection of the breast cancer [1].

Artificial Intelligence (AI) can be applied to improve breast cancer detection and diagnosis. Combining AI and Machine Learning (ML) methods enables the prediction and empower accurate decision making. Machine learning is a set of tools utilized for the creation and evaluation of algorithms that facilitate prediction, pattern recognition, and classification. ML is based on four steps: Collecting data, picking the model, training the model, testing the model. The relation between BC and ML is not recent, it had been used for decades to classify tumors and other malignancies, predict sequences of genes responsible of cancer and determine the prognostic. The classification's aim is to put each observation in a category that it belongs to. In this study, we used three machine learning classifiers which are Support Vector Machine(SVM) Classifier, Artificial Neural Network(ANN) and Decision tree Classifier. The purpose is to determine whether a patient has a benign or malignant tumor. In this study, we customize three techniques of machine learning for classification of breast cancer. We use the Wisconsin breast cancer database. The purpose of this article is developing effective machine learning approaches for cancer classification using three classifiers on a data set. The performance of each classifier will be evaluated in terms of accuracy, training process and testing process.

2. BACKGROUND

In this section, we first introduce the breast cancer classification, then different machine learning techniques used in our cancer classification.

VIRTUAL VISITS TO ICU

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Abstract: 21st Century world requires transparency in all the operations and procedures, may it be government or any private sector organizations. Hospitals and health care systems require transparency in the way they work and operate. For example, monitoring what happens inside an ICU or Operation theater requires transparency because of incidents of clinical trials, drug abuse and smuggling of organs reported. In case of a quarantined patient, his/her visitors are prone to be infected and also if the visitors carry foreign bodies, it might affect other patients in the ICU. The system presented here in the paper tries to solve the above problems by providing a simple and cost-effective solution.

IndexTerms - ReactJS, HLS, API, OTP, Streaming Services

I. INTRODUCTION

As much as hospitals are places of hope, of second chances and recovery, they can also be the cause of severe anxiety and financial burden for many. When a loved one is seriously ill or injured, we tend to completely trust a hospital and its doctors, without so much as a shadow of a doubt. Now, we are not saying that someone can take advantage of this situation, but it is crucial for everyone to know about their rights at every place. Keeping this in mind, the Ministry of Health and Family Welfare (MoHFW) released a 'Charter of Patients Rights' [0] that compiles the lawful rights as stated in the Constitution of India. Some of the rights include right to information, right to reports and records, right to informed consent and right to confidentiality, human dignity and privacy.

Admission to the Intensive Care Unit (ICU) is a crisis situation for the patient and his family members. Being in an unfamiliar environment, fear, feeling hopelessness and lack of awareness about the disease are among factors that can cause a crisis in these patients and their family members [1]. Paying attention to the specific needs of these patients and their families, and responsiveness of nurses and doctors in these unites are one of the essential elements of quality of care [2]. Visiting patient as a positive and effective way to help patients and families to adapt better with stress and crisis has been highlighted in many studies [3-5]. The importance of these issues is to such an extent that health policy makers in some countries have offered medical centres the implementation of open and flexible visitation [6]. On the other hand, the physical space restrictions and other obstacles ahead have created much discussion about the management of visiting hour's policies in ICUs [7]. Thus, there is no consensus on a particular model for this issue [8].

Visiting a patient in an ICU also risks the spreading of infection by foreign bodies being carried by visitors into the ICU or vice-versa.

Factors that may affect the transfer of microorganisms from one surface to another and cross-contamination rates are type of organisms, source and destination surfaces, humidity level, and size of inoculum [15, 16]. However, other factors playing a role in contamination and cross-transmission rate in the ICU may include hand hygiene compliance, nurse-staffing levels, frequency/number of colonized or infected patients, ICU structural features (e.g., single-bed or multi-bed ICU rooms) and adoption of antibiotic stewardship programs [17, 18]. The issue of environmental contamination may pose an even greater challenge in the ICU, where patients are critically ill, with several risk factors for nosocomial infections [19], and the highest standard measures for infection prevention cannot always be addressed due to impelling, life-threatening conditions.

IJCSE International Journal of Computer Sciences and Engineering Open Access
Survey Paper Vol.-7, Special Issue-9, April 2019 E-ISSN: 2347-2693

A Smart Campus Communication System

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DOI: https://doi.org/10.26438/ijcse/v7si9.3437 | Available online at: www.ijcseonline.org

Abstract— Notices, posters, digital panels, social media, and emails are the various means of communication within a campus today. Existence of multiple means leads to confusion and the information to be delivered can be missed or forgotten. To address this issue, we aim to create a steadfast workflow that will enable the individuals pertaining to an institution connect with one an-other, share information and participate in various events in a timely and a smart manner

Keywords—Smart Campus, IPFS, email, instant messaging, collaboration, document management, digital signatures

I. INTRODUCTION

Campus communication today takes place in various forms including circulars, notices, posters, digital panels, social media and emails. This cluttered landscape however, hinders the collaborative process of academia where important messages can be lost or forgotten.

By leveraging the fact that most individuals consume content from their personal devices, we can create a dedicated workflow to address the gaps in communication as well as organization of documents, information etc.

An application like this will instantly become a space for students, faculty as well as the administrators of an institution to communicate and learn from each other. With this, we aim to build a college community and encourage lively discussions through a smart campus communication and notice board.

II. RELATED WORK

There are many existing solutions for collaboration and communication. In this section, we discuss these various forms of digital communication, their benefits and drawbacks.

A. Email

Email is based on a store and forward technology. Hence, it is the primary mode of asynchronous communication which lends itself well for business and official purposes. An important feature of email is archival of older messages which ensures a permanent record of messages, threads and attachments.

However, there's no opportunity for synchronous, real-time conversation via e-mail. Due to the technology involved, there will always be a lag between the time a message is sent and the time that it's delivered. One might have to wait a couple of hours or even a day for a response at times. For this reason, e-mail is usually reserved for messages that fall inside a certain window of time sensitivity.

There is also the problem of spam messages in e-mail which is a source of nuisance, malware and junk. Group discussions also tends to be inconvenient compared to its Instant Messaging counterpart as explored in [1]

B. Instant Messaging (IM)

Instant messaging ensures a real-time communication which is very similar to telephonic or face-to-face conversations. However the communication is not organized for an academic setting. Instant messaging does not usually allow users to store, label or organize messages into categories and subjects.

Also, owing to how IM chatrooms are organized, there is only a single thread of conversation at any point of time. This limits the number of topics that can be discussed within a single chatroom.

C. Other Collaboration Solutions

Many collaboration softwares have emerged in the recent times which provide team oriented functionalities such as instant file sharing, organized conversations and integration with other services. Some examples of such software are Slack, Asana, Podio and Basecamp.

Such solutions are focused around project management, built for development teams to collaborate from multiple

DESIGN AND DEVELOPMENT OF EXTERNAL SUPPORT SYSTEM FOR DISABLED ARM

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Abstract : In the work presented in this paper the conceptual design and actuation of one new exoskeleton of the upper limb is presented. The device is designed for application where the motion of the human arm is supported by an external aid which runs with the help of a windshield wiper motor which is in turn controlled by a VNH2NP30 DC dual motor driver and is also capable of gauging the weight by a load cell for which an amplifier HX711 load cell amplifier is used and also connected over the internet through the node MCU ESP32 which is a Wi-Fi module. The motor is set made to rotate with a 12V battery as its source of power input. All the functionalities are controlled and programmed by Arduino UNO microcontroller. By programming the Arduino UNO microcontroller we can achieve the direction of the exoarm rotation and also the speed and torque of the movement of the exoarm.

IndexTerms - Exoskeleton, wiper motor, VNH2NP30 DC dual motor driver, node MCU ESP32, Arduino UNO, exoarm, load cell, HX711.

I. INTRODUCTION

Exoskeleton is an externally wearable robot with joints and limbs corresponding to those in the human body. Exoskeleton transmits torques to human joints by means of actuators allocated in its mechanical structure. Exoskeletons are used for four basic functions by means of different control algorithms. The design for these type of model play and important and a vital role as to keeping into consideration the stress and strain that will be imposed on the human body due to the load that is been put up on the human body. As the motion of the forearm plays an important role we should make sure that there is no higher stress or strain on the joint of the forearm. As IoT is having a huge impact on the current society collecting the data and updating to the internet can help in the maintenance and also upgradation based on the users experience and monitoring those.[1] The objective of the work presented in this paper is to create a new concept project of a soft upper-limb force-feedback exoskeleton. The device to be used is an exoskeleton with a wearable structure and anthropomorphic workspace that can cover the full range of motion of a human arm.[2] Device should enable an application of force within a wide range of human limb and reproduction of natural compliance.[3] The device to be designed can be used for application where both motion tracking and force feedback are required

II. EASE OF USE

Exoskeleton arm.

An exoarm is abbreviation used for exoskeleton arm ,so the main components to the design of an exoarm are a car windshield wiper motor, a VNH2NP30 DC dual motor driver which is used to control the wiper motor, a 12V Battery for power supply and an Arduino UNO microcontroller which is used to control the whole system combined together, a load cell which is used to gauge the weight of the object that is to be lifted and an HX711 amplifier to amplify the load cell and at last a node MCU ESP32 Wi-Fi module to fetch and update the data from the exoarm to the internet using the concept of IoT.

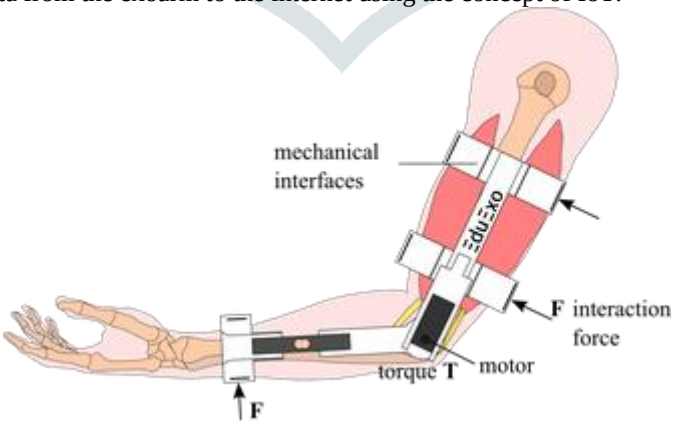

Figure1: Exoskeleton arm design

AUTOMOBILE NUMBER PLATE RECOGNIZATION SYSTEM USING IMAGE PROCESSING

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Abstract:-Automobile number plate recognition is an image processing technology which uses number plate to identify the automobile. The objective is to design an efficient authorized automobile identification system by using the automobile number plate. The system is implemented on the entrance for the toll gate payment system, security control of a highly restricted area like military zones or area around top government offices, school, college or society parking. The developed system first detects the automobile from the video and then makes frame from the video part by part. Automobile number plate region is extracted using the image segmentation in an frame. Tesseract Optical character recognition (OCR) technique is used for the character recognition. The resulting data is then used to compare with the records on a database so as to come up with the specific information like the vehicle owner, place of registration, address, etc. The system is implemented and it performance is tested on video. It is observed from the experiment that the developed system successfully detects and recognize the automobile number plate from video.

Keyword:- Image Processing ,Tesseract ,OCR ;

I.INTRODUCTION:

India is a 2nd most populated country in the world and also a developing country, and increasing population means increase in number of vehicles and managing them is a humongous task. Often this organized chaos leads to traffic jams and traffic rule violations and also this problem is seen while passing through toll gates. The idea is to completely automate the process of recognizing vehicle using existing cameras on highways, toll gates etc. Plate recognition range, where the cameras are able to capture the vehicles plates with sufficient resolution, starts from 20 to more than 50 meters away from the camera location. What we are doing is to completely automate the toll and parking fee payment systems using vehicle recognition system which will also help in monitoring fake number plates thus providing security, efficiency and at the same time saving cost. Since, number plate is the only trustworthy identity of a vehicle in Intelligent Transportation Systems (ITS) and correct vehicle identification depends highly on the accuracy of number plate recognition systems.

II. LITERATURE SURVEY

Title 1: SYSTEM FOR COLLISION PREDICTION AND TRAFFIC VIOLATION DETECTION

Abstract: The invention refers to a system for monitoring, analysing and reporting incidences of traffic violations at a predetermined area in real -time, prospectively or retrospectively. Specifically, the invention refers to a system and method of monitoring, analysing, predicting and reporting or Warning the incidence of a pastor imminent traffic violation by acquiring a moving object Within a predetermined boundary, assigning a path to the moving object and based on a plurality of thresholds, determining the likelihood of a traffic violation type and occurrence.

Title 2: A hybrid License Plate Extraction Method Based On Edge Statistics and Morphology

Abstract: A hybrid license plate extraction algorithm based on the edge statistics and morphology for monitoring the highway ticketing systems. The method can improve the location rate only by the edge statistics. The proposed approach can be divided into four sections, which are, vertical edge detection, edge statistical analysis, hierarchical-based license plate location, and morphology-based license plate extraction. The algorithm can quickly and correctly detect the region of vehicle license plates. Under the experiment databases, which were taken from real scene, 9786 from 9825 images are successfully detected. The average accuracy of locating vehicle license plate is 99.6%.

Title 3: Combining Hough Transform and Contour Algorithm for detecting Vehicles License-Plates

Abstract: Vehicle license plate (VLP) recognition is an interesting problem that has attracted many computer vision research groups. One of the most important and difficult task of this problem is VLP detecting. It is not only used in Precognition systems but also useful to many traffic management systems. Our method is used for the VLP recognition system that deals with Vietnamese VLPsand it can also be applied to other types of VLPs with minor changes. There are various approaches to this problem, such as texture-based, morphology-based and boundaryline based. In this paper, we present the boundary line-based method that optimizes speed and accuracy by combining the Hough transform and Contour algorithm. The enhancement of applying the Hough transform to contour images is that the much improved speed of the algorithm. In addition, the algorithm can be used on VLP images that have been taken from various distances and have inclined angles between ±300 from the camera. Especially, it can detect plates in images has more than one VLP. The algorithm was evaluated in two image sets with accuracy of about 99%.

ANDROID TRACKING APPLICATION USING GSM/GPS

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*Abstract:*GPS/GSM Tracker is a mobile application. The main aim of this Android project is to assist users in finding their relevant location according to their source and destination. By using this application, the user can find out the location of the person within a campus or premise. The tracking is done within a specified range and is easy to use.

***IndexTerms*– GPS, GSM, Android, Tracking.**

INTRODUCTION

his project is about the design and implementation of device tracking system using (GPS, GSM). It mprises of integration between GPS technology and a GSM module. This combination of technology ill produce a tracking system. This project can be divided into two main parts software and hardware velopment. GSM module is used for tracking and GPS is used for navigation.
ie objective of this project i.e. an Android application is to provide location tracking functionality r Android device. This project supports Android OS only and makes communication with the phone rough GPS. The scope of this project includes the security of the architecture as well as the accuracy tracking unit.

ITERATURE SURVEY

- IJETT journal paper for pilgrim safety and tracking: Disadvantage: Privacy problems for mobile users.

lution: We allow tracking of people only if they are registered users of our app. So people who are not registered cannot ck others and cannot be tracked. [2]

2017 12th IEEE Conference on Industrial electronics and applications (ICIEA)
isadvantage: The user has to track his/her phone by sending a secret code to their mobile phone number. Then e location of the phone is sent to them.
lution: We can track our phones within the given range using our app. We do not require any secret codes to be sent he device to track it but we are using color change system when the other person accepts to track him/her in our app lf.[3]

NDROID APPLICATION

- *Login and registration of the application*

  The user needs to register in the application and then continued with the login page to succeed with the login page.

Only if registered and logged in the user can track, which is the security measure for our application.

- Tracking

  The android application provides location tracking functionality. This project works for android OS only and includes security of architecture as well as accuracy of tracking unit. The user should grant permission to allow other users to track him/her. This is done by "allow to track" option for every registered user. This is reflected as a color change from red to green in the other person's device. Check boxes are provided for every registered user to accept that the other person can track him/her. The registered users list will be in reject state as default and on accept the color change will be seen in the other person's phone.

- Purpose:Real-time tracking

The tracking application mainly aims at tracking people using their phone numbers based on GPS and GSM technology.

IOT BASED DIGITAL WATER SUPPLY SYSTEM

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Abstract: Water theft is illegal tapping of water supply systems. Together with losses from water leaks in piping, water theft is one of the major factors contributing to non-revenue water in urban areas. In this paper, a method is proposed for remote water monitoring and preventing water theft by ensuring the flow rate is normal. The consumer/user is provided with a web application with options to check the water level, request for more water, and post-paid bill payment based on the consumption of water. The flow rate is recorded using a water flow sensor and the data is transmitted to a remote monitoring station. A solenoid valve is used to turn on/off by the central processing unit Raspberry Pi to stop the water supply when it exceeds a pre-defined limit. The admin monitors the water level at the user end, send notifications to the users, and detect the leakage of water using a moisture sensor. The method employs Internet of Things for wireless communication.

Index Terms **– Water Theft, Solenoid Valve, Raspberry Pi, Internet of Things**

I. INTRODUCTION

Water is one of the most vital resources for all life on Earth. It is used in household, agriculture, industry and recreational purposes. Economic growth has led to an increase in water demand by enterprises. Excessive water drawing by connecting motor-pump sets to water lines is described as water theft. This is one of the major reasons contributing to non-revenue water in urban areas. The safe monitoring of water in the enterprises can prevent water theft and water leakage. In recent years, many systems have been proposed for the prevention of water theft and water leakage.

In this methodology, it is proposed to develop a remote water monitoring and water theft prevention system by recording the water flow rate at the user/consumer end. The user is provided with a web application where the user can login to his/her account using the required username and password credentials. Upon logging in to the web application, the consumer can check the water level in the tank using an Ultrasonic Sensor placed inside the tank. The user can also request for more water. The requested quantity of water will flow into the user's tank if it is not already full. A solenoid valve is used to turn on/off by the central processing unit Raspberry Pi to stop the water supply when it exceeds a pre-defined limit. A bill will be generated based on the amount of water consumed by the user. The admin can also login to the web application using the required username and password credentials. The admin monitors the water level at the user end, send notifications to the users, and detect the leakage of water using a moisture sensor. The data from the sensors are communicated wirelessly to a remote monitoring station. The method employs Internet of Things for wireless communication.

II. LITERATURE SURVEY

The recently developed solutions for the prevention of water theft and/or water leakage include Anti-theft control system, embedded based remote water monitoring and theft detection and prevention system, water environment monitoring system based on wireless networks.

[1] Anti-theft control system for drinking water supply. It makes use of an embedded based remote water monitoring system by recording the flow rates at the consumer/user end. Its main objective is to control drinking water theft in domestic areas.

[2] Embedded based remote water monitoring and theft detection and prevention system. The objective of this system is to deliver wholesome water to the consumer at a particular area and in adequate quantity and to achieve continuity and maximum coverage at an affordable cost.

[3] Water environment monitoring system based on wireless networks. It proposes a system which is suitable for complex and large scale environment monitoring, such as for lakes, swamps, rivers, and shallow or deep ground waters.

Decentralized File Sharing System Using- IPFS

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ABSTRACT

Storing and Retrieving large amounts of data, especially media on centralized servers leads to a huge expense in terms of storage and maintenance. High traffic on these centralized systems can cause bottlenecks and crashes. The usage of the proposed networking protocol namely, the IPFS which is "The Inter-Planetary File System" is a peer-to-peer distributed file system which connects all computing devices with same system of files. The conclusion is that, in order to overcome the centralization in current working systems, the proposed IPFS model achieves it since it has no single point of failure, and nodes do not need to trust each other.

1. INTRODUCTION

A Decentralized file sharing system. The decentralized sharing and storage network is built using the IPFS infrastructure. Using this architecture, chunks of the media file can be stored in multiple nodes on the network. When a user requests for a certain media file, be it text , an image or a video, all these chunks of data can be retrieved from these nodes in parallel thereby reducing the retrival time drastically. A progressive Web App (PWA) is built that enables a cross platform interface for uploading and listing the user's files. In simple terms, it's a universal decentralized cloud files storage and sharing platform.

The working of IPFS is a main stream, that enables the model we built to function the way a decentralized network should. Al-though there have been many distributed file system in use and, Among the academic attempts, AFS [6] has succeeded widely and still in use today and to name a few, However these applications were not designed as infrastructure to be built upon and no general file-system has emerged that offers global low-latency, and decentralized distribution. Along with the cross platform Progressive Web App (PWA), we have also built a cross platform mobile app, which serves the features of efficient uploading and downloading of data between any number of nodes connected on the network with an add on feature of firebase user Authentication which provides a sense of security to the mobile app, which was seen lacking in the Progressive Web App (PWA).

1.1. OBJECTIVE

The main objective of our proposed system is to provide the end user with an decentralized file sharing system that also acts as a storage platform, which is achieved by using the IPFS as an infrastructure for the model to work.

1.2. PROPOSED SYSTEM

The model being developed enables the end user with the flexibility of using the features of IPFS both on desktop and mobile, and bringing through a file sharing system where-in nodes connected to the network can readily access and share the data among themselves forming a swarm of interconnected networks for communication.

Asian Journal of Convergence in Technology Volume V, Issue I
ISSN No.:2350-1146, I.F-5.11

A Survey on Motion Detection by Image Stitching techniques

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Abstract: In today's world, an image stitching/homogenizing is considered as a dynamic research area in graphics and computer vision. Image homogenizing literature shows that it is a challenging task for panoramic images. Panorama Image stitching is the process of merging two or more images of the same scene into one high resolution seamless image called as panoramic image. Tracking motion and moving object identification is the basic source to extract important information regarding moving objects from anomalous sequences in continuous image based surveillance systems. This paper presents a survey study about the process of panoramic image stitching(PIS) process and the main components of PIS. Further, a framework of a complete panorama image stitching system to detect the moving objects based on these approaches will be introduced.

Keywords- Image stitching; Panorama; object detection; Surveillance; seamless image

I. INTRODUCTION

Image/video stitching or photo homogenizing is the process of combining multiple photographic images with overlapping fields of view to produce high- resolution image/video or segmented panorama to track and detect the moving objects. Insurgent incidents like terrorist attacks or several others, abandoned objects were used to threaten the harmony of community and sovereignty in India. Many damages are caused due to such unusual incidents to public/private properties causing financial losses as well as pulled people in emotional trauma. One solution is to use public surveillance camera to detect anomalous events and trigger alarms to vigilance and authority. Most approaches to image stitching nearly require exact overlap between the identical exposures and the images to produce seamless results performed commonly through the use of computer software which is known as mosaicing. Algorithms for aligning images and stitching them into seamless photo-mosaics are most widely used in computer vision. Image stitching algorithms create the high resolution photo-mosaics used to detect today's digital maps and satellite photos. They also come bundled with most digital cameras currently being sold, and can be used to create beautiful ultra wide-view panoramas. The aim of this project is to create software that merge images which have similar features and create a panoramic image for moving object detection using surveillance cameras. Recognition/identification of the object and its motion/activities with least amount of processing is required which is compromised in research area whenever high accuracy is met.

II. LITERATURE SURVEY

Over the period of last many years, several approaches have been proposed for image stitching and motion detection. Image stitching is a process in which several images are stitched together after establishing geometric relationship between them. The geometric relationships are coordinate transformations that relates usually the various coordinate systems. By applying these transformations via a merging operation and by combining the overlapping of the images it is possible to create a noteworthy form of mosaic.

The two main expectations from the image homogenizing process are that the Stitched image should be nearly as close as possible to input images and in Stitched images the seams should be invisible. New algorithms are coming to make the work clear and less tedious for the programmers to work upon. In the era of 3-D imaging and videos, image/video stitching is an inevitable task. Hence, there is a large scope for research in this field.

The authors in paper[1], presented a real-time video stitching system which can stitch videos acquired from multiple moving cameras, so that cameras could move freely to stitch the videos. They proposed an algorithm which estimates refined homography in both spatial and temporal domains. That is, their work initially detects feature points by SURF and then by K-Nearest Neighbors (KNN) method, they accomplished feature matching. Further, subsequently they applied RANSAC to estimate homography transformation from the extracted feature pairs in the spatial domain. In experimental setup, they stitched three videos acquired from three cameras placed on a linear

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 06 Issue: 02 | Feb 2019 www.irjet.net p-ISSN: 2395-0072

Review on Human Action Detection in Stored Videos using Support Vector Machine

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Abstract - It is useful to detect human activities or events, counting people in crowd, identifying the vehicle number and many more. Analyzing a video for activity detection is tedious as there are many factors which contribute to the performance of the detection system. Major issue is the quality of the video. Today advances in technology has made video recording possible from a tiny smart phone to satellite captures.

The major applications of Human Activity Detection vary from Content-based Video Analytics, Robotics, Human-Computer Interaction, Human fall detection, Ambient Intelligence, Visual Surveillance, and Video Indexing etc. This paper collectively summarizes and deciphers the various methodologies, challenges and issues of Human Activity Detection systems. Variants of Human Activity Detection systems such as Human Object Interactions and Human-Human Interactions are also explored.

***Key Words*: Support Vector Machine (SVM), Feature Detector, Classification, Feature descriptor**

1.INTRODUCTION

Video analytics is the analysis process in large volumes of real time or stored videos. It is useful to detect human activities or events, counting people in crowd, identifying the vehicle number and many more. Analyzing a video for activity detection is tedious as there are many factors which contribute to the performance of the detection system. Major issue is the quality of the video. Today advances in technology has made video recording possible from a tiny smart phone to satellite captures. Taking into consideration the quality of video as a major concern in this paper emphasis is on improving the quality of video and to detected the activity of human. The activity considered is limited to walking, jogging and running. Appropriate feature extraction and selection processes will be inculcated to implement the Support Vector Machine to detected the activity. It is suitable for creating set of hyper planes in an n dimensional space dividing the samples in to the regions with maximum margin. Video formats to be considered in the paper would be .avi, .mp4 and .mpg. The major Steps involved in activity detection are as follows.

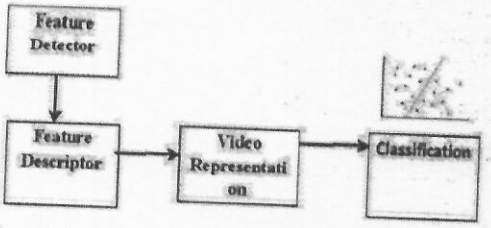

Fig -1 : Steps involved in activity detection

1. Feature Detector - Detect interest points(actions) in video .
2. Feature Descriptor - Encodes information in areas of interest points(SIFT-Scale Invariant Feature Transform)
3. Video Representation – Video format which defines sequence, structure and content of frame
4. Classification – Uses large number of training samples to train the classifier

Numerous attempts have been made in this field to automatize video surveillance but each and every approaches has its own pros and cons. Table 1 shows the spectrum of such approaches.On the basis of prior knowledge and human involvement in the learning process, the research in human activity detection can be categorized as supervised, unsupervised and semi supervised.

2.1 Supervised Learning

In this type of learning, a number of models of normal or abnormal behavior are built based on the labeled training samples. Video samples which do not fit any model are classified as abnormal. But this approach is limited to only events that are well defined and would require sufficient training data. However, real world video samples would mostly contain events that are not well defined and such events are rare and hence sufficient training samples are not available.

EXPERIENTIAL LEARNING OF NETWORKING TECHNOLOGIES

Understanding TCP Flow Control

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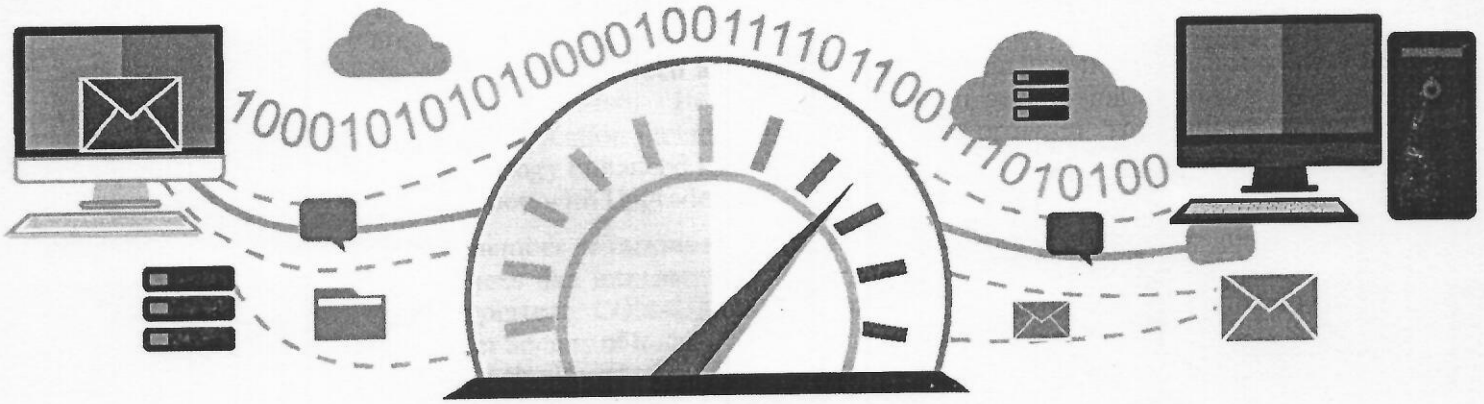
https://doi.org/10.34048/2019.2.F3



EXPERIENTIAL LEARNING OF NETWORKING TECHNOLOGIES

UNDERSTANDING TCP STATES – PART 2

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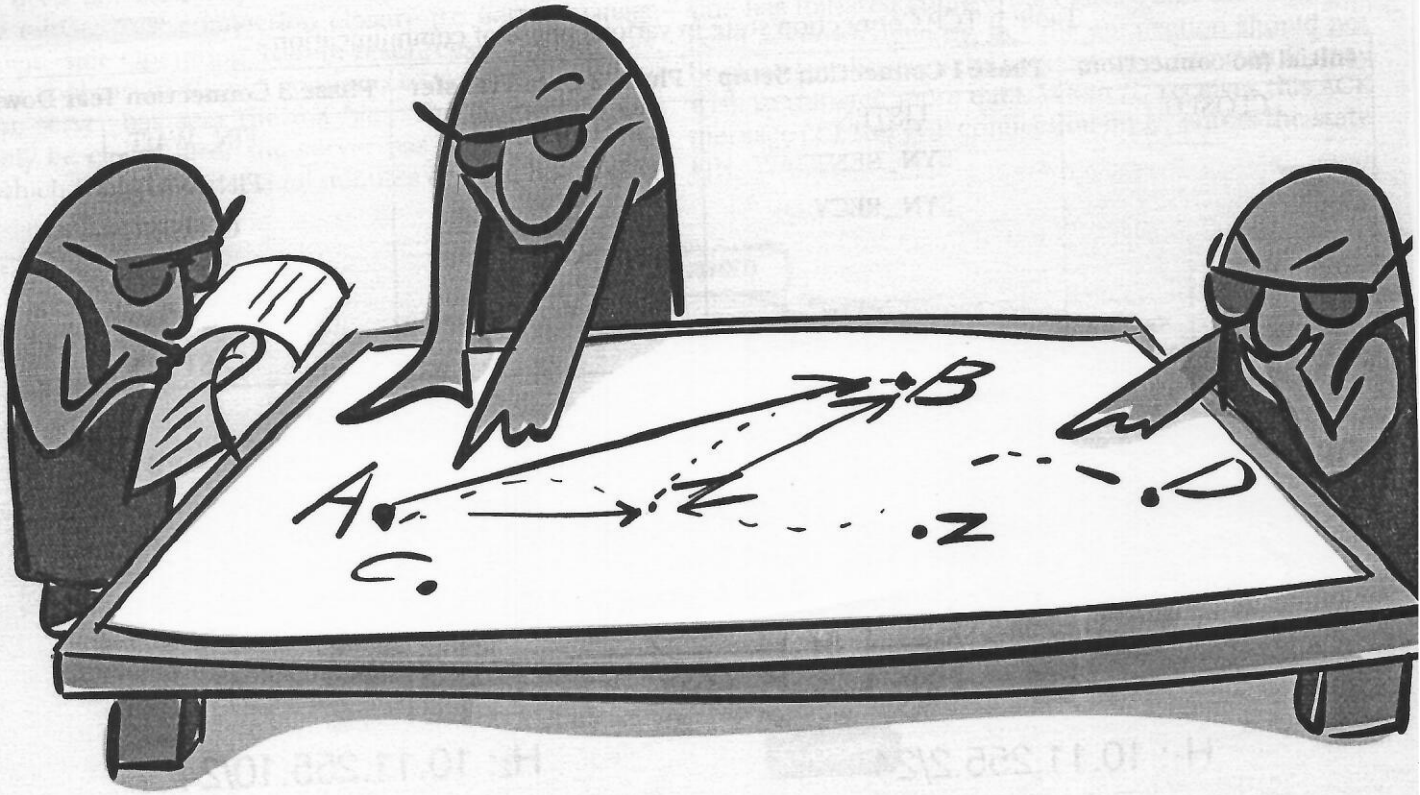

Evidence Collection from Web Browsers using Data Mining Technique

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Abstract—*Increase in internet technology cyber-crime are being increased day by day and committed by attackers. Data recovery methods and practical frameworks are used for investigation. In cyber-crime huge amount log date is been collected, transaction of data leads to storage of large amount of data and analyze them.[1] It is difficult for Forensic investigators to find out the clue and analyze the data. In log files large amount data is generated in every of action so it is difficult for forensic investigators to find out clue and analyzing the data. This paper focuses on collecting the data from cyber system and web browsers, forensic analysis and remote system forensic which is to be used as evidence for detecting the suspect during the investigation[2]. Decision tree is one of the technique which can help for forensic investigation purpose so system can adopt a way by which using decision tree for generating, storing and analyzing the data retrieved from log files. This paper focuses on how decision tree can allow system to quickly, easily and inexpensively analysis of log data available in various file formats for file forensic analysis[3].*

Keywords—Data Collection; Log Data Collection; Digital Forensic Tool; Clustering

I. INTRODUCTION

Digital forensics is the branch of forensic science recovery and investigation for digital devices often done in computer crime. Digital forensic is a synonym for computer forensics and expanded to cover investigation done for storing the digital data. Digital forensics have a variety of applications. This is used to support hypothesis before criminal courts. In the form of technical investigation aspect is divided into several branches related with the digital device involved .The different types of forensic science are network forensic, forensic data analytics and mobile device forensics .Identification of evidence of a crime digital forensics has been used to attribute evidence to suspects. Investigation are much broader and scope than any other areas of forensic analysis involving complex times on hypothesis. The next few years computer crimes are increased and laws are passed to deal the issues of copyright privacy and child pornography.

Ex. Cyber-crime, cyber stocking , online predictors[5].

Recovery of data from digital devices is nothing but digital devices, Different Tools and applications are used for digital forensic but there are certain limitations .Technical challenges implement small scale of data mining in which decision tree can support for efficient classification of data[6].

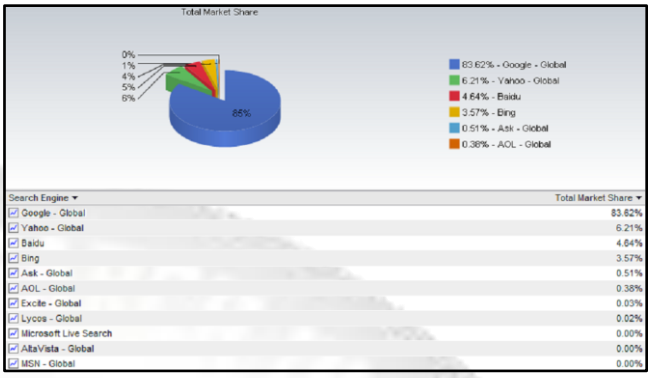

Fig.1: Global market share of search engines

Decision Tree (DT) technique is one among which can help for file forensic investigation purpose. Every system can use Decision Tree technique for generating, storing and analyzing large amount of data retrieved from log files which pose as evidence in file forensic analysis. This paper focuses on how Decision Tree can allow system to quickly, easily and inexpensively analysis of log data available in various file formats for file forensic analysis[4]. General methodology is being used for digital forensic analysis as follows

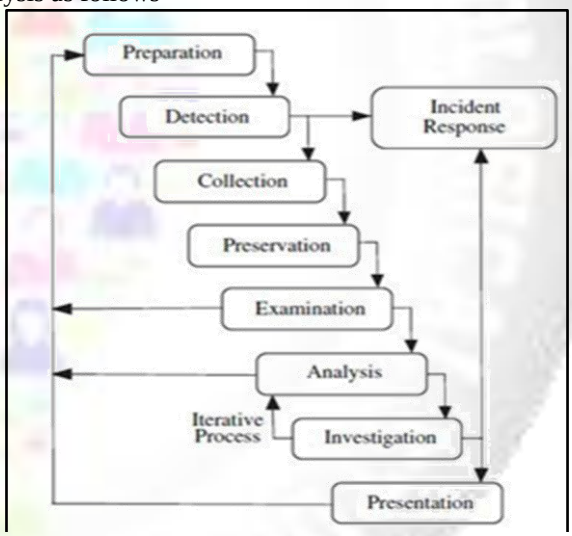

Fig.2: General methodology for digital forensic analysis

Preparation: In the preparation phase, the data is obtained and stored for backup in storage devices. A hash of all the trace data is preserved. A copy of the data will be analyzed and the original network traffic data which is not alter by hacker.

Detection: Once log file gathered, the next step is to recognize the presence of nature of an attack. If there is any suspicious activity, then type of an attack can be detected

Generation: generation of huge amount of data which requires amount of storage memory and the system must be able to handle different log data formats appropriately.

Examination: Once data get collected from different nodes it will get integrate into large dataset. This

International Journal of Network Security, Vol.21, No.1, PP.122-129, Jan. 2019 (DOI: 10.6633/IJNS.201901.21(1).15)

NPKG: Novel Pairwise Key Generation for Resisting Key-based Threats in Wireless Sensor Network

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Abstract

Securing the communication system in Wireless Sensor Network (WSN) is still an open-end problem in spite of series of dedicated research work for more than a decade. This paper presents a Novel Pairwise Key Generation (NPKG) technique intended for resisting replication attacks as well as other forms of attacks that are related to secret keys in WSN. The proposed system also harness the potential role of a base station and trusted authority which otherwise represents a mock module in existing studies. Designed using an analytical method, the proposed study particularly emphasize on achieving a balance between minimal resource utilization and ultimate security feature of both forward and backward secrecy for further strengthening privacy, confidentiality, and non-repudiation in WSN. The algorithm is exclusively designed to handle the possible security issues in a dynamic network of WSN for its upcoming applications. The study outcome shows better algorithm performance in contrast to the existing system.

Keywords: Key Generation; Pairwise Key Predistribution; Security; Wireless Sensor Network

1 Introduction

The study of Wireless Sensor Network (WSN) has been consistently a major point of focus among the research community of wireless network. The usage of WSN applications has undergone revolutionary changes at present than what it was five years back [17, 19]. At present, WSN is sought as one of the contributory technology in Internet-of-Things (IoT), which is more about machine-to-machine communication [10, 23]. The conventional research-based study of WSN was in the direction of solving energy problems, routing problem, traffic management problem, security problem etc [16, 26, 27] and there are more than thousands of research papers that have discussed the solution to such problems. The present paper is focused on discussing security problems in WSN, which is an unsolved problem till date. Although there has been series of potential research on strengthening the security features of WSN [31], still none of the security protocols are found to be resistive to potential key-based threats in WSN.

Basically, the source reason for all security problems in WSN is the miniature form of a sensor node from hardware structure viewpoint. Basically, such sensor nodes are so small that they cannot be embedded with lots of complex cryptographic algorithms that run on the wired network. This is because execution of such complex cryptographic algorithm calls for heavy usage of resources that a sensor node cannot afford. It is also known that a sensor node operates on a battery, while every routing operation (where a sensor node is forwarding data packet or just in a listening mode) is associated with significant drainage of energy. Hence, usage of complex cryptographic-based operation is kind of forbidden in WSN [20, 21].

Majority of the conventional applications of WSN considers that all the nodes are static. On the contrary, the sensory application in IoT is highly mobile and uses dynamic topology. Although IoT based applications claim to support better communication performance, there is no scheme to claim for ultimate secure communication when sensors are integrated with cloud applications that are already exposed to trillions of malicious programs. An existing security-based technique that often uses symmetric key-based cryptographic approach [24] are found most suitable to work on the low-resource node but suffers from extreme overheads and higher dependencies to-

Flight Search Techniques in Web Development

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Abstract**—***The modern airline search system is inclusive set of similar products to present a system that provides money to a wide variety of airline management tasks and provides services to the customers from the time of initial reservation to the completion of reservation. Travelling by air is one of the most common modes of travel. Now-a-days airline companies provide a wide range of timings for the customers who wish to travel by air. Increase in trade and investment leads to greater moment of people, goods, capital. Due to this the frequency in travel increases there is a need to provide an intelligent application that is capable to meet the needs of travel. The objective of the project is to create an Airline search system where travelers can search for availability information of their desired flights and system returns the result in more efficient manner than the existing system.*

Keywords—Web Scrapping, Elastic Search, Cluster, Index, Shards

I. INTRODUCTION

The airlines have managed to reduce the distance between the places which are located miles apart to merely in hours and minutes. There are many airlines that covers thousands of miles every day and therefore travel has become an acceptable part of one's routine. To ensure that we get to where we need on time travellers have to search flights in advance. A majority of airlines have online based search system as most of the travellers search flights to facilitate their travelling process by booking their flights online. The search results are returned by querying the database. For improving the efficiency elastic search is implemented. [1]

Web Scraping is also called as data scrapping which is utilized to draw out data from websites. This is a stack that may approach WWW(WorldWideWeb) using HTTP(HyperTextTransferProtocol) or along with a browser.

The content may be parsed, searched and the data is transferred to a spreadsheet. This is also utilized for applications such as contact scraping, web indexing, web mining etc.…Web pages are designed using markup languages such as HTML and XHTML and it comprises of useful information. Most of the web pages are built for end users but not for automated use. Hence, web scraping is an API (Application Programming Interface) which is utilized to draw out the information from a website. Amazon AWS and Google supply web scraping instruments and the information available for public for free of cost. [2]

Elastic search is a near real time search platform which means to say that there is only some small amount of time latency from the time you index a document until it becomes available for searching.

Cluster is a collection of one or more nodes (one or more servers), the name of a cluster should be unique otherwise we might enter accessing wrong clusters. A node is a single server which is a part of cluster. Each node must be provided with a unique name. By default, the naming is provided using UUID (universally unique identifier). All nodes by default belong to a cluster called elastic search. A cluster can have several nodes.

Index is a collection of documents that have similar characteristics. Index is identified by a name. A cluster can have many indexes. Each index can have only one type. An index can store large amount of data that exceeds storage space or reduces the time to search. To solve this problem, we can divide an index into multiple pieces called shards. When we create an index, we can tell the number of shards we want. If the shard or index goes offline or disappears to this end, elastic search allows to make one or more copies of index shards into what are called replica shards. Document is an information of a single person "It is like a single row in a database table". The document is expressed in json.

II. RELATED WORK

Searching techniques including Elastic search have been studied by many researches. Although there are many researches conducted in past for analyzing the real time search techniques, these techniques play an important role for new trends in Travel and Tourism industry which in turn helps for all organizations associated with this field. This survey also explores challenges and future issues of search techniques.

Alexis Michaelides et.al [3], This paper proposes evolution of modern software agent technology which has given rise to an extensive overuse of the term agent. It also provides the reader with some thoughts, ideas and questions on the general subject of agent theory and intelligent systems, solely as a starting point for further research.

Courtney McTavish et.al [4], This paper describes a system which uses an agent to perform search, booking activities which can improve the speed of the search and reduces the cost and this also proposes an agent that travel from hotel to hotel by calculating details on the list of available facilities, price and customer experience.

Bogdanwalek et.al [5], This paper proposes fuzzy approach and expert system for hotel booking. The proposed approach is based on evaluating hotel services for different kind of hotel guest. The output of the expert system is a proposal of suitable hotel services for hotel guest during the process of hotel booking.

Landro Castro et.al [6], This paper presents a paradigm of system in the areas of San Juan, Argentina, to recommend tourist package based on priorities and interest of every user. AI (Artificial Intelligence) methods are utilised to separate and customize the information.

Marcin Bajer et.al [7], This paper is used to process Iot(Internet Of Things) data through the implementation of elastic search. The tools were designed to handle large number of log data, it can be applied to store, search and visualize other type of information -which includes IoT data. Different kinds of preferred devices employed in the building of ABB Corporate Research in Krakow have been

Study on the Factors that Increase the Lead Times in Small and Medium Level Enterprises in IT Sector

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Abstract--- Lead time refers to the latency between the initiation and execution of a process. Longer lead time has a direct impact on project delivery time and the project cost. This paper describes the problem which the Small and Medium Level enterprises (SMEs) face due to an increase in the lead time. The paper attempts to identify the factors contributing to increased lead time in three stages. In the first stage, a survey was conducted at SMEs, PSUs, Private and Public Sector IT firms to understand the factors causing turbulence in the business environment. In the second stage, a case study was carried out to find out the challenges faced by a SMEs in Bangalore. The case study brought forward the need to adapt agile development with an objective to develop new features with a shorter lead time and also unfolded several 'waste' factors. Finally to understand these 'non-value added' factors (which are major contributors in project delay) and also the cause and effect behind the longer lead time, Value Stream Mapping (VSM) and Failure Mode Effective Analysis (FMEA) was performed to carry out a statistical analysis of the given problem.

Keywords--- SMEs, FMEA, VSM, Agile Development.

I. Introduction

The term "Lead time" [1] refers to the time gap between the initiations of the process where the customer places the order to the order being delivered to the customer. Ideally the lead time refers to the total time required for completing the process ordering the product to shipping them to the customer. The issue involved here is the time, the time required to deliver the product will vary due to various factors like lack of skilled workers, lack of software tools, insufficient of funds, lack of understanding of the problem from the client's needs. Lead time has various advantages:

1. Bringing flexibility especially during rapid changes in the market.
2. In order to beat your competitors by promptly delivering the goods in more efficient way.
3. To avoid problem of losing stocks leading to loss in sales and customers.
4. Effectively meeting the deadlines and maintaining consistency.

A. Problems with Longer Lead Time

It is not for every organization as it has various roadblocks and constraints as a results various projects will be in the pipe line. The following are various roadblocks generating longer lead time.

1) Handoffs – There is always cultural break down between the development and operational department of the product development teams. The requirement flows in the forms of batches and queues during the handoff process. There is an information flow between various departments. Now if there is delay in sending of the information from one team to another organization then there is potential of more batches of the information in the pipeline. As a result there will be more ambiguity between the teams and result in the high costs and failed releases.

2) Approval Processes – Insufficient data sharing between the various departments leads to more complexity especially in the larger organization where without the data sharing the approval process is near to impossible as a results it frustrate the delivery team. Also the quality of the product will also be reduced.

ISSN 1943-023X
Received: 28 Feb 2019/Accepted: 21 Mar 2019

EXPERIENTIAL LEARNING OF NETWORKING TECHNOLOGIES

Understanding TCP States – Part 1

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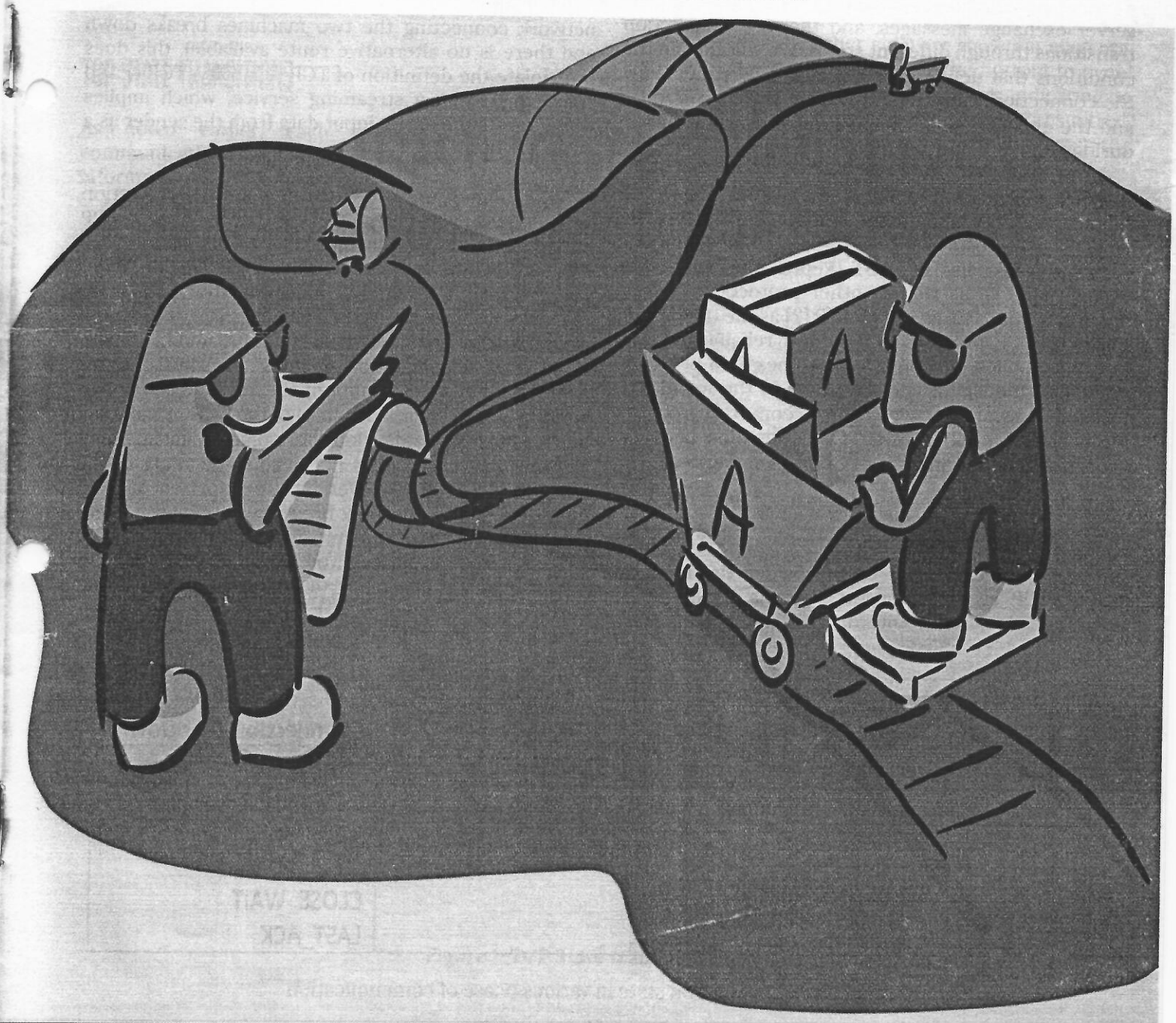

Journal of Web Engineering, Vol. 17, No.6 (2018) 3042-3059

Cluster Based Deep Neural Network (C-DNN) Approach to Detect Heart Disease

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Abstract

The term 'heart disease' refers to circumstances that block blood vessels and may lead to a heart attack, chest pain or stroke. The heart conditions will the affect heart's muscle, valves or rhythm leading to heart diseases and bypass surgery or coronary intervention is used for solving these issues. In this research work, an effective Cluster based Deep Neural Network approach is proposed to detect the angiographic heart disease (i.e. to detect the patients with ≥ 50% diameter reduction of a major coronary artery). The data set is grouped using K-Means clustering algorithm and then the heart disease is predicted using cluster based deep learning approach. The proposed method is compared with various parameters for classifier algorithms like DNN, SVM-Linear, SVM- polynomial, KNN, ELM, ELM- cluster and to prove the system effectiveness in terms of accuracy.

Keywords: ***Heart Disease, Deep Neural Network, K- Means clustering, Prediction, Data Cluster, CNN.***

1. INTRODUCTION

Heart disease is the major disease globally, that the census shows many people die annually with this and research works have been carried out so far to find the risk factors that lead to heart disease. To provide a promising solution by identifying heart risk factors is still a research challenge. The main risk factors identified in developing heart diseases are the high blood cholesterol in patients with hypertension and diabetes. Other risk factors in heart disease is because of life style factors such as eating, drinking alcohol, smoking, obesity etc. [1,2].

A set of methods that accordingly discover patterns in data is determined by Machine Learning (ML), and can be applied to uncover patterns to determine or enable decision making

International Journal of Healthcare Information Systems and Informatics
Volume 13 • Issue 4 • October-December 2018

Analysis of Machine Learning Algorithms in Health Care to Predict Heart Disease

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ABSTRACT

This article describes how healthcare organizations is growing increasingly and are the potential beneficiary users of the data that is generated and gathered. From hospitals to clinics, data and analytics can be a very powerful tool that can improve patient care and satisfaction with efficiency. In developing countries, cardiovascular diseases have a huge impact on increasing death rates and are expected by the end of 2020 in spite of the best clinical practices. The current Machine Learning (ml) algorithms are adapted to estimate the heart disease risks in middle aged patients. Hence, to predict the heart diseases a detailed analysis is made in this research work by taking into account the angiographic heart disease status (i.e. ≥ 50% diameter narrowing). Deep Neural Network (DNN), Extreme Learning Machine (elm), K-Nearest Neighbor (KNN) and Support Vector Machine (SVM) learning algorithm (with linear and polynomial kernel functions) are considered in this work. The accuracy and results of these algorithms are analyzed by comparing the effectiveness among them.

KEYWORDS

Deep Neural Network, Extreme Learning Machine, K-Nearest Neighbor and Support Vector Machine Learning Algorithm, Machine Learning

INTRODUCTION

In the present world there are numerous logical innovations which are not precise but help the specialists in taking clinical choice. Heart disease prediction framework can help therapeutic experts in anticipating condition of heart, in light of the clinical information of patients nourished into the framework (Maglogiannis, Loukis, Zafiropoulos & Stasis, 2009). Around the world 12 million deaths happen consistently because of the heart sicknesses and this has been evaluated by the World Health Organization. Due to cardio vascular illness a large portion of the deaths happen and is creating nations the most important motivation in research. The various infections that influence the heart are encompassed by the term heart disease. In general, it is viewed as the essential explanation for deaths in grown-ups (Kang, Li & Wang, 2013). In the diverse nations including India, heart disease is the real reason for setbacks. In the United States it kills one individual at regular intervals.

The expression of cardiovascular sickness normally integrates the multiplicity of situation that manipulate the heart and the veins the way in which blood is pumped and travel through the body. Cardio Vascular Disease (CVD) is a serious ailment, inability and passing while Coronary Heart Disease (CHD) can take place by the reduction of blood and oxygen supply to the heart (Feng, Zhang, Chen, Hua & Ren, 2015). The CHD includes the myocardial areas of dead tissue, heart assaults and angina pectoris, or trunk agony. A heart assault occurs because of a sudden blockage of a coronary corridor because of blood coagulation. The trunk torments is the deficiency in heart

DOI: 10.4018/IJHISI.2018100106

Available online at www.sciencedirect.com

ScienceDirect

Procedia Computer Science 132 (2018) 412–420

Procedia Computer Science

www.elsevier.com/locate/procedia

International Conference on Computational Intelligence and Data Science (ICCIDS 2018)

Lung Cancer Survivability Prediction based on Performance Using Classification Techniques of Support Vector Machines, C4.5 and Naive Bayes Algorithms for Healthcare Analytics

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Abstract

The Healthcare Analytics(HcA) is a process in which clinical data is analyzed and patient's treatment is performed. The treatment depends on the analysis of clinical data accumulated from Electronic Health Records (EHRs), pharmaceutical and research and development cost and claims of patient. Lung cancer is the most common among cancer disease and the foremost reason for deaths in both men and women. In this research work EHRs are analyzed and the survivability rate is predicted for lung cancer. Researchers apply Machine Learning Techniques (MLT)for predicting the survivability rate so that chemotherapy can be provided for cancer affected people. MLTare well accepted by doctors and work well in diagnosing and predicting cancer. An ensemble of Support Vector Machine (SVM), Naive Bayes (NBs)and classification trees (C4.5) can be used to evaluate patterns that are risk factors for lung cancer study. The North Central Cancer Treatment Group (NCCTG) lung cancer data set along with new patient data is used for evaluating the performance of support SVM, NBs and C4.5. The comparison isbased on accuracy, Area Under the Curve(AUC) , Receiver Operating Characteristic (ROC) and the resultshows that C4.5 performs better in predicting lung cancer with the increase in training data set.

Peer-review under responsibility of the scientific committee of the International Conference on Computational Intelligence and Data Science (ICCIDS 2018).

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1877-0509
Peer-review under responsibility of the scientific committee of the International Conference on Computational Intelligence and Data Science (ICCIDS 2018).
10.1016/j.procs.2018.05.162

A Review of Lung cancer Prediction System using Data Mining Techniques, Logistic regression, SVM and Naïve Bayes machine learning algorithms

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***Abstract*—** Cancer has been one of the most important causes of death for both men and women. Detection of the cancer in earlier stages has the high chances of curing the disease completely. Hence the demand for the techniques to detect the occurrence of cancer nodule in early stage is increasing. Treatment and diagnosis of lung cancer in earlier stages can save many lives, failing which may lead to many other severe problems and finally resulting in death of the person. Huge amount of textual data has been collected in healthcare industry but they have not been mined properly to extract the hidden information. Data mining process is a powerful technique that helps to discover patterns in large data sets involving methods at the intersection of machine learning, statistics and database systems. This proposal is used to develop a software which is used to discover the hidden pattern in the lung cancer data set using data mining techniques and machine learning techniques namely Logistic regression (LR), Support Vector Machine (SVM) and Naïve Bayes (NB).

Keywords*—Lung Cancer; Data mining; Logistic Regression; Support Vector Machine; Naïve Bayes.*

INTRODUCTION

Lung cancer is the most frequently causing cancer in both men and women. About 27% of all cancer deaths is from Lung cancer. Lung cancer is the leading cause of cancer death among both men and women[1].Treatment and prognosis depend on the histological type of cancer, the stage, and also performance status of patient. Medications incorporate surgery, chemotherapy, and radiotherapy Survival relies upon organize, general well being, and different elements, yet general just 14% of individuals determined to have lung cancer survive five years after the determination [2]. Mortality and horribleness because of tobacco utilize is extremely high. Normally lung malignancy creates inside the divider or epithelium of the bronchial tree. It can begin at anyplace in the lungs and influence any piece of the respiratory framework. Lung cancer for the most part influences individuals between the ages of 55 and 65 and frequently takes numerous years to create. Lung cancer can be generalized into two subsections, the first one is non-small cell lung cancer(NSCLC) and second one is small cell lung cancer(SCLC). Lung malignancy chiefly happens in elderly individuals. Smoking is the fundamental cause of lung cancer. This includes both the smokers and nonsmokers. Smokers have high possibility of creating lung disease when contrasted with nonsmokers. In the other case lung cancer is identified at a beginning period, the likelihood of cure is high. Essential tumor can be identified early. In the other case that patients don't know essential tumor can develop into metastasis. There are different approaches to recognize the lung malignancy, one of them is to apply its datasets to SVM, NB and LR algorithms and develop the classification and prediction model.

The following symptoms may indicate lung cancer:

- Cough (often with blood)
- Chest pain
- Wheezing
- Weight loss.

These symptoms often don't appear until the cancer is advanced.

People may experience:

- Cough: can be chronic, dry, with phlegm, or with blood.
- Respiratory: frequent respiratory infections, shortness of breath, or wheezing
- Pain areas: in the chest or rib.
- Whole body: fatigue or loss of appetite
- Also common: chest discomfort, hoarseness, or weight loss [3].

Stop the smoking, modification in diet, and chemoprevention can be some of the preventive methods. Screening is a type of auxiliary avoidance. Technique for finding the conceivable Lung cancer patients depends on the efficient investigation of side effects and hazard factors. Non-clinical manifestations and hazard factors are a portion of the non specific markers of the malignancy infections. Natural variables have a critical part in human malignancy. Numerous cancer-causing agents are available noticeable all around we inhale, the nourishment we eat, and the water we drink. The consistent and some of the time unavoidable introduction to natural cancer-causing agents confuses the examination of disease causes in people.

International Journal on Future Revolution in Computer Science & Communication Engineering
Volume: 4 Issue: 4
ISSN: 2454-4248
747 – 750

A Review on Predictive Analysis for DiabeticBlood Glucose and Reductionof over fitting inDiabetes using Deep Learning Neural Network

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***Abstract*—** In this research, a prediction system is developed for the illness of diabetes and dropout strategy is made use to minimize the issues of overfitting. The key idea is arbitrarily drop unit from neural network during preparing. Expectation of blood glucose levels Measured by continuous glucose observing gadgets, by utilizing clinical information. The certain rate of a patients in the data set take as a training data and test on the left-over portion of the patients, i.e., the machine need not re-calibrate on other patients in the data set.

Keywords- *Dropout, Data overfitting, Diabetes Prediction, Neural Network, Deep Learning (DL).*

*****

I. INTRODUCTION

Diabetes is a chronic disease caused due to abnormally high levels of sugar glucose in the blood. Diabetes is usually referred as Diabetes mellitus. Diabetes is due to one of two mechanisms, Insufficient production of insulin (which is made by pancreas and brings down blood glucose), or Insufficient sensitivity of cells to the activity of insulin.

Diabetes is grouped into two types namely[1], Type I and Type II diabetes. In Type I diabetes, is a chronic condition in which the pancreas produce little or no insulin, which is also known as insulin-dependent diabetes. In type II diabetes, the human body cannot use insulin the right way, which is also termed as non insulin-dependent diabetes.

The idea of deep learning (DL) is a quickly developing one which is overflowing with thoughts as of recent years. Deep learning techniques are used in various fields, including medical field and optimal character acknowledgment [2]. The strategies of deep learning, in particular - deep learning neural system, to propose a model for diabetes forecast with high exactness. Deep neural systems contain various non-straight concealed layers and this makes them extremely expressive models that can learn exceptionally convoluted connections between their data sources and yields. With limited training information, however, many of this complicated blood relationship will be the resultant role of sampling noise, so they will exist in the training set but not in real test data even if it is drawn from the same distribution [3]. This leads to overfitting and many method acting have been developed for reduction.

II. RELATED WORK

In this paper, the outcome of a previous methods as well as outcome of proposed methods are discussed. The outcome of the proposed method is more accurate and précised when compared to outcome of previous method. Smith et al. utilized the perceptron based calculation called ADAPtive learning routine (ADAP), which is an early neural system demonstrate, to build up a diabetes expectation display for estimating the entry of diabetes mellitus. The framework's execution measures were finished utilizing standard clinical benchmarks as specificity and affectability. The outcomes acquired were then contrasted and those secured from applying direct per-captor models and calculated relapse [3].

The three neural network structures, such has multilayer perceptron (MLP), general regression neural network (GRNN), and radial basis function (RBF) are proposed by Kayaer and Yıldırım and they utilized the same data set to evaluate these three models. The performance gained by employing MLP was better than that of RBF method for all spread values tried. Among the them, GRNN was able to provide the finest result on the test data [4].

III. PROPOSED METHOD

Square graph of the proposed strategy is laid out in Figure. 1. Here, the process begins by entering information into the Input layer. At that point there are two completely associated Layer which is followed by dropout layer. At last result is yeild from yeild layer (i.e. output layer) with a single hub[5]. Together these layer build a multilayer perceptron. These method is used to reduce the overfitting in diabetes predication.

International Journal of Scientific Research in Computer Science, Engineering and Information Technology
© 2018 IJSRCSEIT | Volume 3 | Issue 3 | ISSN : 2456-3307

Survey on automated detection of referable Diabetic Retinopathy using machine learning

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ABSTRACT

Diabetic retinopathy is a complication of diabetes, that results in the rupture of the blood vessels in the light-sensitive region of the eye also known as the retina. This situation can occur in a person who has either type 1 or type 2 diabetes. Excess sugar levels in a diabetic person block the blood vessels that nourish the retina of the eye. So as to compensate this shortcoming the retina grows new blood vessels, however, this new blood vessel can rupture easily. The traditional means to detect diabetic retinopathy is to undergo regular screening and then to consult a doctor. This is a significant time-consuming task as there is a shortage of experienced ophthalmologist, as a result, 45% of the patient suffer from vision loss even before they are diagnosed. Another major problem associated with this method is that there is significant inconsistency among doctors who diagnose diabetic retinopathy, as a result, there are chances that diabetic retinopathy can go undetected at its early stage. The automated detection involves training a machine learning model that can detect new cases of diabetic retinopathy from retinal fundus images which have been graded by experienced ophthalmologists. The decision for predicting the degree of diabetic retinopathy has been done using machine learning algorithms such as deep convolution network, SVM and Naïve Bayes.

Keywords : Diabetic retinopathy, Machine learning, Convolutional neural network, SVM, Naïve Bayes.

I. INTRODUCTION

Diabetes is a metabolic disease wherein a person has high blood sugar level in his body which may be a result of either insufficient production of insulin by the pancreas or inability of the body to use the insulin so produced or it can be both of them. As of 2016, there are about 415 million people suffering from diabetes and it is expected to grow to about 642 million by 2040. This increased blood sugar level in the body can lead to a variety tissue damage, Diabetic retinopathy being one of them. India is expected to have around 79 million suffering from diabetes by end of 2030. All type 1 diabetic and more than half of type 2 diabetic are expected to develop diabetic retinopathy [1][2]. The longer a person is suffering from diabetes the greater the chances of developing diabetic retinopathy. If left untreated it can lead to permanent vision distortion or blindness. It is the largest cause of blindness among people of the age group of 20 to 74 in most countries [3].

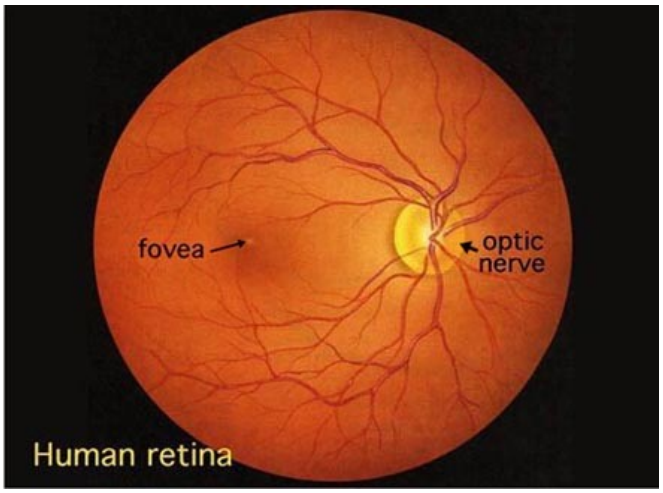

Figure 1: Image of retina

International Journal on Future Revolution in Computer Science & Communication Engineering
Volume: 4 Issue: 3
ISSN: 2454-4248
463 – 466

A Review of Ensemble Machine Learning Approach in Prediction of Diabetes Diseases

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***Abstract*—** Data mining techniques improve efficiency and reliability in diabetes classification. Machine learning techniques are applied to predict medical dataset to safe human life. The large set of medical dataset is accessible in data warehousing which used in the real time application. Currently Diabetes Diseases (DD) is among the leading cause of death in the world. Data mining techniques are used to group and predict symptoms in medical dataset by different examiners. Data set from Pima Indian Diabetes Dataset (PIMA) were utilized to compare results with the results from other examiners. In this system, the most well known algorithms; K-Nearest Neighbor (KNN), Naïve Bayes (NBs), Random Forest (RF) and J48 are used to construct an ensemble model. The experiment's result reveals that an ensemble hybrid model increases the accuracy by combining individual techniques in to one. As a result, the model serves to be useful by doctors and Pathologist for the realistic health management of diabetes.

Keywords- *Diabetes, Machine Learning, Data mining, Ensemble, KNN, NBs, RF, J48.*

*****

I. INTRODUCTION

Diabetes is a chronic disease caused due to abnormally high levels of sugar glucose in the blood. Diabetes is usually referred as "Diabetes mellitus". Diabetes is due to one of two mechanisms, Insufficient production of insulin (which is made by pancreas and brings down blood glucose), or Insufficient sensitivity of cells to the activity of insulin.

Globally, an estimated 422 million adults are living with diabetes mellitus, according to the latest 2016 data from the World Health Organization (WHO) [1].

Diabetes is grouped into two types namely, Type I and Type II diabetes. In Type I diabetes, is a chronic condition in which the pancreas produce little or no insulin, which is also known as insulin-dependent diabetes. In type II diabetes, the human body cannot use insulin the right way, which is also termed as non insulin-dependent diabetes.

II. RELATED WORK

Song et al. [2] Describes and explain different classification algorithms using different parameters such as Blood Pressure(BP), glucose, skin thickness, insulin, BMI, Diabetes pedigree and age. The researchers were not included to predict diabetes diseases. In this research, the researchers were using only small sample data for prediction of diabetes. The five different algorithms used are GMM, ANN, SVM, EM and Logistic Regression. This paper concludes high accuracy is provided by Artificial Neural Network (ANN).

Loannis et al. [3] proposed that machine learning algorithms are very important to predict different medical datasets including diabetes dataset (DDD).The paper proposed SVM, Logistic Regression and Naïve Bayes using 10 fold cross validation to predict different diabetes datasets.

III. A STUDY ON CLASSIFICATION ALGORITHMS

A. Logistic Regression

The classification algorithm aims to develop a model that can map data items to a given category, based on the existing data. It was used to extract significant data items from the model or to predict the tendency of data. The dependent variable of the logistic regression algorithm is binary-classification. It means that the logistic regression algorithm is always used to solve two-category problem. The main purpose of our experiment is to predict whether a person is diabetic or not, which is a typical binary-classification problem. Besides, the logistic regression algorithm is always used in data mining, disease diagnosis and economic prediction, especially predicting and classifying of medical and health problem. It predicts the probability of the outcome that can only have two values that is 0 0r 1. When output is 1 it means the value is greater than the threshold, else the output is 0. The range of output of logistic regression is always between 0 and 1. The main idea of Logistic regression is that it reduces the prediction range and limits the prediction value to 0 or 1.

B. K-Means

Cluster analysis aims to partitioning the observations into disparate clusters so that observations within the same cluster are more closely related to each other than those assigned to different clusters [4] . In the first stage, improved K-means algorithm is used to remove the incorrectly clustered data. The optimized dataset is used as input to the next stage. The main idea of K-Means is to divide the given unspecified data into fixed K number of centroids. A centroid is real or imaginary

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Procedia Computer Science 132 (2018) 412–420

Procedia Computer Science

www.elsevier.com/locate/procedia

International Conference on Computational Intelligence and Data Science (ICCIDS 2018)

Lung Cancer Survivability Prediction based on Performance Using Classification Techniques of Support Vector Machines, C4.5 and Naive Bayes Algorithms for Healthcare Analytics

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Abstract

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Peer-review under responsibility of the scientific committee of the International Conference on Computational Intelligence and Data Science (ICCIDS 2018).

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1877-0509
Peer-review under responsibility of the scientific committee of the International Conference on Computational Intelligence and Data Science (ICCIDS 2018).
10.1016/j.procs.2018.05.162

International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878, Volume-8, Issue-1C, May 2019

ROC Structure analysis of Lean Software Development in SME's using Mathematical CHAID Model

Aditya Pai H, Sameena H S, Sandhya Soman and Piyush Kumar Pareek

Abstract: These days, numerous software associations are utilizing Agile philosophies to improve the execution of their procedures. In any case, some of them are discovering benefits in the better approaches for improving these officially settled procedures. Lean software development has been utilized to upgrade these procedures significantly more, for the most part because of the decrease of waste. So as to have the capacity to push forward the impact of this marvel, giving progressively empiric proof on this theme is required. This Paper attempts to present a questionnaire survey summarized results of SME's in Bengaluru regarding Lean software development , Results are analysed using IBM SPSS package , The questionnaire used was verified using Cronbach alpha test reading a high reliable and valid status of the conduction of collection process .

Index Terms: Agile, IBM SPSS, Cronbach Alpha Test,SMEs

I. INTRODUCTION

"Lead time" is a term obtained from the assembling technique known as Lean or Toyota Production System, where it is characterized as the time passed between a client submitting a request and getting the item requested. There are different advantages of lead time:

- Flexibility amid fast moves in the market
- The capacity to outpace your rivals with quicker, progressively productive yield
- Quicker renewal of stock to maintain a strategic distance from stock outs, lost deals, and lost clients
- Meeting due dates reliably and effectively
- Increases in income on account of expanded request satisfaction

A. Difficulties looked in Lead times

Long Lead Times-Every venture IT association is extraordinary in that it will have diverse bottlenecks and requirements in its arrangement pipelines.

Handoffs-DevOps culture endeavors to separate the authoritative storehouses and progress more to item groups. This is on the grounds that the current siloed hierarchical structure gives headwinds to the goal of short lead times and persistent stream.

Endorsement Processes-Approval forms were initially created to moderate hazard and give oversight to guarantee adherence to auditable principles for moving changes into generation.

Condition Management· and Provisioning-There is nothing more debilitating to a dev group than holding on to get a domain to test another element. Absence of condition accessibility as well as condition dispute because of manual procedures and poor booking can make incredibly long lead times, defer discharges, and increment the expense of discharge arrangements.

Manual Software Deployments-Machines are obviously better and substantially steadier at conveying applications than people. However there still are countless that still physically send their code. Robotizing manual arrangement can be a speedy win for these associations. This methodology can be conveyed quickly without major hierarchical changes. It isn't exceptional for associations to see sending lead times diminished by over 90%.

Manual Software Testing-Once nature is prepared and the code is sent, it's time to test to guarantee the code is functioning of course and that it doesn't break whatever else. The issue is that most associations today physically test their code base. Manual software testing drives lead times up on the grounds that the procedure is exceptionally moderate, blunder inclined, and costly proportional out crosswise over vast associations.

B. Problem Statement

The software advertise is winding up progressively powerful which can be seen in every now and again changing client needs. Software organizations should almost certainly rapidly react to these changes. This implies they need to end up light-footed with the target of creating highlights with exceptionally short lead-time and of high caliber.

An outcome of this test is the organizations should convey in all respects rapidly, in the meantime keeping up the quality. Our Research goes for Understanding the total procedures directly utilized in SME's, further recognizing the Non Value Added exercises and diminishing it by proposing a model.

Revised Manuscript Received on May 20, 2019

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Retrieval Number: A10090581C19/19©BEIESP

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

Bacterial Foraging Optimization-Based Clustering in Wireless Sensor Network by Preventing Left-Out Nodes

S. R. Deepa and D. Rekha

Abstract The primary aim of Wireless Sensor Network (WSN) design is achieving maximum lifetime of network. Organizing sensor nodes into clusters achieves this goal. Further, the nodes which do not join any cluster consume high energy in transmitting data to the base station and should be avoided. There is a need to optimize the cluster formation process by preventing these left-out nodes. Bacterial Foraging Optimization (BFO) is one of the potential bio-inspired techniques, which is yet to be fully explored for its opportunities in WSN. Bacterial Foraging Algorithm for Optimization (BFAO) is used in this paper as an optimization method for improving the clustering performance in WSN by preventing left-out node's formation. The performance of BFAO is compared with the Particle Swarm Optimization (PSO) and LEACH. The results show that the BFAO performance is better than PSO and LEACH in improving the lifetime of network and throughput.

Keywords Wireless sensor networks · Bacterial foraging algorithm · Particle swarm optimization · Clustering · Routing protocol

1 Introduction

WSN has many sensor nodes characterized by limited resources, e.g., (i) power, (ii) processing capability, (iii) less internal storage, and (iv) restricted transmission/reception capacity. The capabilities of sensors are further limited by the power supply, bandwidth, processing power, and malfunction [1]. With such characteristics, the deployment of WSN was seen in various commercial applications, e.g., monitoring habitats in forests, inventory tracking, location sensing, military, and disaster relief operations [2]. The communication in WSN is characterized by three types of

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J. K. Mandal and D. Sinha (eds.), *Intelligent Computing Paradigm: Recent Trends*, Studies in Computational Intelligence 784,
https://doi.org/10.1007/978-981-13-7334-3_4

Cluster Optimization in Wireless Sensor Networks Using Particle Swarm Optimization

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Abstract. Clustering approaches have been used to an extensive range of issues and also in Wireless Sensor Network (WSN) domain efficiently to address scalability problem. This paper proposes a Particle Swarm Optimization (PSO) technique to enhance the lifetime of wireless sensor networks. Better scalability is achieved through clustering process to make sure of even distribution of nodes into clusters and thus eliminating leftover nodes problem which will be a major cause for draining out the energy of sensor nodes and results in reduced lifetime of overall network. The Spanning tree based data routing process will ease the task of cluster heads while forwarding the data further towards base station. The proposed work is carried out in NS-2, the results show that PSO outperforms the existing techniques such as DRINA, BCDCP, OEERP, E-OEERP in terms of network lifetime, throughput, packet delivery ratio, residual nodes and packet drop count.

Keywords: Routing protocol · Wireless sensor networks
Particle Swarm Optimization

1 Introduction

The sensor nodes used in Wireless Sensor Network (WSN), sense the real world events and transmit data to base station for further processing. Sensors assist the society, since they can be integrated into vehicles, eco space and many devices. They can help to avoid terrible events such as collapsing of buildings, preserve natural resources, improves productivity and security. It also helps in developing new technologies such as smart home applications. As the technology advances in integrated circuit system, electro mechanical system wireless systems, the usage of wireless sensor networks are increased extensively. The size of the microprocessors has reduced in time and there is reduction also in its cost. This reduction in size, cost and increase in computation of microprocessors has led to the development and usage of more sensors. Wireless Sensor Networks are used extensively in sensing and reporting about floods, pollution, water usage, improving crop quality and fertilizers [1–4].

Many of the sensors get connected to controlling devices and devices which process (for through LAN), a rapidly increasing sensor nodes communicate the information through wireless channels to a base station. Most of the applications need dense

J. K. Mandal and D. Sinha (Eds.): CSI 2017, CCIS 836, pp. 240–253, 2018.
https://doi.org/10.1007/978-981-13-1343-1_23

International Journal of Applied Engineering Research ISSN 0973-4562 Volume 13, Number 17 (2018) pp. 13335-13339

Fisheye state Protocol in Correlation with Power Consumption in Ad-hoc Networks

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Abstract

Ad-hoc networks are self-organizing networks and hence the challenges are also larger. Active research is going on in the field of ad-hoc networks for the same reason. The challenges are numerous like routing, MAC, mobility, scalability, reliability, security, power consumption, bandwidth etc., Depending upon the application of ad-hoc networks the specific challenges can be dealt.

In this paper routing protocols has been studied thoroughly and proactive routing protocols have been chosen for a particular challenge, power consumption. FSR is compared with other proactive protocols like DSDV and OLSR. It is found from simulation results that Fisheye state routing protocol has been proved to be best for many parameters like throughput, packet delivery ratio and energy consumption. FSR, OLSR, DSDV has been implemented and FSR is chosen to be best for power consumption. The simulation is executed using discrete event simulator NS-2.

Category: Smart and intelligent computing

Keywords: Ad-hoc Networks, DSDV, Fisheye state, OLSR.

INTRODUCTION

Wireless communication is the quickly expanding & most vital technological areas in the communication field. Our lives are unimaginable without Wireless communication like TV, Radio, Mobile, Radar, GPS, Wi fi, Bluetooth, RFID etc. [18]. In latin adhoc means "for this purpose" . Ad-hoc networks are collection of autonomous nodes or terminals that communicate with each other by forming a multi-hop radio network and maintaining connectivity in a suburbanized manner in an infrastructure less environment. [16] Several classifications of Ad-hoc networks are MANET, VANET, FANET, WSN etc. Ad-hoc network often refers to a mode of operation of IEEE 802-11 wireless networks. Initially these networks were designed for battlefield networks & disaster recovery applications, due to their quick deployment feature without the existence of any infrastructure .But with rapid growth of mobile communication, MANETs are considered as major contemplate in the next generation network technologies.

Various power optimization techniques are existent in Ad-hoc networks. Optimization of power is of great importance in Ad-hoc networks as their organizational composition & lack of central co-ordination. The power control requirements vary depends on various layers like the physical, network & MAC layer implementations of Ad-hoc network [5].Generally power conservative protocols are divided into two main categories transmitter power control protocols & power management algorithms. Second classification can be further divided into MAC layer and network layer protocols.

It has been seen that in Ad-hoc network, power consumption does not always demonstrate active communication in the network. In a transmitting or receiving state power consumption of wireless devices is only moderately smaller than sleep state. It is better to turn radio off when it is not in use. Most of the power conservation schemes consider the nodes can adapt this transmission power, some of them consider position awareness of the nodes using GPS & capability of energy replenishment etc.

The rest of this paper is organized as follows we briefly discuss routing protocols in section 2. In section 3 in particular Fish eye state protocol is discussed. Section 4 is simulation results & analysis. Section 5 is conclusion & future work.

ROUTING PROTOCOLS

In mobile Ad-hoc networks nodes are mobile and can be connected actively in a random style. All nodes here are routers and involve in route discovery & conserving of routes to another nodes in the network. [4]. There are many classifications of protocols depending upon the diversity of application areas. The basic aim of the protocols are the maximize throughput and packet delivery ratio while minimizing packet loss, control overhead & energy usage. Nevertheless the comparative preferences of these criteria vary among different application areas. There are certain situations where ad-hoc networks are really the only possible solution, while in some other application ad-hoc network participate with other technologies. [11]. The routing protocols can be classified as flat routing, hierarchical & graphic position assisted routing [10]

Discovering & conserving routes in an Ad-hoc network is a challenge as topology of the network changes very frequently & requires more efficient & flexible mechanisms. Apart from handling the topology changes these protocols must deal with other restrictions such as low BW, limited power consumption, high error rates.

Proactive methods maintain router to all nodes, irrespective of whether those routes are needed or not. The main advantage of this category of protocols is that hosts can quickly obtain route information & establish a session.

Multimedia Tools and Applications
https://doi.org/10.1007/s11042-018-6746-2

Fragile watermarking for copyright authentication and tamper detection of medical images using compressive sensing (CS) based encryption and contourlet domain processing

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Received: 8 December 2017 / Revised: 20 September 2018 / Accepted: 1 October 2018
Published online: 07 October 2018

Abstract
With the rapid growth in communication and computing technologies, transmission of digital images and medical images over the Internet is on the rise. In such scenario, there is a special need to meet the security and privacy issues and challenges of an individual and Intellectual Property (IP) owners. It is highly important for an individual to keep his/her personal images against invalid manipulation by the impostors. Hence developments of authentication and tamper detection techniques are the need of the hour. In this paper, a new hybrid non-blind fragile watermarking technique is proposed for tamper detection of images and for securing the copyrights of sensitive images. A combination of Compressive Sensing (CS) theory, Discrete Wavelet Transform (DWT), and Non-Subsampled Contourlet Transform (NSCT) are employed to achieve security, high embedding capacity, and authenticity. In this technique, the requirements are achieved by inserting encrypted watermark in lower frequency contourlet coefficients of cover images. The experimental results prove that this proposed technique provides high security, high imperceptibility, authenticity and tamper detection of various common signal processing and geometrical attacks.

Keywords Authentication · Contourlet transform (CT) · Fragile · Medical image · Non-blind watermarking · Security

1 Introduction

The digital images are convenient, but can be easily accessed, modified, and distributed by unauthorized people when shared over Internet. A medical image which includes personal

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Taylor & Francis
Taylor & Francis Group

Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization

ISSN: 2168-1163 (Print) 2168-1171 (Online) Journal homepage: https://www.tandfonline.com/loi/tciv20

Crypto-watermarking scheme for tamper detection of medical images

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To cite this article: Surekha Borra & Rohit Thanki (2019): Crypto-watermarking scheme for tamper detection of medical images, Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization

To link to this article: https://doi.org/10.1080/21681163.2019.1595730

Published online: 28 Mar 2019.

International Journal of Digital Crime and Forensics
Volume 11 • Issue 2 • April-June 2019

A FRT - SVD Based Blind Medical Watermarking Technique for Telemedicine Applications

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ABSTRACT

In this article, a blind and robust medical image watermarking technique based on Finite Ridgelet Transform (FRT) and Singular Value Decomposition (SVD) is proposed. A host medical image is first transformed into 16 × 16 non-overlapping blocks and then ridgelet transform is applied on the individual blocks to obtain sets of ridgelet coefficients. SVD is then applied on these sets, to obtain the corresponding U, S and V matrix. The watermark information is embedded into the host medical image by modification of the value of the significant elements of U matrix. This proposed technique is tested on various types of medical images such as X-ray and CT scan. The simulation results revealed that this technique provides better imperceptibility, with an average PSNR being 42.95 dB for all test medical images. This technique also overcomes the limitation of the existing technique which is applicable on only the Region of Interest (ROI) of the medical image.

KEYWORDS

Arnold Scrambling, Blind Watermarking, Finite Ridgelet Transform (FRT), Medical Image, Singular Value Decomposition (SVD)

1. INTRODUCTION

In the last few years, medical treatments and diagnosis of the patients are being solved with the support of a variety of medical data such as images or signals. While the examples of medical images which are widely used are Magnetic Resonance Imaging (MRI), X-ray, Computerized Tomography (CT) and Ultrasound (US), the examples of 1-D medical signals are ECG and EEG signals. Nowadays, it has become a common practice to share medical data among doctors and radiologists for better diagnosis, health solution, and treatment. Transferring medical images over a transmission medium is referred to as telemedicine (American Hospital Association, 2015; Yassin, 2015). The telemedicine aids in emergency treatment, home monitoring, military applications and medical education (Yassin, 2015) to name a few. Security of medical images becomes necessary when they are transferred over any open access network. Corruption or modification of medical images by someone or some process leads to serious health issues for any individual. There is in fact high probability for the medical images being corrupted or modified by various intentional and unintentional processing during storage or transmission over a medium. While various techniques such as cryptography and steganography are available for protecting medical images, the digital watermarking technique is the proven solution for copyright protection (Borra et al., 2017; Thanki et al., 2017; Lakshmi and Borra, 2016; Borra and Lakshmi, 2015; Borra and Swamy, 2014; Borra et al., 2012; Borra and Swamy, 2012; Thanki et al., 2011; Borra and Swamy, 2009).

DOI: 10.4018/IJDCF.2019040102

Physical Layer Secret Symmetric Key Generation and Management Techniques for Wireless Systems-A Study

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Abstract-Symmetric encryption is more attractive due to its simplicity in implementation especially under restricted environment where there is a constraint on computation, memory, power etc. One of the basic requirement is that both the legitimate parties to posses common secret key which is quite challenging in the wireless medium which is unsecure to share. There is a shift in the paradigm from developing complex and secure encryption algorithms, to emphasise in securing and sharing the secret information i.e., secret key. In this paper we make an extensive survey of methods in generating secret key in various context and the key management techniques. The concept of symmetric key management and generation techniques were studied under physical layer security context.

Keywords: key sharing, key generation, key management, physical layer security, channel state information (CSI), biometric key, elliptic curve cryptography, channel model.

I. INTRODUCTION

With the popularity and advancement of connecting technologies, wireless devices have paved it way in our day to day life. Even critical data applications such as banking, military, business have become wireless. Wireless mode of communication are more vulnerable for unintended audience, hence there is a need for achieving secrecy for the data.

Secrecy mechanisms are broadly classified under concealment systems, secrecy systems and privacy systems. Concealment systems are those similar to stenographic techniques which involves data hiding , security systems uses codes and mathematical transformations, whereas privacy systems requires devices to recover messages.

We are concerned with security systems to achieve confidentiality, integrity, availability, authorisation, non repudiation, freshness, accountability and assurance.

Critical data is transformed into codes with some of the cryptographic primitives such as symmetric/asymmetric encryption, digital signatures and hash functions.

In present communication system, security is implemented at each level as an additional cryptographic feature. It has become a part of network design and security reinforcement.

We are concerned with physical layer security as it aims at providing security at the initial level i.e.., bit level. Also physical layer security does not require additional equipment than that are already employed for communication.

The public key or asymmetric cryptography has an advantage of scalability, while digital signatures have intrinsic authentication properties, but both lacks due to high computational overhead and authentication by public certificates. Symmetric cryptography attracts due to its simplicity and less weight computation but lacks in providing authentication and not scalable.

As wireless nodes have constrained by its computational capability, memory size & power hence we prefer symmetric cryptography which is light computational weight and less complexity in implementing at the physical layer level. The key challenges to implement symmetric key cryptography is sharing a common key between sender and receiver, as wireless medium are open systems and are vulnerable to security attacks[18].

In this paper we address to the various symmetric key generation and management techniques on wireless mediums. We also discuss recent works carried in this field.

The rest of the paper is organised in this manner: section II deals with the basic symmetric key management concepts while section III with physical layer security which also discusses about key management techniques. Basics of wireless channel characteristics followed by key generation channel models are discussed in section IV. Section V summarises the recent related work in symmetric key generation techniques and conclusion and future works is presented in the end in section VI.

WATCHDOG FOR ATM

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Abstract—**In real world applications, target tracking in low resolution video is a difficult task because there is loss of discriminative detail in the appearance of moving object. The methods which are existing are mostly based on the enhancement of LR (low resolution) video by super resolution techniques. But these methods require high computational cost. The cost further increases if we are dealing with events detection. This paper is able to detect unusual events without high end conversion and well suited for enhancement of security of ATMs. Conventional low-resolution cameras are used due to their low cost. Proposed algorithm only uses close morphological operation with disk like structuring element in the pre-processing steps to cope up with low resolution video. This algorithm further uses rolling average background subtraction technique to detect foreground object from dynamic background in a scene.Our proposed algorithm will able to detect the occurrence of uncommon events such as overcrowding inside the ATMas well asa fight in the low resolution video. Here we provide a onne stop solution for the overall surveillance of the ATM's and their security 24/7.The ATM's are secured from various mal-practices like theft , Camera masking , overcrowding and unusual event.**

Keywords— **Object Tracking, Unusual event detection, video surveillance, background subtraction, ATM**

I. INTRODUCTION

An Automated Teller Machine (ATM) allows customers to perform banking transactions any and at any time without the need of human teller. By using a debit or ATM card at an ATM. individuals can withdraw cash from current or savings accounts, make a deposit or transfer where money from one account to another or perform other functions.

Automated teller machines is almost a direct currency dispenser terminal permitting the client to directly get the money, however a while thanks to lack of security in some way or the other. some unauthorized user or hackers or criminals take an opportunity to tamper the machine and steal the money by physical attacks on Automated teller machines and by tampering with the machine, cutting the safe, bombing, shoulder surfing, ram riding are the other common abuse of Automated teller machines by the frauds. There are several criminal attacks on Automated teller machines' involving hold-up, removal of Automated teller machines from its premises by force. or by assault to the Automated teller machines within the premises with safe-breaking instrumentally or by explosives.

In the majority of attempts of attacks. the criminal has gained success of varying degree. To safeguard from this sort of frauds some security features are being added/created for Automated teller machines from time to time but these security features gets holed by the criminals. Wayside cheaters and gangster used to loot money from victims at deserted/isolated places by nabbing the passerby, with introduction of Automated teller machine, they did find small money or no money from the victims. Since they noticed that invariably all the victims had ATM cards with them. they added the practice of forced withdrawal from the victims from ATM cards. Gangster either wait in Automated teller machine kiosks for the victim as if they are waiting to withdraw the money or nab a victim at deserted place and bring the victims to Automated teller machine kiosks and force the victim at knife point or gunpoint to use his ATM card and withdraw the money from the Automated teller machine using ATM card and his PINnumber.

HOW ATMSWORK?

A data terminal with two input and four output devices is nothing but an ATM.ATM willconnect and communicate through a host processor like any other data terminal devices. The Internet Service provider (ISP) will be connected to host processor which is analogous. it is in this gateway through which all the various ATM centre networks becomes available to the cardholder (the person wanting the cash).

Many of the host processors can support eitherdial-up machines or leased line. Leased-line machines will connect directly to host processor through a point-to-point, four wire and dedicated telephone line.ATMs with dial-up will be connected to the host

IOT BASED CAMOUFLAGE ARMY ROBOT

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Abstract **- Science is a field developing in a rapid phase in order to create the technology which can make human life easier. Nowadays, many innovations and inventions are made in the field of defence to reduce the loss of human lives. One such invention is Camouflage Robot that plays a vital role in reducing the damages that occur during disasters. This robot is designed to work on the principle of Chameleon's camouflaging technique which is one of the most natural and primitive methods for avoiding detection. The main objective of this paper is to implement a multi-functional army robot consisting of various sensors. The proposed system consists of a wireless camera for live video streaming surveillance and a colour sensor is used as a part of camouflaging feature. In the proposed model cloud based IOT interface with Blynk app and Wi-Fi module are used for retrieving, storing and recovering information to increase the range of communication.**

Keywords - IoT, Camouflage, Surveillance, Blnyk

I.INTRODUCTION

In the modern combat techniques employed by various militant forces across the globe, stealth and ability to maneuver in inaccessible areas plays a key role. The idea of the proposed system is to use robots which are capable of disguising itself in order to infiltrate the enemy campsite [1]. The word robot means "A machine which is capable of performing complex series of actions automatically that is programmable by a computer." These robots used in defence are usually employed with the integrated system, including cameras, sensors and video screens [2]. The main motive behind Camouflage Robot is to reduce human losses in terrorist attacks or military operations. Many military organizations take the help of robots in the risk prone areas. Camouflage Robot acts as a virtual spy that can quietly enter into enemy area and send information via camera to the controller [10]. The movement of the robot is remotely controlled using a mobile. Robots can be made to interact and cooperate more closely with human beings by incorporating additional features such as robustness and autonomy. A versatile perception and recording of different parameters in this robot is accomplished using a multi-sensor platform. In this system an interfacing module is incorporated to remotely sense the object parameters using IoT (Internet of Things). Finally, the purpose of the project is to design, manufacture and operate a robot using a remote controlled device. A small mobile robot is designed which can duplicate its colors similar to the platform it moves on, appearing as camouflaged to the outside world.

II. PROPOSED METHODOLOGY

A Camouflage Army Robot is designed in such a way that it can reproduce the color independently at various areas with specific spots of the ground surface which allows the robot to mock up as a checkerboard of multiple colors i.e. the various colors it drives over. In the implemented system the movement of the robot can be controlled in any required direction using IoT platform and smart phone which receives the information from the sensors and camera.

The main processor used in the proposed system is Arduino Mega, which is a microcontroller board based on the ATmega2560. The ATmega series is much more advanced since it has many more peripherals that can be easily programmed when compared to 8051 Microcontroller. An ultrasonic sensor is incorporated which measures the distance to an object by using sound waves and helps in detecting the obstacles [5]. Here a passive

FISITA World Automotive Congress 2018
Volume 2018-October, 2018
37th FISITA World Automotive Congress 2018; Chennai; India; 2 October 2018 through 5 October 2018;
Code 142293

EGR, DPF and DOC techniques for comprehensive reduction of emissions for engine fuelled with diesel/Dee blends by three approaches (Conference Paper)

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Abstract

Objectives: 1. To study feasibility of diesel fuel usage in modified diesel engine with optimized engine parameters in terms of injection timing, injection pressure, number of holes on nozzle and combustion chamber shapes on its performance, emission and combustion characteristics. 2. To conduct performance tests on existing diesel engine with optimized DEE/Diesel blend ratio along with EGR and after treatment devices. 3.To conduct performance and emission behaviour of diesel engine with manifold injected Di Ethyl Ether and study combined effect of EGR and after treatment devices 4. To compare performance and emissions of Diesel engine at these various operating conditions and evolving an optimum condition leading to least NOx emissions. Methodology: Experiments were conducted on single cylinder four stroke diesel engine coupled to eddy current dynamometer. In the first approach, base line data generation for optimization of injection timing, injection pressure, number of holes and combustion chamber types is done. Further, EGR is supplied at the rate of 5, adopting DPF and DOC, NOx emission is measured. In second approach, test

European Journal of Sustainable Development Research, 2018, 2(3), 30
ISSN: 2542-4742

Effects of Using Diesel Particulate Filter and Diesel Oxidation Catalyst with Exhaust Gas Recirculation on the Performance of Compression Ignition Engine Fuelled with Diesel- Di Ethyl Ether Blend

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Citation: Banapurmath, N. R., Nagaprasad, K. S., Madhu, D. and Khandal, S. V. (2018). Effects of Using Diesel Particulate Filter and Diesel Oxidation Catalyst with Exhaust Gas Recirculation on the Performance of Compression Ignition Engine Fuelled with Diesel- Di Ethyl Ether Blend. *European Journal of Sustainable Development Research*, 2(3), 30. https://doi.org/10.20897/ejosdr/87153

Published: July 9, 2018

ABSTRACT

In the present work, a single cylinder diesel engine was suitably modified to operate on diesel, diesel and diethyl ether (DEE) in blended form in which percentage of diethyl ether in diesel blends was varied from 5 to 20% in steps of 5%. Further the effects of exhaust gas recirculation (EGR) on the performance of diesel engine fueled with alcohol and diesel blended fuels were studied. The pre-and post-combustion methods were adopted to study the performance of the modified diesel engine. Post combustion analysis involved use of emission control devices like Diesel Particulate Filter (DPF) and Diesel Oxidation Catalyst (DOC) combination for effective control of unburned hydrocarbon (UBHC) and particulate matter (PM) respectively. From the study it was observed that the engine was consistent in its operation throughout the experimental investigations when operated on selected fuel combinations. Based on the comprehensive experimental investigations carried out the following conclusions have been derived. The brake thermal efficiency (BTE) increased with increased injection of DEE and highest BTE was found to be 29.25% for 80% loading condition using 20% DEE and without EGR. In-cylinder pressure and heat release profiles showed delayed combustion for DEE blends compared to diesel and the same was more pronounced with higher DEE blends. Shorter combustion duration was observed with DEE compared to diesel. Increased smoke and UBHC emissions were observed for increased EGR induction for all operating conditions while the oxides of nitrogen (NOx) emission decreased. For 20% DEE fuel operation adopted along with DPF, smoke emissions reduced by 75%. It is observed that, adopting DPF, NOx emission reduced by 10%; while adopting DOC, NOx emission reduced by 6%. At 80% load optimum conditions for the modified diesel engine operation with selected fuel combinations were observed for 20% diethyl ether/diesel ratio, and 20% exhaust gas recirculation rate along with both DOF and DOC respectively.

Keywords: Di-Ethyl ether, diesel particulate filter, diesel oxidation catalyst, performance

INTRODUCTION

Diesel engines are durable, economical and therefore they are an important power source in farming and industrial equipments. However, the problems with them being their higher emissions. Therefore, all researchers should chant the statement "Research makes diesel engine greener".

[Manjunath, 6(2): February 2019]
DOI- 10.5281/zenodo.2573837

ISSN 2348 – 8034
Impact Factor- 5.070

GLOBAL JOURNAL OF ENGINEERING SCIENCE AND RESEARCHES

STUDIES ON MECHANICAL PROPERTIES OF HYBRID COMPOSITES USING JUTE AND E-GLASS BY HAND LAYUP AND VACUUM BAGGING TECHNIQUE

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ABSTRACT

Fiber reinforced polymer composites are being used in almost every type of applications in our daily life and its usage continues to grow at an impressive rate. This paper deals with the hybrid composite material made up of Jute and E-glass fibers which are fabricated by hand layup technique and vacuum bagging technique using Lapox L12 epoxy and K6 hardener. The properties of the hybrid composite are determined by tests like tensile, flexural and hardness tests are evaluated experimentally according to ASTM standards. The results shows that hybrid composites prepared by Jute and E-glass with vacuum bagging technique has better tensile and flexural strength as compared with hand layup technique. The microstructure of the above said hybrid composite material has been analyzed using SEM.

Keyword: *E-glass, Jute, Hand layup, Vacuum bagging,epoxy, Lapox L12.*

I. INTRODUCTION

Fiber reinforced polymer composites are being used in almost every type of applications in our daily life and its usage continues to grow at an impressive rate. Some of the applications are automobile, air-crafts and space crafts, sporting goods, domestic appliances etc. The interest in natural fiber-reinforced polymer composite materials is rapidly growing both in terms of their industrial applications and fundamental research. They are renewable, completely or partially recyclable, bio-degradable, eco-friendly, sustainable, and easily available. Natural fiber material mechanical properties make them an attractive ecological alternative to glass, carbon and man-made fibers used for the manufacturing of composites. The re-use of waste natural fibers as reinforcement for polymer is a sustainable option to the environment. Natural fibers are available naturally in the form of fiber and these are produced by plants, animals by the geological process. These natural fibers are eco-friendly, available in nature abundantly, even these fibers are renewable and economical. Due to these advantages the natural fiber composite materials have found many applications worldwide. Also, this has led to the opportunities and innovation in the material science and metallurgy. Due to the added advantage of renewable more and more companies are shifting towards natural fiber composite materials. Apart from renewable these fibers are low cost (i,e, one forth of glass fiber), lesser in weight and even these fibers can be recycled. In recent years, there is a growing interest in the use of bio-fibers as reinforcing components for thermoplastics and thermo-sets. It is generally accepted that the mechanical properties of the fiber reinforced polymer composites are controlled by factors such as nature of matrix, fiber-matrix interface, fiber volume or weight fraction, fiber aspect ratio etc.

II. HYBRID COMPOSITE MATERIAL FABRICATION

There are many techniques available in industries for manufacturing of composite material such as hand layup technique, compression technique, vacuum bagging, resin transfer molding etc. The hand lay-up process of manufacturing is one of the simplest and easiest methods for manufacturing composites. A primary advantage of the hand lay-up technique is to fabricate very large, complex parts with reduced manufacturing times. It is shown in fig. 1.

[Manjunath, 6(2): February 2019]
DOI- 10.5281/zenodo.2573837
ISSN 2348 – 8034
Impact Factor- 5.070

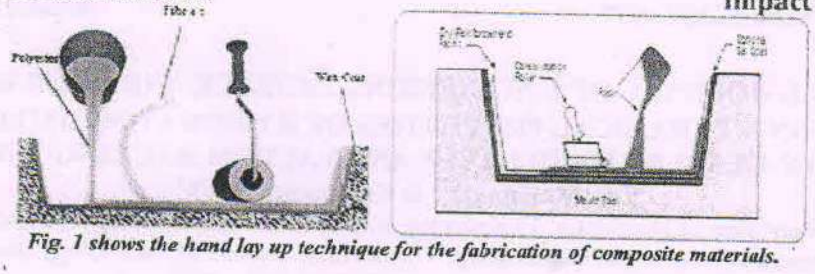

Fig. 1 shows the hand lay up technique for the fabrication of composite materials.

Vacuum bag molding is widely used in aerospace application for high performance components. This method produces high quality molds with complete elimination of voids and air bubbles. Due to this there is a substantial improvement in the inner surface which is not in contact with the mold. The curing process is done in a controlled environment to improve the quality and consistency. Fig.2 shows the vacuum bagging technique

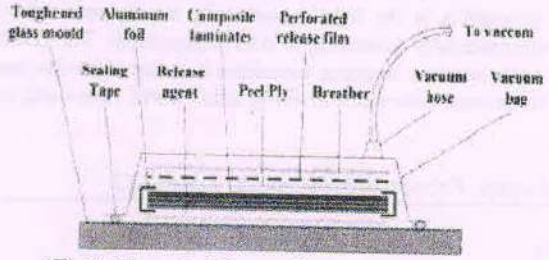

Fig.2 Shows the Vacuum bagging techique.

2.1 Experimental work

All experimental tests are carried out at Composite Technology Park Bangalore. All experimental tests were repeated to generate the data.

2.2. Tensile Test

Tensile is test is one of the fundamental test in material science in which the sample is subjected to a controlled tensile failure. The results are used to predict how the material will react under tensile loading. Some of the mechanical properties that are directly measured by tensile test are tensile strength, Young's modulus, yield strength. This test is commonly used for obtaining mechanical properties of isotropic materials. Fig.3 shows the UTM with tensile specimen.

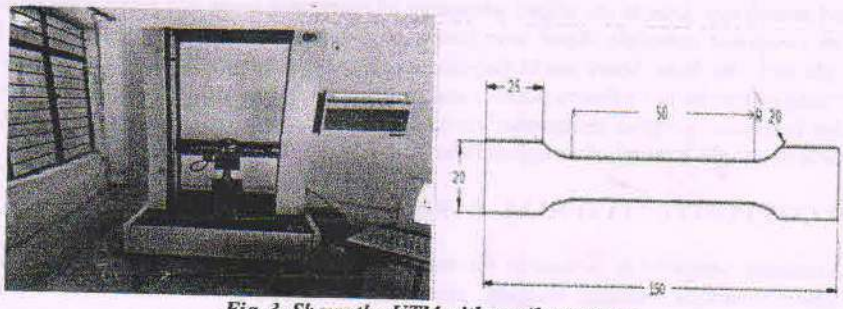

Fig. 3. Shows the UTM with tensile specimen

2.3 Flexural test

The three-point bending flexural test provides values for the modulus of elasticity in bending, flexural stress, flexural strain and the flexural stress–strain response of the material. The main advantage of a three-point flexural

STUDY ON DESALINATION AND CRONTROLLING OF HEAVY METAL ION POLLUTION USING GRAPHENE OXIDE

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ABSTRACT

Fresh water is most suitable to be converted into potable water but however most of it is inaccessible and the sources of fresh water are fast depleting due to various human activities, Desalination of sea water using Graphene Oxide (GO) can serve as the future of water source to ever growing population in the most efficient way possible. Removal of heavy metal ion pollution from the industrial waste using GO to reduce harmful effects.

Keywords:*Graphene Oxide, Selective Holes, Hydrophilic, Hydrophobic, Heavy metal ion*

I. INTRODUCTION

1.1 Fresh water availability

Water is a transparent, tasteless, odourless, and nearly colourless chemical substance, which is the main constituent of Earth's streams, lakes, and oceans, and the fluids of most living organisms. It is vital for all known forms of life, even though it provides no calories or organic nutrients. Water moves continually through the water cycle of evaporation, transpiration, condensation, precipitation, and runoff, usually reaching the sea. Water covers 71% of the Earth's surface, mostly in seas and oceans. Small portions of water occur as groundwater (1.7%), in the glaciers and the ice caps of Antarctica and Greenland (1.7%), and in the air as vapor, clouds (formed of ice and liquid water suspended in air), and precipitation (0.001%)[1].

Fresh water is any naturally occurring water except seawater and brackish water. Fresh water includes water in ice sheets, ice caps, glaciers, icebergs, bogs, ponds, lakes, rivers, streams, and even underground water called groundwater. Fresh water is generally characterized by having low concentrations of dissolved salts and other total dissolved solids.

Figure 1.shows availability fresh water and its form.Fresh water is not the same as potable water (or drinking water). Much of the earth's fresh water (on the surface and groundwater) is unsuitable for drinking without some treatment. Fresh water can easily become polluted by human activities or due to naturally occurring processes, such as erosion [1].

CONSTRUCTION OF INDOOR POSITONING SYSTEM USING TRILATERATION AND RFFI FINGERPRINTS

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ABSTRACT

In our day to day life, we use GPS to locate a person or unknown place. But this technology is limited for outdoors. Indoor positioning system[IPS] is a system to locate objects or people inside a building using lights, radio waves, Bluetooth, Wi-Fi, Li-fi, magnetic field, heat signature , or other sensory information collected by mobile devices. This technology is mainly useful in huge buildings such as airports, hospitals, offices, universities, museums, and so on. By using many higher technologies such as RF fingerprints, magnetic field RSSI, the result is more accurate.

Keywords*: GPS, Indoor Positioning System(IPS), Bluetooth low energy (BLE),Trilaterion, Raffi finger prints***I. INTRODUCTION**

1.1GPS

The Global Positioning System (GPS) is a space-based navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS. The GPS project was launched by the U.S. Department of Defense in 1973 for use by the United States military and became fully operational in 1995. [1]

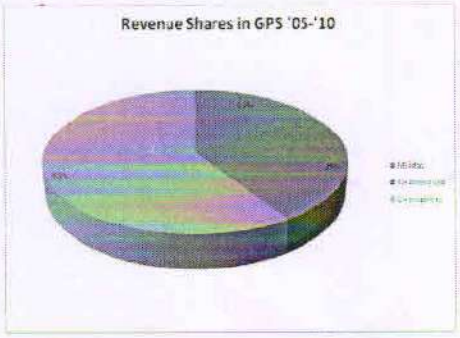

Fig.1Statistcs of application of GPS

EMISSION CONTROL AND FUEL EFFICIENT BY USING ARDUINO BASEDSELF-REGULATING BIOMASS STOVE

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ABSTRACT

For the improper combustion of the fuel it produces number of gases like CO_2,CO, $SO_x$and NO_x .Emission is the main problems while the biomass burning. Due to ovoid of emission need to adopt new technologies, in that mannerfabricating a Biomass Stove with a design that helps in efficient heat transfer of combustion gases and effective heat distribution of practical stoichiometric air helps in increasing stove efficiency. Usage of an open source electronic component called "ARDUINO" and flue gas sensors, the combustion process of biomass can be actuated and monitored effectively through "ARDUINO" without human interference. Thereby reducing the effect due to toxic vapors that results from incomplete combustion and increases the efficiency of the stove.

Keywords:*Arduino, Biomass stove, Emission control, Fuel efficient, Self-regulating stove*

I. INTRODUCTION

Reliance on biomass as primary energy source for cooking purpose,[1] Based on work done for *WEO-2002*, a database of the number of people relying on biomass as their primary fuel for cooking for each country in the *WEO* developing regions was built up using survey and census data, World Health Organization (WHO) data and direct correspondence with national administrations.

	Total population		Rural		Urban	
	%	million	%	million	%	million
Sub-Saharan Africa	76	575	93	413	58	162
North Africa	3	4	6	4	0.2	0.2
India	69	740	87	663	25	77
China	37	480	55	428	10	52
Indonesia	72	156	95	110	45	46
Rest of Asia	65	489	93	455	35	92
Brazil	13	23	53	16	5	8
Rest of Latin America	23	60	62	59	9	25
Total	52	2 528	83	2 147	23	461

Fig.1People Relying on Biomass Resources as their Primary Fuel for Cooking, 2004 [1]

Periodicals of Engineering and Natural Sciences
Vol.6, No.2, December 2018, pp. 295-301
Available online at: http://pen.ius.edu.ba

ISSN 2303-4521

Optimization of Process Parameters of Cryogenic Treatment on AL/AL$_2$O$_3$ MMCs by Taguchi Method for Tensile Strength.

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Article Info

Article history:

Received Mar 12th, 2018
Revised Jul 6th, 2018
Accepted Jul 29th, 2018

Keyword:

Cryogenic Treatment,
Taguchi Approach,
Composites,
Deep Freezing,
MMC

ABSTRACT

Engineering materials are given different types of treatment to impart desired properties to the materials to make them suitable for the intended application. The conventional method is heat treatment. It is being followed by many centuries but the treatment of materials below the room temperature is altogether a new concept to enhance the material properties. When the materials are subjected to deep freezing up to -196°C the change in the morphology results in the stability of microstructure & dimensions. Many researchers have proved the usefulness of cryogenic treatment on ferrous materials. But a very little amount of work has been found in the area of non-ferrous materials. Taguchi approach was applied to optimize the process parameters of cryogenic treatment on AR6061-Al2O3 MMCs. The results were experimentally validated. It is found that, the Taguchi approach can be used as an effective tool in optimizing the process variables to minimize the laborious effort in conduction of experiments.

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1. Introduction

MMCs are the most promising materials used as advanced materials in space, marine, aerospace and automobile industries due to their enriched properties [1]. The MMCs led to a new generation tailorable engineering materials with improved specific properties the structure and the properties of these composites are controlled by the size & type and of reinforcement and also the bonding nature [2].

Cryo treated MMCs showed very high hardness values, which are due to the formation of ternary phases at the temperatures of consolidation.

This work is aimed at optimization of the cryogenic treatment parameters like temperature and the duration of treatment for varying proportions of reinforcement. The most important robust technique for optimization is Taguchi method [3]. This approach provides a comprehensive understanding of the combined and individual process parameters. The number of simulation trials required will be reduced. This investigation was focused

A Comparative Analysis of RSA and BAES for MANET Routing Protocols

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***Abstract*—** The drastic up rise in exchange of data, digitally in Mobile Adhoc network, leads to a major concern of secure data mobility in the network. This paper introduces security extinction to AES cipher, Biometric Advanced Encryption Standard (BAES). BAES is an amalgamation of biometric as key to AES with. The paper includes comparative analysis of RSA and BAES ciphers. Also the paper throws light on the polarities between the two ciphers using Avalanche effect, time complexity and memory utilized efficiency determining parameters

Keywords— *AES, MANET, RSA, BAES, Fingerprint, Biometric.*

I. INTRODUCTION

Mobile Adhoc Network (MANET) is a genre of networks which has non static and self configuring nature. Secure data mobility in such non static, decentralized network is a challenging task. Any intruder can effortlessly launch malicious attacks in such networks with no firewall. To secure data from active and passive attacks is a confronting assignment. Therefore optimum schema is to exploit the concept of cryptography and its ciphers, in encrypting the data before transmission. This is the leading motivation in designing new ciphers, with reduced complexities. Study of literature provides a bird view into adequate number of ciphers and their applications. Ciphers can be classified as symmetric and asymmetric ciphers.

Asymmetric ciphers are known to use two keys for encryption, public key and private key. Private key is private to the user, whereas public key is the shared key in the network. RSA is the cipher which can represent asymmetric ciphers genre and is most widely used asymmetric cipher. The major limitation in using asymmetric key ciphers in MANET is their high power utilization factor, with medium security provided.

Symmetric ciphers have only one shared secret key. Secret key is provided to the users when he registers with the network. Also it can be exchanged between nodes, after the authentication process and before start of any session. AES is the most popular and widely used symmetric ciphers. Comparatively symmetric ciphers prove as best since the usage of power by these ciphers is optimum in networks such as MANET s where the resources are limited.

Every genre of ciphers has their own leads and limitations [1]. Here we design a cryptographic method Biometric Advanced Encryption Standard (BAES), which is a minor addition to the sphere of ciphers. Cipher efficiency parameters such as memory utilized, time taken and Avalanche effect are considered, to analyze BAES and compare it with RSA.

II. LITERATURE SURVEY

Septimiu Fabian Mare, et al. introduced a robust steganography-based communication system using RSA and AES ciphers, together with steganography. The key used for data encryption uses a combination of randomly generated sequence and a hash of cover image's color information. The proposed steganographic algorithm introduces steganography as an additional security level and avoids advanced reverse engineering techniques [3].

Jong Yeon Park et al. described unknown and interesting characteristics of ghost key patterns using real experiments [4]. They explained about the ghost key by selected bits. Also they stated that knowledge of ghost key patterns can be a useful tool to analyze enhanced scenarios and its countermeasures.

Michael Bourg et al. proposed an RSA based biometric encryption system which can be realized on Field Programmable Gate Arrays [5]. They showed that biometric is one of the safest form of privacy and security.

Asma Chaouch et al. programmed a flexible encrypting algorithm for encrypting text and compressed images. It was based on RSA, AES and elliptic-curves methods [6]. Also they provided a fair comparison between the three methods under study, considering the parameters like key size, block size and speed.

Amish Kumar et al. presented an efficient implementation of AES on MATLAB platform. They provided an explanation to Avalanche effect in AES [2].

III. RIVEST SHAMIR ADLEMAN

RSA is one of the first successful responses developed by Ron Rivest, Adi Shamir, and Len Adleman at MIT. It was developed to overcome the challenges faced in public key cryptography. RSA is best illustrated in fig.1.

RSA cipher uses two primes with Euler's totient function to obtain the value of variable 'n'. Plain text is transformed to cipher text by raising plain text to power of encryption key 'e'. Encryption key is public key of the destination node to which cipher text needs to be transmitted. The destination node uses

BRIDGE MONITORING SYSTEM

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Abstract : In recent time maintenance of structures has gained its importance. Bridge collapsing being a major issue shows us the need to monitor its condition. In this paper we propose a continuous monitoring system to know its condition. A sensor network is deployed to capture data from the changing bridge environment, the data is stored and monitored. Further a web application is developed to display a messages over any unpleasant changes in bridge condition.

Index Terms **- Structural Health Monitoring, Bridge Monitoring, Load, Structural bend, Vibrations, Flood Detection.**

I. INTRODUCTION

In many countries, a lot of bridges have exceeded their life span of 50- years. Old bridges cannot face to the severe nature disasters. In other words, these bridges in such countries are likely to suffer from severe damage due to aging or occurrence of natural disasters. Many bridges built on the river are subject to deterioration as their lifetime is expired but they are still in use. They are dangerous to bridge users. Due to heavy load of vehicles, high water level or pressure, heavy rains these bridges may collapse which in turn leads to disaster.

Bridges are important aspect of country's transport but are expensive to build and maintain. Sometimes minute fault inside the structure might affect whole body which would lead to collapse of the structure which might create a significant loss of property and human lives. To avoid these mishaps monitoring is necessary. Structural Health Monitoring (SHM) mainly aims to detect, locate and quantify damage happening to structure by the acquisition of data measured by sensors on the bridge. The SHM systems can also be used for other purposes, such as load estimation (e.g. traffic, wind), monitoring of construction and repair work, and to validate design assumptions regarding the static and dynamic behavior of the structure[2].

The government generally appoints an engineer who uses the method of visual inspection of structures for every 2-3 years. This method needs to be improvised. A new technology can be invoked with the help of different methods to deal with the bridges & structural monitoring in a more secure way[4]. Bridge monitoring system is necessary to understand the structural behavior and to pay a support for betterment of structural conditions . It helps in early damage detection which would reduce the cost of repair.

II. PROPOSED APPROACH

There are few major parameters those affect the structure's condition. The proposed system monitors four different parameters like load upon the bridge using a loadcell, detecting structural bend using a flex sensors, vibrations using accelerometer, water level detection using moisture sensor. All the sensor data is read to file and is further sent to a server using internet. The authenticated user shall login to the web page which shall display messages about the condition of the structure.

2.1 HARDWARE

Load Detection : We use a single point load cell to measure the load put upon the bridge [1]. The load cell is located under a platform that is loaded with a weight from above, that can be the pier of the bridge. The dead load is said to be neglected as it can be less in new structures but more in the older ones due to the factor called aging. The live loads such as traffic, human weight etc., is being measured.

Structural Bends : Flex sensors are sensors that change in resistance depending on the amount of bend on the sensor. They convert the change in bend to electrical resistance - the more the bend, the more the resistance value. These sensors can be positioned at desired spots over the bridge. Any sensitive area that can develop a structural bend due to damage must be recognized and the flex sensor placed in that position would help recognizing the bend in that part of the structure.

Vibration detection : Accelerometer ADXL335 is used to detect dynamic or damp free vibrations [5]. ADXL is a 3-axis accelerometer measuring X, Y and Z axis. The averaged measurement of all axis values would give a single dimensional output which would show major variations in its value upon major displacement in structure or any high vibrations.

Flood detection or Water level Monitoring : Moisture sensor with an onboard LM393 chip is being used. This sensor consists of a potentiometer using which the range of detection can be set. A digital output of either 0 or 1 is given out by digital output pin. The sensor uses an active low logic. The sensor consists of two probes that can sense the water level. The comparator compares the values given of both probes and gives out the larger one as the output. It has an option of both digital and analog output.

IJCSE International Journal of Computer Sciences and Engineering Open Access
Research Paper Vol.-7, Issue-6, June 2019 E-ISSN: 2347-2693

Performance Analysis of Array Multipliers Using Different Logic Configurations

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DOI: https://doi.org/10.26438/ijcse/v7i6.303306 | Available online at: www.ijcseonline.org

Accepted: 13/Jun/2019, Published: 30/Jun/2019

Abstract - Power and speed are the two important design aspects that impact the designing of any circuits. One of the most widely used arithmetic operation in digital circuits is Multiplication. There are different Multipliers designed depending on the speed and the hardware. There are different technologies with different features. In this paper 4- bit and 8- bit Array Multipliers are been designed using different designing techniques. The Multipliers are designed using CMOS Logic Configuration, Pseudo-NMOS Logic Configuration and Transmission gate Logic Configuration and are compared in terms of Power and delay. The Power Delay Product (PDP) gives the overall performance of the Multipliers.

Keywords - Multiplier, CMOS Logic, Pseudo-NMOS Logic, Transmission Gate Logic, Power, Delay.

I. INTRODUCTION

Multiplication plays an important role in digital circuits. Adders and Multipliers are the two basic building blocks of any digital circuits. The two basic operation of Multiplication process is:

1. Generation of Partial Products.
2. Accumulation of the products.

The basic Multiplication process is the add and shift algorithm. The partial products are generated using the AND gates and these products are accumulated using the adders. Therefore by reducing the number of partial products or by accelerating the accumulation the multiplication operation can be speeded up. In this paper the Multipliers are constructed using CMOS, Pseudo-NMOS, and Transmission Gate logic configuration and are compared in terms of power and delay.

The paper is organised as follows: Section II provides the introduction for designing the Multipliers. Section III gives the various designing algorithms. The Power dissipation details are provided in Section IV. Comparison of the Multipliers based on different designing techniques is shown in Section V. Section VI gives out the final conclusion based on results obtained.

II. MULTIPLIER & DESIGNING

Multipliers play an important role in arithmetic operations. They are most commonly used in Arithmetic and Logic units, Filters, DSP applications, Processors.

A. Array Multipliers

The array Multiplier originates from the multiplication parallelogram. Multiplier is based on the add and shift on multiplication of the multiplicand with one multiplier bit. The length of the multiplier is represented by the number of rows and the width of width of each row represents the width of the multiplicand. The parallel adders receive the partial product inputs and the carry out is propagated into the next rows. The critical path delay consists of the horizontal and vertical terms. This delay consists of both adder delay and gate delay. The basic block diagram of 4 bit multiplier is shown in fig 1.

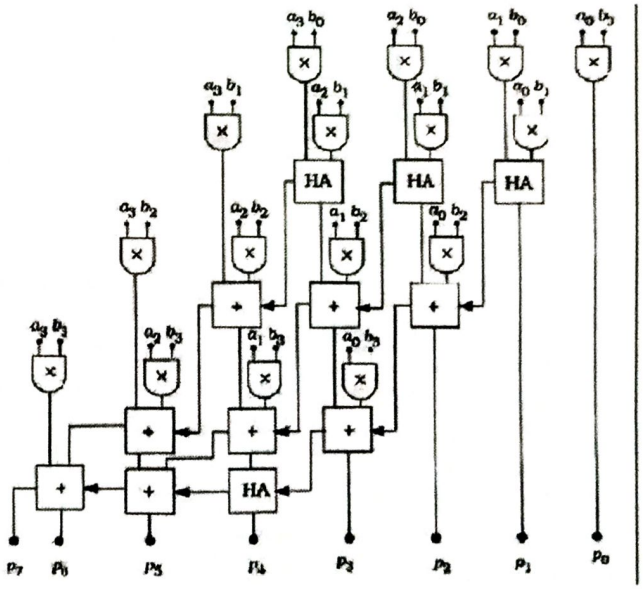

Fig 1. 4 bit unsigned array Multiplier.

