3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the year.

Academic Year	Description	Page Number
2021-2022	Journal Papers	2

DATA MINING TECHNIQUES FOR IDENTIFYING STRATEGIES FOR PRODUCTIVE AGRICULTURE SOLUTIONS

M. Sumi, S. Manju Priya*

Abstract

Agriculture is the inspiration of the country wide economy, and it performs a crucial position in its growth. Data mining permits farmers to become aware of doubtlessly exciting and unknown styles in huge extent of datasets. Data mining has been engaged with exclusive type of fields which includes medicine, brilliant markets and education. Data mining makes use of taking choices associated with numerous troubles in agricultural subject. Data mining permits farmers to become aware of doubtlessly exciting and unknown styles in huge extent of datasets. Due to farming's need on mined data sources, land and water resources, as well as experts, mining and agricultural are inextricably linked. Additionally, there are employing implications pertaining to areas where mining business acted as a basis to promote agrarian improvement. This collaboration seems to have a variety of effects. There is a warning sign that agri business is growing due to mining in certain areas while decreasing in other, according to the situation in the neighbourhood.

Keywords: Datamining, Agriculture, Association, Clustering, Classification, Regression, K-Means Approach, KNN, Biclustering

I INTRODUCTION

Detaining is a technique that employs Artificial Intelligence, machine learning, statistics and database system to look for patterns in large amount of data. It permits farmers with the resource of the usage of providing historic agricultural output statistics further to a projection, assisting [illegible] management. Data mining is identifying and visualizing the pattern in massive quantity of datasets. The purpose is defining as precise know-how from massive records set, examine the ones records and remodel the ones records to shape of human comprehensible for further use. When studying the records set keep in mind the distinct perspectives in awesome way and do not have any problem approach to examine the records. Descriptive and Predictive records mining are awesome instructions in records mining to classify the records. Descriptive records mining set out the records regular with latest homes and Predictive records mining permits to be waiting for future values considered the past results. The temperature, soil, water, plant, horticulture plants, medicinal plants, animals and other aspects of Indian agriculture are all quite unique.[1][2]. In India, rural productivities are uncertain since agriculture is copying with the challenge of converting with internal sources, which may be simultaneously reducing crop production.

II METHODOLOGY

The different kinds of algorithms are:

(i) **Association:** Association is an information mining task that determines the possibility of objects in an accumulation coexisting. Association rules express the relationships between occurring events. Association rules are frequently used to examine transaction changes.

(ii) **Clustering:** Identifies group of knowledge questions that are each comparable to one another in same way. They differ from members to other groups; group members are nearly identical to one another. In order to find high quality clustering with a low between-group similarity and high internal likeness, the goal of cluster analysis is to identify high quality bunches. Half of the

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AN ASSESSMENT MODEL FOR THE PREDICTION AND ANALYSIS OF IVF USING APPLICATION OF MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE TECHNIQUES

P. Divya, K. Anuradha*

Abstract

Infertility is the amalgam of aspects that put a stop to pregnancy that is, it is a condition in which you cannot get pregnant after one year of trying to conceive. It involves a lot of care and expertise while choosing the best fetus that leads to a successful pregnancy. Assistive reproductive technology (ART) helps to solve this problem. In vitro fertilization (IVF) is one of the most popular forms of ART. Artificial intelligence plays a digital revolution and numerous advances in the field of reproductive medicine and eventually provides huge benefits to infertile victims. The main purpose of this article is to focus on methods that can predict pregnancy with high accuracy without human intervention. It provides fruitful lessons learned using machine learning methods. This makes it easier for the physicians to understand the behavior of the treatment. Blastocyst images are being distributed to detect and predict the best embryo possible for a successful pregnancy. This pioneer service gives an idea of how the ministry can benefit the next generation.

Keywords: Embryo Grading, Blastocyst, Embryo Selection, IVF, Artificial Intelligence, Machine Learning Techniques, Deep Learning, Neural Networks, ART

I INTRODUCTION

IVF, or in vitro fertilisation, is used in assistive reproduction for the past years. Following that, IVF has numerous important advancements, including the transition to single embryo transfers and extended embryo culture at physiological oxygen levels. IVF patients may suffer from miscarriages. However, many infertile patients find that the road to motherhood through IVF is a time-consuming, emotionally taxing, and financially difficult journey. Research is primarily focused on finding ways to increase the existing 30% success rate of IVF [1]. Other areas that could use improvement include patient-specific treatment plans, better eggs, embryo selection, enhanced endometrial receptivity, and early pregnancy care techniques.

The entire IVF journey starts with the embryologist playing an important role in the pre-diagnosis stages of a couple receiving IVF treatment by setting up reproductive assistance and clinical support provided by fertility consultants. The second stage involves the culturing of sperm, eggs, and embryos, which are inspected under medical conditions. The main purpose of this stage is to understand, plan, and manage the defects that is investigated prior to the next fertilization. Next, embryologists who examine the embryo morphology perform procedures such as embryo grading, embryo freezing, and selecting the best embryos for implantation. A cycle is the processing of an embryo for fertilization. Embryologists then freeze the embryos until successful outcomes are obtained. An IVF procedure cannot be performed if implantation failure occurs even after repeated embryo transfers. Manual embryo grading is a mind-numbing and time-consuming job. It would be easier if a machine can perform this process without human intervention. With this in mind, using AI and deep learning techniques, it is very helpful in finding the best embryo that can be induced.

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DETECTION OF CREDIT CARD FRAUD USING QUERY BASED ALGORITHM

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Abstract: - Data mining techniques have been used extensively to detect insurance fraud and financial fraud, which is a growing area of tremendous importance. Financial deception will pay special attention to spotting fraudulent credit card transactions. Credit utilisation Due to significant advancements in internet commerce, the use of credit cards has expanded dramatically. Technology. Credit cards have become the most popular method of payment for both online and offline purchases. As with any ordinary purchase, the number of incidences of fraud related with it is increasing by the day. In this Using a Hidden Markov Model to sequence operations in credit card transaction processing (HMM) and demonstrate how it might be used to detect fraud. Initially, an HMM is trained with a cardholder's regular behaviour. An incoming credit card transaction is considered fraudulent if the trained model does not accept it with a high enough probability. It also ensures that legitimate transactions are not denied. Credit cards are one of the most convenient methods of payment when shopping online. Payment is made by providing information such as the card number, security code, and expiration date of the credit card while shopping online. Every cardholder's spending method is modelled using HMM to correct the risk elements of using the credit card. Data encryption is commonly used to protect sensitive data from security threats such as "attacks on confidentiality. "In the present, Large text messages need a long time to encrypt before they can be transferred, causing a delay in subsequent information transmission. Security dangers include those that occur during the transmission of secret information across insecure communication networks.

Keyword - Computer Science Cybernetics, Credit Card Fraud, False Positive, Fraud Detection System, Thresh hold value QBA encryption, True Positive.

I. INTRODUCTION

In credit card transactions, 'fraud' refers to the unlawful and unwelcome use of an account by someone other than the account owner. To stop this misuse, necessary preventative steps should be adopted, and the behaviour of such fraudulent acts can be analysed to decrease it and defend against future occurrences. In other words, credit card fraud occurs when a person uses another person's credit card for personal gain while the card's owner and issuing authorities are ignorant.

1.Fraud Detection System

Fraud is defined as improper or criminal deception intended to achieve monetary or personal advantage or to harm another person without necessarily resulting in immediate legal consequences. The fraught hindrance and fraud detection systems are the two basic strategies for preventing frauds and losses due to fraudulent activity. Fraud prevention is a proactive strategy aimed at reducing the prevalence of fraud. Once the fraudsters have overcome the fraud deterrent measures and have begun deceptive dealings, fraud detection systems come into play. MasterCard fraud can take several forms, including direct thievery, application fraud, and counterfeit cards (where the cardboard holder absence). In on-line fraud, communications are formed remotely and solely where the card's details are required. A manual signature, a PIN or a card imprint don't seem to be needed at the time of purchase, though hindrance mechanisms like CHIP&PIN decrease the fallacious activities through straightforward thieving, counterfeit cards and NRI. Online frauds (Internet and order frauds) are still increasing in each quantity and range of transactions. There has been a growing quantity of monetary losses to MasterCard frauds because the usages of the credit cards become a lot and lot of common things.

2.Introduction to Data Mining

Extraction of hidden predictive information from massive datasets is a strong new technology that has a lot of promise for helping firms focus on the most critical data in their data warehouses. By allowing enterprises and knowledge-driven decisions, data mining technologies will be able to forecast future trends and behaviours with ease. Data mining's automated and prospective analysis go beyond the retrospective analysis provided by retrospective methods. As a result, data mining technologies can answer all of the business issues that were before difficult to answer. They explore databases for hidden patterns and uncover predicted data that experts may overlook because it falls outside of their assumptions. The majority of businesses now collect and refine vast amounts of data.

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HANDS ON INDUSTRIAL INTERNET OF THINGS:USING INDUSTRY 4.0 BUILD ASTRONG INDUSTRIAL INTERNET OF THINGS INFRASTRUCTURE

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ABSTRACT : The industrial internet of things refers to the expansion and implementation of the internet of things (IoT) in industrial sectors and applications (IIoT). By focusing on machine-to-machine (M2M) connectivity, big data, and machine learning, the IIoT allows industries and businesses to increase their efficiency and dependability in their operations. Robotics, medical devices, and software-defined manufacturing processes all fall under the Industrial Internet of Things umbrella.

Keywords : IoT, information technology, operational technology, industry 4.0, security operations center

1. INTRODUCTION

In the manufacturing business, the phrase "industrial Internet of things" (IIoT) is widely used to refer to the IoT's industrial subset. In recent years, a wide range of industrial IoT applications have been developed and deployed. Internet of Things advancements can enhance industrial processes, supply chains, products, and services. This is because it specifically includes the function of products and services, as well as industrial processes and activities, in its scope.

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A SURVEY ON SILENT SOUND TECHNOLOGY USING ELECTROMYOGRAPHY AND IMAGE PROCESSING

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Abstract: Everyone has the experience of speaking loudly on the phone during a violent incident while traveling by train or bus. I no longer need to shout for this purpose. It would certainly be a good solution for those who feel frustrated when others speak loudly over the phone. "Silent Sound Technology" aims to recognize all the movements of the lips and convert them into sounds, which can help speechless people to speak, and allow people to make silent calls without disturbing others. Instead of making any noise, your handset will determine the movement of your mouth by measuring muscle activity, and this translates into speech that no one can hear. So, basically, it reads your lips. This new technology will be very useful whenever someone loses voice when speaking or allows people to make silent calls without interrupting others, even we can tell our PIN number to a trusted friend or relative without listening. On the other hand, the listener may hear a clear voice. An amazing feature added to this technology is the "fast polyglot" which can be quickly translated into the language of the user's choice. This translation works for languages such as English, French, and German ".Silent sound technology is an excellent solution for those who have lost their voice but wish to communicate by telephone. This technology allows people to make calls without producing sounds. Developed at Karlsruhe Institute of Technology. This technology basically detects every movement of the lips and internally converts electrical pulses into sound signals and transmits separation to all other surrounding sounds. techniques used to detect trivial sounds, namely electromyography and image processing. This study reviews the future of technological advances that are rapidly changing in the preferred language but. in languages such as different Chinese tones can capture many different meanings. This technology is 99% effective, can be seen on the market for another 5-10 years, and will be used in everyday technology

IndexTerms - Electromyography, muscle movement, electrical pulses, image processing.

I. INTRODUCTION

Silence is the best solution for all situations even with your smartphone. The term mobile phone has become a very popular word in the telecommunications industry. There are many technologies that try to reduce noise pollution and make the environment a better place to live. The new technology is called Silent Sound Technology which will eliminate noise pollution. You are in the theater or in a noisy restaurant or on the bus etc. when there is the noise it becomes a big problem when talking on cell phones. But in the future, this problem will be solved with quiet sounds, a new technology that transforms the movement of the lips into a computer-generated voice on the other side of the phone. This technology aims to monitor the movement of the lips and convert them into computer sounds that can be transmitted over the telephone. So the person on the other side of the phone gets voice information. The concept of "Silent Sound" Technology aims to identify moving lips and transform them into sounds, which can help speaking people to speak, and allow people to make silent calls outside without harassing others. In everyone's life, there will be a situation where we just shout and pass a message on the phone because of the loud noise in the background interrupting the people around us and the receiver on the phone and ultimately we all fail in everyone's life there. it has been a situation where we shout just to pass a message on the phone because of the loud noise in the background to convey the message we wanted to convey.To overcome this situation "Silent sound technology is used. Silent audio technology is a technology that helps you transmit information without using your vocal cords. This technology is intended to provide a solution for those who have lost their voice for some reason and the elderly. This technology is useful if someone wants to pass on a confidential message to a trusted person in a critical situation. It can be used by CID officers in their undercover activities. It can also be used in the field of biomedical. By using this technology the listener can hear a clear voice. By using this technology they

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ARTIFICIAL NEURAL NETWORK-BASED MACHINE LEARNING FOR WIRELESS NETWORKS

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Abstract : For the correctly offer extremely dependable low latency communications and pervasive connectivity for net of things (IoT) devices, next-technology wi-fi networks can leverage clever, records-driven functions enabled by using the integration of system studying notions throughout the wireless middle and aspect infrastructure. on this context, this paper gives a comprehensive overviews how synthetic neural networks (ANNs)-based totally device learning algorithms may be employed for fixing numerous wi-fi networking issues. For this cause, gift a detailed overview of a number of key sorts of ANNs that consist of recurrent, spiking, and deep neural networks, which might be pertinent to wireless networking applications. For every form of ANN, present the basic structure in addition to precise examples that are particularly vital for wireless community layout. Such examples consist of echo kingdom networks, liquid state system, and lengthy short term reminiscence. and then, provide an in-intensity review on the style of wi-fi communication troubles that may be addressed the use of ANNs, starting from communique the usage of unmanned aerial vehicles to virtual truth programs over wi-fi networks and aspect computing and caching. For each character utility, present the principle motivation for using ANNs along side the related demanding situations whilst provide a detailed instance for a use case state of affairs and outline destiny works that can be addressed the use of ANNs. In a nutshell, this newsletter constitutes the primary holistic educational at the improvement of ANN-based totally system getting to know techniques tailored to the wishes of future wireless networks.

IndexTerms - Reccurent Neural Network, Spiking Neural Network, Deep NeuralNetwork,LSTM,echo spectrum network

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I. INTRODUCTION

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IMPROVING PRIVACY AND SECURITY IN MULTITENANT CLOUD ERP SYSTEMS

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Abstract: *This paper discusses cloud ERP security challenges and their existing solutions. Initially, a set of definitions associated with ERP systems, cloud computing, and multi-tenancy, along with their respective challenges and issues regarding security and privacy, are provided. Next, a set of security challenges is listed, discussed, and mapped to the existing solutions to solve these problems. This thesis aims to build an effective approach to the cloud ERP security management model in terms of data storage, data virtualization, data isolation, and access security in cloud ERP. The following proposed techniques are used to improve the security for multi-tenant SaaS: database virtualization, implementation of data encryption and search functionality on databases and developed systems, distribution of data between tenant and ERP providers, secure application deployment in multitenant environments, implementation of the authentication and developed systems together as two-factor authentication, and improved user access control for multi-tenant ERP clouds.*

Index Terms *- ERP, ERP System, ERP Problems, ERP Security Challenges, ERP Security Solutions, ERP and Cloud Computing*

I.INTRODUCTION

This section focuses on a new recommended paradigm for safeguarding cloud enterprise resource planning (ERP)system. The primary focus is on the services provided by SaaS, PaaS, and IaaS in order to analyse the major difficulties and problems associated with the security and privacy thereof. The current study provides an indepth understanding of the cloud-based ERP and the multi-tenancy architecture. Furthermore, this research addresses the issue of how to improve the privacy and security in a multi-tenant cloud system for higher education .our main concerns are data storage security and user authentication . This study aims to investigate and discuss the potential security issues and challenges arising from cloud ERP and list some existing solutions.

In addition, the contributions of this paper are:

1) It provides an overview of cloud computing services models ,techniques and requirements

2) Recognizing the relationship between cloud computing security issues and cloud computing models;

3) Recognizing the dangers, success factors, advantages and primary drivers of ERP clouding

4) Discussing major issues of infrastructure security in cloud ERP;

5) Improving data storage and access security in cloud ERP;

6) Improving application security in cloud ERP;

7) Proposing cloud computing data storage that is adaptable

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Face Restoration Using Generative Facial Prior (GFP)

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Abstract: Blind face restoration algorithm is totally on based on facial priors, which defines on facial geometry in advance or reference in advance, to restore sensible and dedicated data. However, very low-fine inputs cannot offer accurate geometric in advance whilst high-quality references are inaccessible, restricting the applicability in real-international scenarios. In this work, we advocate GFP-GAN that leverages rich and several priors encapsulated in a pre-trained face GAN for blind face restoration. n. This Generative Facial Prior (GFP) is incorporated into the face restoration approach via novel channel-split spatial characteristic redesign layers, which allow our approach to gather an superb balance of realness and fidelity. Thanks to the powerful generative facial in advance and touchy designs, our GFP-GAN may also need to together restore facial data and enhance sun sunglasses with best a single beforehand pass, whilst GAN inversion techniques require costly image-specific optimization at inference. Extensive experiments display that our technique achieves advanced not unusual place standard overall performance to earlier art work on each artificial and real-global datasets .

KEYWORDS: Image Restoration, Face Restoration, Generative Priors, Channel Split Operation, Local Component Discriminators

I. Introduction

The major goal of Blind face restoration is to recover great faces from the low-excellent contrary numbers affected by unknown degradation, which incorporates low-decision, distortion, noise etc. Previous works generally make the most face-precise priors in face recuperation, which includes facial landmarks, parsing maps, facial element heat maps, and display that the one's geometry facial priors are pivotal to get better correct face form and info. However, one's priors are typically predicted from entered pictures. In addition, no matter their semantic guidance, the above priors comprise confined texture data for restoring facial info (e.g., eye pupil).

Another set of methods investigates reference priors, i.e., first-rate guided faces or facial issue dictionaries, to generate sensible results and alleviate the dependency on degraded inputs. However, the inaccessibility of excessive-decision references limits its sensible applicability, at the same time as the confined potential of dictionaries restricts its range and richness of facial info. In this study, we leverage Generative Facial Prior (GFP) for real-international blind face recovery, i.e., the previous implicitly encapsulated in pre-trained face Generative Adversarial Network (GAN) fashions consisting of Style GAN. These face GANs can produce honest faces with an immoderate degree of variability, thereby providing wealthy and several priors along with geometry, facial textures and colors, making it feasible to the equal time to restore facial data and readorning colors. Previous tries normally use GAN inversion. The first 'invert' the degraded picture lower back to a latent code of the pre-trained GAN, after which behavior costly picture particular optimization to reconstruct pix. Despite visually sensible outputs, they generally produce pix with low fidelity because the low-size latent codes are inadequate for manual correct recovery.

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THE PATH TO GLOBAL BROADBAND ACCESS IN RURAL AREAS USING DAKNET TECHNOLOGIES

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Abstract : DakNet offers extremely low-cost digital communication, allowing distant villages to skip over the costs of traditional connectivity solutions and start building a full-coverage broadband wireless infrastructure. DakNet, an ad hoc network that leverages wireless technology to deliver asynchronous digital connectivity, is proof that combining wireless and asynchronous services could pave the way to universal broadband connectivity. This article briefly discusses what DakNet is, how wireless technology is implemented with DakNet, its essential operations and uses, benefits and drawbacks.

IndexTerms - Mobile access point, Hub, Kisok.

I INTRODUCTION

Many developing countries are still grappling with how to improve rural and remote access to information and communication technologies (ICTs). Due to high infrastructure costs, low population density, and limited ability to pay for services, telecommunication firms are frequently hesitant to expand their networks. First Mile Solutions (FMS) addresses this issue through supplying telecommunications system that makes use of new era known as DakNet to attach rural and remote populations to the Internet at a low cost. DakNet is a wi-fi community that offers virtual connectivity in addition to ad-hoc networking. DakNet is a wireless network that provides digital connectivity as well as ad-hoc networking. DakNet provides digital connectivity by utilizing existing transportation and communication infrastructure. "Dak" is a Hindi word which means "post" in English and was the traditional means of communication.

II. LITERATURE SURVEY

Alex (Sandy) Pentland is a Toshiba Professor of Media Arts and Sciences at MIT and cofounder of MIT Media Laboratory's Digital Nations consortium, the Media Lab Asia in India, the LINCOS venture in Costa Rica, and the Center for Future Health. His paintings encompass wearable computing, communications generation for growing countries, human-device interfaces, synthetic intelligence, and device perception. Pentland is likewise a cofounder of the IEEE Computer Society's Wearable Information Systems Technical Committee, and he has

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HONEYPOTS-REALIZATION AND TESTING OF COMPUTERIZED ASSAULT

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Abstract: Honeypots be a thrilling novel technology. They let us to turn the tables on the terrible guys. In the times of yore many existence there has been rising interest in accurately what this technology is plus how it workings. A honeypot is utilized in the measurement of mainframe and Internet security. It is a starting place, which is proposed to be attack and programmed to enlarge additional information regarding the attacker, and used tools. One purpose of this paper is to give you an idea about the possibilities of honeypots and their use in Investigate as well as productive environment. Compare to an interference detection system, honeypots include the gigantic plus that they do not create fake alerts as each practical traffic is doubtful, for the reason that no productive components are running in the system.

IndexTerms - Honeypot, Network Security, LIHP, MIHP, HIHP, DarkNOC

I. INTRODUCTION

The Internet is on the increase express and doubling-up its quantity of websites all 53 days and the quantity of citizens via the internet is as well mounting. That's why, overall statement is getting in addition significant every one of day. Counter actions are developed to become aware of or thwart attacks - the majority of these actions are base on known information, known attack pattern. Counter measures such as firewalls and net interruption recognition systems are base on avoidance, recognition and effect mechanism; but is there adequate information concerning the opponent?

As in the forces, it is significant to recognize, who the opponent is, what category of approach he use, what tools he utilize and what he is aim for. Assembly this category of information is not clear-cut other than significant. By knowing attack strategy, countermeasure examine be enhanced and vulnerabilities can be preset. To assemble about as to a vast scope information as achievable is one central part intention of a honeypot. In all-purpose, such in order collect should be done with no a resonance, with no troubling an attacker. All the gather information leads to an plus on the defensive side and can hence be use on productive systems to avoid attacks.

A honeypot is mostly a mechanism for information gather and learn. Its most important function is not to be an trap for the blackhat society to grab them in action and to move forward charge alongside them. The focal point deceit on a calm down gather of as a large amount information as achievable about their assault pattern, use programs, intention of attack and the blackhat the people itself. All this information is use to learn extra about the blackhat procedures and motives, as well as their technical facts and ability. This is in a minute a major point of a honeypot. There are a set of additional potential for a honeypot – divert hackers from dynamic systems or grab a hacker at the equivalent time as hold out an physical attack are in a miniature two sensible case. They are not the just right clarification for solving or prevent computer crimes.

Honeypots are rigid to keep up and they have to operators with excellent knowledge about operating systems and network safety. In the truthful hands, a honeypot be familiar with how toward be an central tool for in order gather. In the immoral, unexperienced hands, a honeypot can turn into a different infiltrate machine and an gadget for the blackhat group of people.

TYPES OF HONEYPOTS:

A production honeypot is make use of to ease shift approximately hazard in an group at the identical time as the successive set, is intended to bring together as a good quality arrangement information as practical. These honeypots make not fix in the least precautions importance to an creation, except they know how to make possible to be responsive of the blackhat area and their attacks as well as to put together a quantity of enhanced coastal defenses next to security threats. A appropriately construct honeypot is lay on a network, which intimately monitors the traffic to and from the honeypot.

A research honeypot, as the name put forward, these types of honeypots are exclusively used in the explore areas. The core aspire here is to get a hold upper limit information regarding the blackhats by give them full right to use to break in the security system and penetrate it. By allow such an right to use to blackhats, it's straightforward to be acquainted with about the tools used and further correlated information regarding them.

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UNDERSTANDING THE APPLICATION OF DIGITAL TWIN TECHNOLOGY IN DIFFERENT FIELDS

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Abstract : A digital twin is a technology which represents real-life objects or devices virtually . It is similar to 3D renderings of computer-aided design (CAD) models. But the main difference between digital twins differ and simple 3D models is that, digital twin technology also combines the physical elements and the dynamics of how that object or device operates in the real world. In other words, we can see, almost in real time, precisely how an object or device responds throughout its lifecycle. Just as an asset moves in response to factors such as climate, ambient temperature, user idiosyncrasies and so on, so does its digital twin. Digital twins do this by combining data collected from sensors on the device, with knowledge related to the design, build, operation and servicing of the physical twin. Already, just from this data, we can have a rich, highly detailed picture of the asset. Intelligence, in the form of mathematics, physics, and machine learning and then building on data, has acted as a 'brain' of digital twin technology and performs things like model prediction, development and early warning systems happen. Multiple forms of digital transformation are imminent. Digital Twins represent one concept. It grows because it can give real visibility. The rapid spread of digital twin is facing obstacles due to the lack of semantic interaction between structures, levels and ontologies. The technology required for automatic detection is lacking. The continuity of the forum depends on the combination of information technology, operational and communication technology with protocol-agnostic. Making sense of the data, ability to curate data and perform data analytics at the edge is key to value. Delivering engines to the edge are crucial for analytics at the edge when latency is critical. The combination of these and other factors may chart the future path of Digital Twins. The amount of unknown unknowns and the known unknowns in this process makes it imperative to create global infrastructures and organize groups to pursue infrastructure development blocks and new ideas through research.

IndexTerms - Digital Twin, Digital Twin Data, DTD

INTRODUCTION

With the rapid development of new information technologies the digital economy continues to flourish on a global scale. Especially in the field of intelligent production. Digital Twin is widely used in [illegible] management and management, rapid production line production, product life cycle management, intelligent design, [illegible] planning, robotic efficiency, product quality assurance, machine tool maintenance and human robot interaction. The practical use of digital twins involves a collection of critical permitting technologies, related to the construction and validation of visual models, the construction and management of intelligent services, real-time sensitivity and material control, cyber-physical interaction and integration, many- modal data integration and integration, and so on. Since data is important in facilitate all of these technologies, it can be argued that the success of digital twin lies in the availability of high quality data source.Pre-phase data acquisition is usually done manually, with low efficiency and high cost. Since the data collected is small in value and poor in real-time performance, it can only reflect the characteristics of the visible business for a limited time with unavoidable delays. Benefiting from the exposure of new information technologies in recent years, large amounts of data can be collected by sensors, IoT devices, mobile devices, and wearable devices in real time and processed using integrated computer infrastructure. As a result, it is possible to obtain a complete data record and perform timely analysis throughout the virtual business life cycle. On the other hand, the growth of DT-related research and use prioritizes new data needs. While the concept of digital twins has been around since 2002, it is only with Internet of Things, that we have called for it. Digital twin is a visual model of a process, product or service. This integration of the physical and virtual worlds allows data analysis and monitoring systems to solve problems before they occur, prevent downtime, develop new opportunities and even plan for the future through simulations. A digital twin can also be defined as a digital representation of a process or current and historical state of a physical object. This visual representation provides the capabilities and features of how an IoT device lives and works. Continuous reading and updates enable digital twins to provide real-time location, status and physical asset status. This integration of the real world with the digital world enables organizations to monitor systems, develop systems, and anticipate problems before they occur. Digital twins are created using digital twin technology.

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GESTURE RECOGNITION TECHNOLOGY FOR INTERPRETING HUMAN GESTURE VIA MATHEMATICAL ALGORITHMS

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Abstract: Gesture recognition is a topic in computer science and language technology with the goal of using mathematical algorithms to analyze human gestures. Gestures can come from any physical move or state; however, they are most typically made with the hands or the face. Emotion identification from the face and hand gesture recognition are two of the field's current hot topics. Cameras and computer vision algorithms have been used in a variety of ways to read sign language. Gesture recognition techniques, on the other hand, are used to identify and recognize posture, gait, proxemics, and human behaviors. Gesture recognition can be seen of as a means for computers to begin to grasp human body language, creating a richer bridge between machines and humans than simple text user interfaces or even graphical user interfaces (graphical user interfaces).

Gesture recognition technology aims to develop a system that can recognize certain human movements and utilize them to convey information or control devices. Gestures of the human body, especially hand movements, are used to interact with computers. A camera analyses the movements of the human body and sends the information to a computer, which then uses the gestures as input to operate objects or apps.

Index Terms - Hand Postures, Hand Gestures, Human Computer Interaction (HCI), Segmentation, Feature Extraction, Classification Tools, Neural Networks.

1. INTRODUCTION

Gesture recognition is a topic in computer science and language technology with the goal of using mathematical algorithms to analyze human gestures. Gestures can come from any physical move or state; however, they are most typically made with the hands or the face. Gesture recognition allows humans to intuitively interact with machines (HMI) without the use of mechanical devices. It is possible to point a finger at the computer screen and have the cursor move accordingly using the notion of gesture recognition. This might render traditional input devices like mice, keyboards, and even touch screens obsolete.

Computer vision and image processing techniques can be used to recognize gestures. Gestures of the human body, especially hand movements, are used to interact with computers. A camera analyses the movements of the human body and sends the information to a computer, which then uses the gestures as input to operate objects or apps. When a person claps his hands together in front of a camera, the sound of cymbals crashing together can be produced when the motion is sent into a computer.

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A Zero Trust Framework Security to Prevent Data Breaches and Mitigate the Cloud Network Attacks

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Abstract: ***Due to new modes of communication, we have seen a surge in the use of wireless networks in recent years. Online safety has become a contentious issue in the community. People want to be able to access all of your applications and resources at any time and from any location. As the use of cloud computing and the Internet of Things grows, so does the number of linked devices, increasing the number of cyber crime targets. A simple shift in mindset can help secure data and the network as a whole. This article defines a Zero Trust Network and illustrates some of the concepts that underpin this architecture/philosophy. Everything inside or outside the network is not reliable unless it is confirmed, according to the Zero Trust design. Zero Trust is a sophisticated security approach in which all users, both inside and outside an organization's network, must be authorized, authenticated, and validated of their security posture and configuration on a continuous basis before being granted access to the network, data, and applications. To validate a user's identity while ensuring tight security, this strategy employs high-end security technologies such as multi-factor authentication, next-gen endpoint security, and identity & access management.***
Keywords: ***Cyber security, Zero Trust Network,logical components, security solutions, Google Beyond Corp.***

I. INTRODUCTION

Zero Trust is a framework for approaching cyber security from a different viewpoint. Based on the fundamental assumption of "never trust, always verify." Zero Trust shifts security management away from the traditional perimeter-based approach to one in which trust is built between specific resources and consumers as and when needed. Internal and external elements are used to determine trust, which is regularly re validated. The term "zero trust" was coined by Stephen Paul Marsh in April 1994 after his thesis on computational security at the University of Stirling.Zero Trust frees IT by removing burdensome and expensive security measures, allowing businesses to construct a more dynamic, efficient, and customer-focused IT platform. Zero Trust tries to propagate the idea that, even if connected to their corporate LAN or previously authenticated, companies should not trust devices or users by default. For zero trust to be effective, organisations must employ complete information security and resilience strategies. A ZTA can guard against common threats and enhance an organization's security posture by employing a managed risk approach when combined with existing cybersecurity policies and guidelines, identity and access management, continuous monitoring, and best practises.It is based on real-time visibility into user attributes such as user identity, firmware versions, endpoint hardware type, OS versions, vulnerabilities, patch levels, user logins, installed programmes, incident detections, and so on. Zero Trust is becoming increasingly well-known as a result of its strong security capabilities, and corporations have begun to adopt it, including Google's BeyondCorp initiative. According to a research, the global market for Zero Trust security would increase at a CAGR of 17.4 percent from US$ 19.6 billion in 2020 to USS 51.6 billion in 2026. Zero Trust Application Access (ZTAA), Zero Trust Network Access (ZTNA), Zero Trust Identity Protection (ZTIP), and other Zero Trust Access terms are commonly used.

A. Network Topology

Companies were initially more "isolated" with the introduction of the first computer systems, which reduced the frequency of attacks by focusing on their efforts to restrict access solely within the company by hierarchical levels. Since then, safety models have centred on deploying layers of protection to create digital perimeters to separate "trusted resources" from "untrusted resources. "Traditional perimeter security relies on firewalls, VPNs, and web gateways, which must deal with employee skill shortages, overburdening, and an ever-increasing number of cloud apps and mobile devices, all of which enhance cyber criminals' attack surface. These boundaries have been obliterated as cloud computing and the internet of things have grown in popularity. What we can say is that the traditional approach is no longer viable. With that strategy, no matter how much we invest in our company's cybersecurity, new and more sophisticated assaults are launched against our defences, thus we must view cybersecurity as a requirement rather than an investment over time. Because of the ever-growing universe of connected people, cybercrime targets are expected to increase significantly.

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A Transparent Plastic Memory Technology Using A Polymer Polyethylene Dioxythiopene

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ABSTRACT

A new form of endless computer memory which uses plastic and is much cheaper and faster than the being silicon circuits were constructed by Experimenters at Princeton University working with Hewlett-Packard. This new memory technology is created by using a conducting plastic which has the implicit to store a megabit of data in a millimetre-square device-10 times thick than current glamorous recollections. This utilizes a preliminarily unknown property of a cheap, transparent plastic called PEDOT-short for polyethylenedioxythiophene. The formulators say that data consistence as high as a megabit per square millimetre can be possible. By mounding layers of memory, a boxy centimetre device could hold as important as a gigabyte and be cheap enough to contend with CDs and DVD.

Keywords: Plastic, Storage, Polyethylenedioxythiophene (PEDOT), Flash Memory, Polymer.

I. INTRODUCTION

Imagine a script where the memory stored in your digital camera or particular digital adjunct is incompletely grounded one of the most flexible accoutrements made by man plastic. Scientists at HP Labs and Princeton University are agitated a new memory technology that could store more data and bring lower than traditional silicon- grounded chips for mobile bias similar as handheld computers, cell phones and MP3 players. **A conducting plastic has been used to produce a new memory technology with the eventuality to store a megabit of data in a millimetre-square device-10 times thick than current glamorous Recollections**. The device should also be cheap and fast, but cannot be rewritten, so would only be suitable for endless store house. The device sandwiches a blob of a conducting polymer called PEDOT (POLYETHYLENE DIOXYTHIOPENE) and a silicon diode between two vertical cables. Substantial exploration trouble has concentrated on polymer- grounded transistors, which could form cheap, flexible circuits, but polymer- grounded memory has entered fairly little attention. The beauty of the device is that it combines the stylish of silicon technology-diodes-with the capability to form a fuse, which does not live in silicon, "says Vladimir Bulovic, who works on organic electronics at the Massachusetts Institute of Technology. Still, turning the polymer INTO an insulator involves a endless chemical change, meaning the memory can only be written to formerly. Its generators say this makes it ideal for archiving images and other data directly from a digital camera, cell phone or PDA, like an electronic interpretation of film negatives.

II. LITERATURE SURVEY

The concept of how plastic memory is developed, features and working of polymer memory are explained in [12].Authors had explained how PEDOT technology used by plastics which uses polymers and also explained about the advantages of the polymer memory [16]. In [17] new type of memory, which is using electronic memory with less cost, high capacity, used in small devices for memory are explained briefly. Development of scientific procedures and investigations based on plastic memories with the recent progress in memory devices in[18]. In [21] Authors in their paper explained about developments in the areas of composites, novel recovery triggering, and new application developments of memory. Shape-memory polymers show possible for varied applications, including in the medical arena, sensors, and actuators and its uses in [25]. In [24] authors had included in their paper about testing of products in a different manner by using the polymer memory.Detailed explanations of modelling, mechanics, architectures, and applications, as well as a detailed assessment of polymer memory achievements [22]. Explained about electronic memories build with polymers where the material devices are used this technology. A phenomenon of how the current is being passed to polymers and its mechanism in [20]. In [23] explained about the ionic deformation on the mechanical behaviour and their effects in pseudo plastic shape memory and the impact of passing distortion, which uses plastic. Explained about polymer array on plastic substrates which connects the array with the current, the array can be correctly addresses and operated, while maintaining low power consumption in [26].In [19] author had explained about whether the memory will working a content addressable or associative modeSilk-screening and dealing with the outcomes of experiments From the associated research, one can deduce how valuable

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Twitter Emotion Recognition Using Recurrent Nueral Network

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ABSTRACT

Emotions are highly valued since they play such an important role in human connection. Nowadays, social media plays an important part in people's interactions all around the world. Emotions in social media posts can be efficiently analyzed. Twitter is a microblogging website that allows individuals all over the world to express themselves and share their thoughts. Because tweets are short and informal, sentiment analysis for Twitter communications ('tweets') is considered a difficult topic. Sentiment analysis is commonly used in marketing, customer service, and clinical medicine to analyze voice of the customer materials such as reviews and survey replies, as well as online and social media and healthcare resources. The process of extracting information on a consumer's view of a product, service, or brand is known as sentiment analysis. A model is constructed and trained to learn to distinguish emotions in tweets using Recurrent Neural Networks. Thousands of tweets have been categorised into one of six emotions: love, fear, joy, sadness, surprise, and anger. This multi-class classification problem was solved using TensorFlow as the machine learning framework.

Keywords: Keras,Nlp,Rnn,Tensorflow

1.INTRODUCTION

Sentiment analysis (also known as opinion mining or emotion AI) is the systematic identification, extraction, quantification, and study of affective states and subjective information using natural language processing, text analysis, computational linguistics, and biometrics. Sentiment analysis is commonly used in marketing, customer service, and clinical medicine to analyze voice of the customer materials such as reviews and survey replies, as well as online and social media and healthcare resources. The process of extracting information on a consumer's view of a product, service, or brand is known as sentiment analysis. Natural language processing (NLP) is used in social media sentiment analysis to analyze online mentions and determine the feelings behind the post.

The post's approving, negative, or neutral sentiment will be determined via social sentiment analysis.With the use of Recurrent Neural Networks, a model is created and trained to learn to recognize emotions in tweets. The dataset has thousands of tweets each classified in one of 6 emotions - love, fear, joy, sadness, surprise and anger.Twitter is being used to collect opinions on products, trends, and politics as a microblogging site. Sentiment analysis is a technique for analyzing people's attitudes, feelings, and views on anything, and it may be used to study public opinion on news through tweets.

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AN INTRODUCTION TO BUSINESS AND DEVELOPING USING NOSQL DATABASES LIKE MONGODB

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Abstract: MongoDB may be a document-based NoSQL information. It's familiar for its support for quantifiability, flexibility, and complicated queries. It conjointly options high availableness, document validation, and tools for automation, backup, and watching.Having a sole MongoDB developer isn't a standard issue within the work. Usually, MongoDB expertise is associate addition to no matter back-end skills ar needed. Job ads sometimes need a back-end developer (specialized in Node.js and C#. etc.) World Health Organization has expertise operating with MongoDB.Through flexibility and knowledge handling capacities create MongoDB a extremely sensible possibility for extensively dynamic knowledge wants. If your business supports mobile infrastructure, then MongoDB's ability to rescale horizontally and handle unstructured knowledge will extremely facilitate your wants.

IndexTerms – MongoDB, Challengers, MongoDB using Business,Benefits

I.INTRODUCTION

The development of MongoDB was started in early 2007 once the corporate was developing a Microsoft Azure-like platform as a service. This was a brand new royalty primarily based name 10gen that is currently modified its name to MongoDB opposition. The initial development was targeted on building a PaaS (Platform as a Service). however later in 2009, MongoDB came to the market as associate ASCII text file information server and was maintained by this organization itself. It develops and provides business support for the source-available information MongoDB a NoSQL information that stores knowledge in JSON-like documents with versatile schemas. Through flexibility and knowledge handling capacities build MongoDB a extremely smart choice for extensively dynamic knowledge desires. If your business supports mobile infrastructure, then MongoDB's ability to rescale horizontally and handle unstructured knowledge will very facilitate your desires.

II. BUSINESS AGILITY AND BUSINESS IMPERATIVE

New technologies are already driving economic process. and their impact is fast. By 2025, the marketplace for AI applications and services is anticipated to reach nearly $40 billion, and therefore the impact of the IoT on the world economy in terms of revenues and price savings can exceed $11.1 trillion. additional generally, the planet Economic Forum estimates the world economy is poised to unlock $100 trillion of worth over future decade by capturing the potential of those and alternative technologies.

Those who effectively harness the ability of software package and knowledge area unit gaining vital advantages: seventieth area unit growing revenues, sixty seven area unit reducing price, forty third area unit reducing churn, and fifty nine area unit rising client expertise metrics. By distinction, firms that fail to effectively leverage knowledge risk being left behind. the typical time period of an

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XENOBOTS-WORLD'S FIRST LIVING ROBOTS USING ARTIFICIAL INTELLIGENCE

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Abstract : Xenobot is a living, cell-based robot. Evolutionary algorithms running on a supercomputer design its configuration and movement style. Xenobots are tiny self-healing biological machines made from frog cells that can move around, push a payload, and even exhibit collective behaviour in the presence of a swarm of other Xenobots, according to a team of biologists and computer scientists from Tufts University and the University of Vermont (UVM). A xenobot, unlike other robots, is extremely tiny. Metal, plastic, or other synthetic materials are not used. It's totally made up of biological cellular substance.

IndexTerms – Xenobot, Artificial Intelligence

I. INTRODUCTION

According to a group of biologists and computer scientists from Tufts University and the University of Vermont, Xenobots are tiny self-healing biological machines constructed from frog cells that can move around, push a payload, and even demonstrate collective behaviour in the presence of other Xenobots (UVM). Xenobots are much smaller than other robots. There is no usage of metals, plastics, or other manmade materials. It is formed entirely of biological cellular matter.[5]

The same group has now created living organisms that can self-assemble a body from single cells, move without using muscle cells, and even remember things. The current generation of Xenobots can also travel faster, traverse a wider range of environments, and survive longer than the original edition, and they can still work in groups and heal themselves if injured.

Unlike the first generation of Xenobots, which built millimeter-sized automatons by physically putting tissue and surgically manipulating frog skin and heart cells to generate motion, the second generation of Xenobots took a "bottom up" method. Tufts biologists used stem cells from Xenopus laevis (thus the name "Xenobots") embryos to self-assemble and grow into spheroids, where part of the cells differentiated into cilia — tiny hair-like projections that move back and forth or spin in a certain way after a few days. The new spheroidal bots use cilia to give them "legs" that allow them to move quickly across a surface, rather than manually created cardiac cells, which allowed the original Xenobots to scamper around due to their natural rhythmic contractions. Cilia are found on frog and human mucosal surfaces, including as the lungs, to help push pathogens and other undesired material out. They've been upgraded to allow them to attack the Xenobots more swiftly.

II. THE EVOLUTION OF XENOBOTS

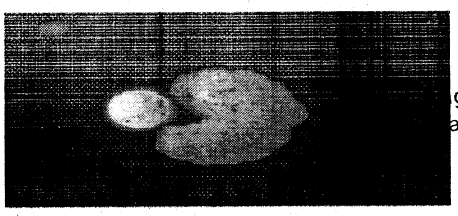

Figure 1 xenobot (c shape; red) developed by ai cleaning up stem cells packed into a ball.

Motivation for Creating Xenobots

Researchers were experimenting with the notion of controlling real-life cells to behave exactly how they want, similar to other robots that have been built in recent years. Tufts University and the University of Vermont researchers extracted stem cells from an African clawed frog embryo (Xenopus Laevis). Skin cells and heart cells were among the stem cells collected by the researchers.

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DARKNET AND ITS INFLUENCE IN ONLINE ANONYMITY

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Abstract : The dark web is an area of the internet that is inaccessible to search engines and needs an anonymous browser/software called Tor. Its hidden network and anonymity pave the way for illegal activities and help cyber criminals to carry out well-planned, coordinated and malicious cyber attacks. Cyber security experts agree that criminal activities on the internet are growing exponentially and getting wilder and more intense as well. These illegal cyber activities include various destructive crimes that can target a single person or an entire nation, e.g. Data spills , ransom-ware attacks, shadow markets, mafia and terrorist attacks. So, maintaining privacy and secrecy is the current dilemma of the times. This document has thoroughly examined various attacks and attack patterns commonly employed on the dark web. We've also ranked these attacks in our peculiar trilogy ranking system. It also provides a detailed overview of existing threat detection techniques and their limitations for anonymity-providing services such as Tor, I2P, and Free-net .Ultimately, the document identified significant vulnerabilities that leave the dark web vulnerable to various attacks.

IndexTerms - Freenet, I2P, threat intelligence, Tor, Attack taxonomy, crimes, dark web.

I. INTRODUCTION

Since the 21st century is a digital age, more and more information is online. With just one click, people can share information and connect with anywhere in the world. The web visible to an ordinary person looks like a vast knowledge resource, but it is only the surface web. Actually, there is much more on the internet. The websites we access make up around 4% of the entire web. The other 96% of the web is hidden and invisible. This invisible, deeply hidden, un-indexed web is commonly referred to as the Deep Web. However, the dark web, a subset of the deep web, is mainly used for illegal purposes. We can better understand the magnitude of this problem by looking at the statistics. According to the literature, 57% of Dark Web activity is illegal, including data breaches, illegal drugs, pornography, human trafficking, and more. A study conducted by the University of Surrey found that total cybercrime revenue was approximately $1.5 trillion in 2018, with cybercrime likely to become more frequent and aggressive over time. This study focus on the current state, usage and growth of the dark web. We've characterized the anonymity of the dark web, its vulnerabilities, and how various cyber attacks can breach that anonymity.[1] We also examined threat intelligence techniques, their efficiency, success, and limitations in detecting attacks and generating an appropriate response[3]. More specifically, this project focuses on examining the following questions:

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AN EVALUATION OF THE SMART PHASE OF AGRICULTURE INDUSTRY WITH THE IMPLEMENTATION OF INTERNET OF THINGS (IoT)

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Abstract: The Internet of Things (IoT) is about linking ordinary objects to one another and the internet to make them smarter. It involves physical items to be detected and operated from afar, allowing for deeper integration of the real world with computer-based systems. The Internet of Things (IoT) offers cost-effective and dependable solutions for a variety of applications. Agriculture is the foundation of the national economy, and it plays a critical role in its growth. IoT-based solutions are being designed to manage and monitor agricultural fields autonomously and with little human intervention. Data collection on temperature, rainfall, humidity, wind speed, insect infestation, and soil composition are just a few of the IoT uses in farming. This information may be used to automate agricultural processes, make educated decisions to increase quality and quantity, decrease risk and waste, and simplify crop management. Farmers, for example, may now monitor soil temperature and moisture from afar, and even use data from the Internet of Things to improve precise fertilization regimens. The overarching objective is for sensor data to be combined with the farmer's knowledge and intuition about his or her farm to assist enhance agricultural output while lowering expenses.

IndexTerms *- IoT, internet of things, future in agriculture, technology in agriculture, smart farming, smart agricultural technologies.*

I.INTRODUCTION

According to a survey, the world's population is expected to reach around 10 billion in 2060. This will increase the demand for food grain, which is often negatively affected by the rapid growth of the population. Fortunately, the agricultural sector can improve its production to meet the increasing demand. The increasing number of sensors used in the agriculture sector has created a strong impression about the Internet of Things (IoT). The applications of the IoT are expected to increase significantly throughout the next few years.

Overall, the cost of all agricultural solutions based on IoT-based agriculture is relatively fair.

Researchers proposed numerous integrated modern technologies to boost agricultural yield. As a result, numerous modern ideas may be coupled with traditional farming to gradually reach the goal. With several options, the Internet of Things, with its sensors and descriptions in green nature, may intelligently construct agriculture.

Many agricultural businesses are turning to IoT technology to improve efficiency, production, global market, and other qualities such as minimal human intervention, time, and cost, among others. Sensors are becoming smaller, more complex, and more cost effective as technology advances. The networks are also internationally accessible, allowing for complete commitment to smart farming. Smart farming, which focuses on fostering agricultural innovation, is the solution to the industry's present difficulties. All of this may be accomplished with the help of smart phones and IoT devices. A farmer may obtain any necessary data or information as well as keep track on his agricultural sector.

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DEVOPS FOR COLLABORATIVE DEVELOPMENT IN AGILING IT

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Abstract: The term DevOps comes from a mix of two words: development and operations. It is not an application nor a tool; rather, it is a culture that encourages collaborative development and operations. The speed with which apps and services are delivered has grown as a result of DevOps implementation. DevOps enables businesses to provide better and more consistent service to their consumers. To put it another way, DevOps is the practice of aligning IT and development operations through better and improved communication. The operations team in DevOps has a thorough picture of the development process. The operations and development teams collaborate to create a monitoring plan that meets the current business and IT requirements.

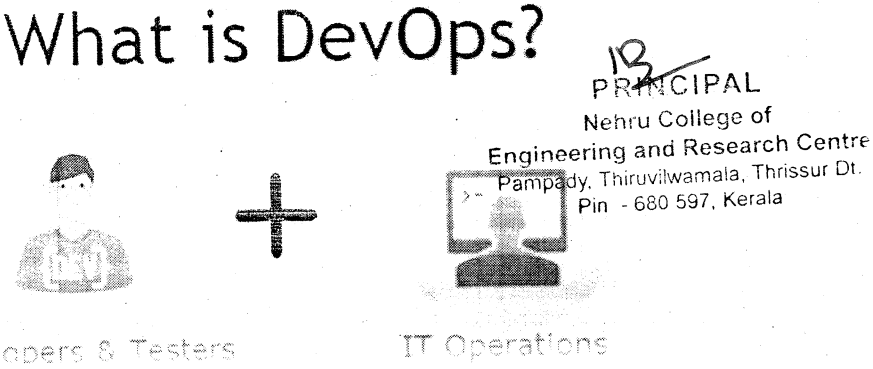
Index Terms **- DevOps, Determinants, Concepts, Outcomes.**

I. INTRODUCTION

The term DevOps is a mix of two terms: development and operations. It is a culture that encourages everyone to participate in the growth and operating process. DevOps encourages collaboration between development and operations teams so that code may be sent to production more quickly and in a repeatable manner. DevOps enables organizations to provide applications and services faster. It also enables businesses to better service their clients and compete more effectively in the market. DevOps is also a series of development and IT operations with improved communication and collaboration.

History

- The first DevOps days conference was held in Ghent, Belgium, in 2009. The conference was founded by Patrick De Bois, a Belgian consultant.
- Alanna Brown of Puppet launched and conceived the state of DevOps report in 2012.
- Nicole Forsgren, Jez Humble, Gene Kim, and others produced the annual State of DevOps report in 2014. They discovered that DevOps adoption accelerated in 2014.
- Nicole Forsgren, Gene Kim, and Jez Humble formed in 2015. DORA (DevOps Research and Assignment).
- "Accelerate: Building and Scaling High-Performing Technology Organizations," by Nicole Forsgren, Gene Kim, and Jez Humble, was published in 2017



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Metaverse - The Parallel Universe that uses Augmented Reality (AR), Virtual Reality (VR) and Block chain

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Abstract : In Stephenson's novel, Metaverse is defined as a shared "imaginary universe" which is "made available to the public through the international fiber-optics network" and projected onto virtual reality goggles. As a result, the term can be used to describe digital environments that have been supplemented using virtual reality (VR) or augmented reality (AR). Meta refers to the "beyond," and verse to the "universe." Furthermore, some individuals use the term metaverse to refer to virtual worlds in which players can travel and interact with one another; for example, a world where developers can create buildings, parks, signs, and other items that do notexist in reality. It features massive hovering light shows and well-known neighbourhoods (where therules of three-dimensional spacetime are ignored, and free-combat zones where people can go huntingand kill each other).

IndexTerms - Block chain, Virtual reality, Augmented reality

I. INTRODUCTION

The metaverse is potential iteration of the Internet as a single, ubiquitous, and immersive virtualworld assisted by the usage of augmented reality (AR) and virtual reality (VR) headsets in science fiction and futurism. A metaverse is network of three-dimensional virtual environment focused onsocial interaction. The metaverse is the next stage of digital evolution that has the potential to dramatically increase digital adoption by expanding the realm of services beyond traditional onlineplatforms. In the last few decades, digitization of services has been the trend for increasing efficiency in the domains of business, entertainment, education, and any other system that may be combined with online access. With the possibilities afforded by online storage/processing facilities and digitalsystems at remote data centres and cloud platforms, these services and systems were improved to their full potential. The focus has switched to the consumer experience as the efficiency, performance, and quality of service access have reached their maximum potential. As a result, thereis a demand for better service.

II. THE ORIGIN OF METAVERSE

The term "metaverse" is a combination of the terms "meta-" and "verse." The prefix "meta" is derived from the Greek word "starting place," which means "beyond," and "verse" is derived from the word "universe." It changed into first utilized in literature via way of means of Neal Stephenson in his 1992dystopian novel Snow Crash. In the ee-e book, the metaverse is supplied because the final evolutionof the internet as a form of digital fact in which any digital interplay may have an instantaneous impactat the original global too. The ee-e book quite lots sums up what the metaverse is. It's a bodily chronicdigital area in which there are digital avatars, virtual social interactions, and gaming amongst many particular matters that we partner with metaverse today. Snow Crash additionally underlines how themetaverse with inside the tale influences traits with inside the actual global of the protagonist, such as a conspiracy that turns human beings whose brains are linked to the digital global, insane. Since the discharge of the ee-e book, numerous different books, movies and tv suggests have dabbled withthe idea to various degrees, such as Steven Spielberg's well-preferred film Ready Player One (2018),which changed into tailored from Ernest Cline's 2011 novel of the identical name. The common thread running through it all is that the metaverse is a digital reality in which human beings may be capable of doing everything they do in real life, depending on technological advancements. Blockchain technology is a structure that stores transactional records, also known as the

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A COMPLETE OVERVIEW OF NON-FUNGIBLE TOKENS

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Abstract: This research explores how Non-fungible Token (NFTs) are spreading throughout the market. NFTs have the potential to invade all of our lives from education to sports NFTs is in the play now. The outcome of this research highlights the current trend, history, and the future potential this holds.

Index Terms *- Non-Fungible Tokens , Opensea, Counterparty, Cryptopunks, Ethereum, Cryptokitties.*

I. INTRODUCTION

In recent months, the NFT market has been growing exponentially as it appears to be the most widely accepted business application of Blockchain technology [1], since the introduction of crypto. With the emergence of the metaverse [2], it is clear that NFTs will play a huge role in tomorrow's internet [3] due to their ability to make digital items have scarcity, uniqueness, and proof of ownership, similar to physical items [4]. Human interactions of the next decade on the internet may entirely rely on NFTs. *What are NFTs?*

NFTs are provably scarce unique digital assets that can be used to represent ownership [5]. They can be one-of-a kind rare artworks, collectible trading cards, and other assets with the potential to increase in value due to scarcity [6], [7]. While being digital assets, they also can be used to represent physical assets. A digital certificate of land/ qualification can be identified as a couple of examples. The biggest winners in the NFT space over the last few months have been digital artists who were able to sell art worth over $2.5 Billion [8].

NFTs were introduced by Ethereum [9] as an improvement proposal [10], [11] in the Ethereum Request for Comments (ERC)-721 standard [5]. This allows anyone to implement a Smart Contract with the ERC-721 standard and let people mint NFTs as well as, keep track of the tokens produced by it. This allows the created tokens to be validated.

Smart Contracts & ERC standards

Smart Contracts in simple terms are the code that is running on the Blockchain. 3 of the notable ERC standards can be identified in Table I.

ERC-721	ERC-777	ERC-1155	ERC-20
Non-fungible tokens	Non-fungible tokens [12]	Semi-fungible tokens [13]	Fungible tokens
Each token is completely unique	A richer standard for Fungible tokens, enabling new use cases and building on past learnings. Backwards compatible with ERC20.	Tokens begin trading as Fungible tokens then may end up being non-fungible in the long run	All coins of one kind are equivalent and hold the same value
CryptoKitties [14]		Concert tickets, gift vouchers, coupons	Cryptocurrencies - Bitcoin, ETH

TABLE I: COMPARISON OF ERC STANDARDS

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Assessing the vulnerabilities in databases and securing NoSQL Databases like MongoDB and Cassandra databases

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Abstract: *On account of the rising amounts and the stand-out kinds of realities that need to be saved inside the Databases, offices, and organizations are quickly taking on NoSQL data sets to contend. Those data sets have been not planned with security as fundamentally important. NoSQL open-supply programming changed into In the primary high level to deal with unstructured measurements for the intention of business insight and Selection help. Throughout the long term, insurance highlights have been added to those data sets, but they are not quite as tough as they should be, and there's a degree for advancement as the complexity of the programmers has been expanding. In addition, the mapping less design of those data sets makes it more noteworthy intense to place into impact regular RDBMS like security capacities in those data sets. Famous NoSQL information bases are MongoDB and Apache Cassandra. Despite the fact that there are loads of examinations related to well-being weaknesses and tips to upgrade the security of NoSQL Databases, this exploration focuses especially on MongoDB and Cassandra data sets. This gander at goals to find and investigate all of the assurance weaknesses that MongoDB and Cassandra Databases have which can be specific to them and give you a stage through the advance manual that can help organizations to comfortable their records put away in these data sets. That is extremely urgent because of the reality the plan and weaknesses of each NoSQL data set are not quite the same as one another and thus require security hints which can be intended for them.*

Keywords: *vulnerability, Database, Securing, NoSQL, MongoDB, Cassandra*

I. INTRODUCTION

NoSQL (i.e., non-square or not simplest square) database is a database design, which is not based totally on the square (structure query language). Essentially, NoSQL databases aren't relational. They are designed with looser consistency fashions than RDBMS and commonly do no longer have a schema. NoSQL databases do now not rely upon schemas, tables, rows, or columns to prepare and retrieve facts. NoSQL databases are especially beneficial to store semi-established and unstructured information. NoSQL is being followed with the aid of corporations as a supplement to RDBMS to deal with new use cases because of the increasing volumes, velocity, variety (semi-structured and unstructured) of data that corporations want to save on an everyday foundation and the need for frequent updates and capabilities because the commercial enterprise necessities change on this digital and competitive economic system is becoming increasingly more difficult with the present traditional database control tools. A few examples of NoSQL databases are MongoDB, Cassandra, CouchDB, Redis, and HBase. Two of the top-rated NoSQL databases MongoDB and Cassandra no longer need to (Cooke, 2018). MongoDB is a record-oriented database, which means that the records are stored within the form of a report. Each database consists of collections, which in flip consist of files. Each document is composed of a different variety of fields, sizes, and content. Each document has an identity Area, that's used as a primary key. The structure of MongoDB is proven in the underneath discern. MongoDB does have a schema this is defined beforehand. The information (i.e., fields) can be created on the fly. MongoDB has its query language, which is called Mongo query language. The files in MongoDB are JSON-like, i.e., documents are represented in a binary-encoded format, that's called BSON (Binary JSON). BSON is an extension of the JSON model to offer ordered fields and extra statistics types. The default configuration of MongoDB permits full access to the database for everybody. MongoDB databases have a history of theft, and MongoDB servers have been held for ransom(McCallion, 2017). Since December of 2016, ransomware attacks had been happening on MongoDB databases, where attackers wipe off the database and ask for a ransom to get the information back. In 2018, the California Voter database, which contained data of over 19 million voters in California, changed exposed online because of an unsecured MongoDB database (Cimpanu, 2018). Apache Cassandra is a huge-column store database. It turn out to be evolved at FB at the start for inbox seek.

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5 PEN PC TECHNOLOGY: PEN-STYLE PERSONAL NETWORKING GADGET

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ABSTRACT: In the subject of pen computing, "5 pen pc technology" is a recent discovery. Pen computing is a computer-like user interface that employs pen-like instruments that are more user-friendly thancurrent systems. The majority of us are ignorant of how important computers are in our lives. The ENIAC, a computer the size of a large room with the processing power of hundreds of modern computers, was constructed in 1943. Modern integrated circuit computers are small enough to be carried in a pocket. Desktop computers are currently among the smallest computers available, withthe iPad being the most popular beast, being 9 inches long and weighing over 700 kg. Think about getting a computer that fits in your pencil case. The P-ISM (Pen-style personal networking Gadget bundle) is a collection of five pens that operate together to produce a virtual computer environment. All five pens are linked using wireless technology, ideally Bluetooth (802.11 BG). All five pen technologies are linked to the internet using the cellular phone pen. This 5 PEN PC TECHNOLOGY is being developed by NEC Corporation, a Japanese technical corporation.

KEYWORDS: P-ISM, pen computing, Bluetooth, virtual keyboard, CPU pen, camera, Battery

I. INTRODUCTION

5 pen pc technology shortly called P-ISM("Pen-style Personal Networking Gadget Package"), is nothing but a new discovery, which is in the developing stage by the NEC Corporation. The Tokyo- based NEC Corporation showed a conceptual prototype of P-ISM at the ITU Telecom World exhibition in Geneva in 2003. TORU ICHIHASH created the 5 Pen PC technology. It is essentially a technological advance in the sphere of communication in the computer world. This technology consists of a handwriting input device, a Central Processing Unit, a small projector, a camera, as well as a mobile phone. Wireless technology allows all devices to communicate with one another, and it can be connected to mobile phones and other internet connections. Bluetooth is widely utilized because it eliminates the need for wires to carry data and establish connections. 5 Pen PC Technologyis really useful since it lets us connect whenever we need it without having to use wires.

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INTELLIGENT HIGHWAY

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Abstract : Intelligent highway is an advanced application, without such innovation, that aims to provide new services related to different modes of transport and traffic management and enable various users to better and secure, integrated, and 'smart' use of transport networks. Although ITS may refer to all modes of transport, the EU Directive 2010/40 / EU of 7 July 2010 in the framework of the distribution of smart transport systems in the road transport sector and integration with other modes of transport defines ITS as systems used by information and communication technology in the road transport sector, which includes infrastructure, vehicles and users, as well as traffic control and traffic management, as well as links to other modes of transport.

I. INTRODUCTION

Each year, more than 42,000 people lose their lives on the streets of our country. Loss associated with these risks includes not only the lives of those affected, but also and time spent on stagnant or slow traffic, excessive fuel consumption, health care costs, as well as tax dollars spent on emergency response. Total cost reaches more than $ 230 billion, according to GAO worth $ 32.6 billion, plus assets damage made $ 59 billion of $ 230 billion. This is almost equal to$ 820 per person living in the United States wasted fuel and time, emergency services and declining productivity are reported2001. Loss of productivity comprises $ 81 billion of total, medical unacceptable costs and must be reduced. Government transport agencies are looking for new, cheaper technology that will replace high price sloop sensors and other invasive technologies that have been used in past

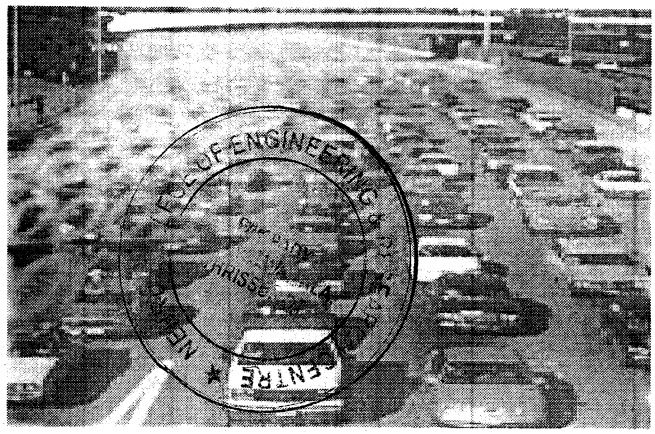

Figure 1:traffic sensing

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ACTION AUDIO

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Abstract : All of us enjoy sports such as cricket, football, tennis, basketball etc. Have you ever thought of those who are not able to see the match, the ones who are visually challenged. It might be quite challenging for them to view the sports merely by the audience voice and cheers. By the time in Australia when the Open Tennis 2021 was around the corner and when everyone was ready for the breathtaking and eye-catching game there were 285 million people who could not enjoy the game. People who are blind or face issues of lower vision have compromised viewing due to lack of inter-activeness. Even the radio commentary did not tune in as a solution as it was not tune in live-action. Thereby, in partnership with Monash University, Tennis Australia developed a new technology called Action Audio. This technology brings the thrill of live sports to the life of visually challenged people. Action Audio turns spatial data into information-rich 3D sound experiences to follow the action in real time.

IndexTerms **–Action audio,spatial data.QOL**

INTRODUCTION

Vision loss do have a big impact on the lives of those who experience it likewise as on their families, their friends, and society. the entire loss or the slow loss of existing eyesight is commonly frightening. It leaves those affected to wonder about their ability to keep up their independence, procure needed treatment, employment, and supply for themselves and their families. The health consequences related to vision loss extend well beyond the attention and sensory system. Vision loss can affect one's quality of life (QOL), independence, and mobility injury, and it's going to also worsen status in domains spanning mental state, cognition, social-function, employment, educational-attainment.Vision impairment is connected with a decrease of QOL. Many studies have shown that vision impairment is commonly connected with several negative health outcomes and poor QOL.

It would be difficult for the visually impaired people to watch sports. It might be quite challenging for them to view the sports merely by the audience voice and cheers.

Thereby, when the Open Tennis 2021 was around the corner, the world witnessed the rise of the new technology called Action Audio. This was an eye opener for people all around world to show that there is no limit for human intelligence. Through this technology even the visually impaired could enjoy the tennis the same way as a person with no vision challenges is able to enjoy.

LITERATURE SURVEY

This Literature survey offers the reviews of literature on future of Action Audio using basic human reviews. Since this technology is about to be on the market, survey is purely based on reviews based on the ones with visually impaired.

Marshall(35) of Melbourne, who is an tennis fan listens to the tournament on the radio every year. He was extremely happy on the launch of this technology and said that Action Audio had added an extra layer to his experience. This technology allowed him to more clearly track the ball during a point.

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PROJECT SOLI

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ABSTRACT

Project Soli is another innovation that utilizes radar to empower new kinds of touch less co-operations. This innovation considers the plan of a human motion acknowledgment framework in view of example acknowledgment of marks from a versatile savvy radar sensor. The developments of signals from a human can be caught utilizing a radar sensor, and by recognition of propositions motions, some extraordinary errand on a gadget should be possible. The venture is under research by Google ATAP, and it is named as Task Soli. In this innovation, a Radar sensor alongside a catching framework is made into a little chip and this chip can be associated with any gadget like PC, Cell phone and so on. The various capacities in these gadgets like Call, Volume control, Zoom and so on should be possible utilizing explicit motion without contacting or utilize another cooperation strategy.

Keywords:

Radar, soli sensor, soli chip, alpha development kit

I.INTRODUCTION

Project soli, a detecting innovation that utilizes small radar to distinguish contact less signal connections. The undertaking is being created by

Google's Cutting edge innovation and Activities bunch.

The Soli chip integrates the whole sensor and radio wire exhibit into a super minimized 8mm x 10mm bundle. It tracks sub-millimeter movement at high paces with extraordinary precision. The reason fabricated collaboration sensor involves radar for movement following of the human hand.

The gadget radiates an expansive radio bar and afterward gathers data including return time, energy, and recurrence shift to acquire a figuring out about the position and development of items in the field. Properties of the reflected sign, for example, energy, time postponement, and recurrence shift catch rich data about the item's qualities and elements, including size, shape, direction, material, distance, and speed. This

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A STUDY ON INTERNET OF BEHAVIORS (IoB)

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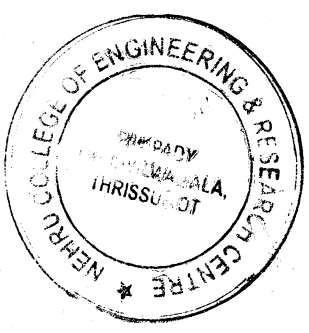
Abstract: The Internet of Behaviors (IoB) is a branch of the Internet of Things (IoT) that can develop patterns to affect people's behavior. It is a combination of three fields: technology, data analytics, and behavioral psychology. With its ability to impact consumer behavior, the combination of IoT and IoB is incredibly powerful, and digital marketing might take use of this. The most obvious and effective examples of capitalizing on the Internet of Behaviors are Face book and Google, which provide adverts to surfers at regular intervals based on detailed analysis and understanding gained from customer behavioral data obtained on a regular basis. Businesses have already begun to integrate IoT and IoB technologies into their operations. The simple explanation is that in order to thrive in this competitive industry, businesses must use agile technology. Furthermore, IoB assists in finding the major influencing variables of a client's purchasing process by evaluating consumer behavior. This technology will totally alter a customer's purchasing habits and has the ability to impact the future of purchasing.

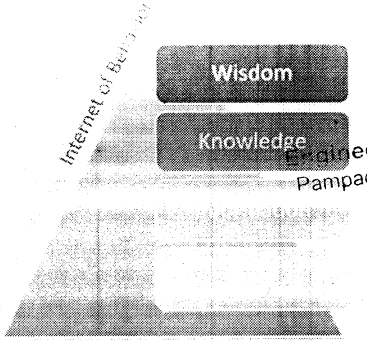
IndexTerms **- Internet of Things (IoT), Internet of Behavior (IoB), intelligent systems, Customer behavior, Behavior-Driven software development**

INTRODUCTION

The Internet of Things (IoT) is a concept that most Engineers are aware with these days. The extent of its intricacy is continually increasing and developing. As a result of this progression, a new developing technology known as the Internet of Behavior has emerged (IoB). So it's important to know about IoT before going deeply into IoB.

The Internet of Things (IoT) is a network of interconnected physical devices that use the Internet to collect and distribute data and information. An IoT ecosystem consists of web-enabled intelligent devices that use embedded systems such as processors, sensors, and communication equipment to acquire, send, and act on data from their surroundings. The Internet of Behaviors (IoB) is a collection of data (BI, Big Data, CDPs, etc.) that gives important insight into customer behavior, interests, and preferences (IoB). The Internet of Things (IoT) extension of IoB focuses on obtaining, processing, and analyzing the "digital dust" of people's daily activities. The Internet of Things (IoT) is a network of interconnected physical objects that collect and exchange data via the internet. This data is analyzed by IoB in connection with specific human behaviors, such as shopping patterns and demographic preferences. Gartner is credited with coining the term "IoB," which is discussed in Gartner's "Top Strategic Technology Trends for 2021." Gartner credits Göte Nymanof, a psychology professor at the University of Helsinki, with the notion of leveraging IoT data to affect behavior. The IoB attempts to grasp data obtained from users' online actions from the perspective of behavioral psychology. It seeks to solve the question of how to understand data and how to use that information to the development and promotion of new products, all from the standpoint of human psychology.





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KEY MANAGEMENT IN MOBILE AD HOC NETWORKS

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Abstract: Ad hoc networking is a self-organizing wireless networkingarchitecture that was previously only linked with military battlefield networks. Because of the availability of wirelesstechnologies like Bluetooth and 802.11, as well as thedevelopment of next-generation networks, civilian applications that take advantage of the benefits of ad hoc networking are being considered. The majority of the research has so far been focused on routing concerns. Otherchallenges, like as security, key management, and networkaddressing, have gotten far less attention, and these must beaddressed before any effective applications can emerge. I propose a security paradigm based on a simple authentication method combined with a Key Management methodology. The proposed security model appears to have the potential to boost confidence.

Index Terms - - MANETS, key management, authentication, QoS.

1. INTRODUCTION

There are no base stations, wireless switches, or infrastructure services like name, routing, or certificate authorities in mobile ad hoc networks, unlike mobile wireless IP networks. Network topology and administrative domain membership can vary quickly because mobile nodesjoin and depart the network dynamically, sometimes even without notice.. As a result, security services including availability, confidentiality, authentication, access control, integrity, and non-repudiation are critical. Cryptography is the cornerstone for all network security services in MANET,just as it is in other networks, and key management is a critical aspect in ensuring a secure ad hoc network.

In Ad hoc Networks, the absence of sufficient infrastructure and central authority has prompted the use of powerful Key Management mechanisms. The secure administration of keys is known as key management. To ensure optimal data protection, a multitude of Key Management schemes have been created. Threshold cryptography is one of many techniques in which a specific minimum number of users must provide a valid key in order to perform cryptographic operations The number is up to the user's discretion. Any set of k users can compute the function in a k-out-of-n threshold technique, but any set of k1 users cannot. For some applications, such as ordinary information transfer across company departments, a small number of people providing a legitimate key for network access is sufficient, but for others, such as military applications, a significant majority of persons providing a valid key is required infomation. As a result, the threshold is determined by the application. Another significant

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PILL CAMERA

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Abstract: Technology's goal is to mass-produce items at lower costs and higher quality. Current technologies have achieved a portion of it, but manufacturing technology is on a far larger scale. Manufacturing products at a molecular level is the way of the future. In the 1980s, researchers began investigating this topic. Manufacturing at the atomic and molecular level was ridiculed at the time. However, thanks to the development of nanotechnology, we have come close to realising it. PILL CAMERA, for example, is a cancer, ulcer, and anaemia treatment product. In the sphere of medicine, it has caused a revolution. Manufacturing at the atomic and molecular level was ridiculed at the time. However, thanks to the development of nanotechnology, we have come close to realising it. PILL CAMERA, for example, is a cancer, ulcer, and anaemia treatment product. In the sphere of medicine, it has caused a revolution.

This little capsule is safe to pass through our bodies. It captures photos of our intestines and sends them to a computer for analysis. This method can aid in the detection of any digestive system ailment. We've also talked about the disadvantages of the PILL CAMERA and how they can be mitigated by employing a grain-sized motor and a bi-directional wireless telemetry capsule. Apart from that, we looked at how nanotechnology is used to make items.

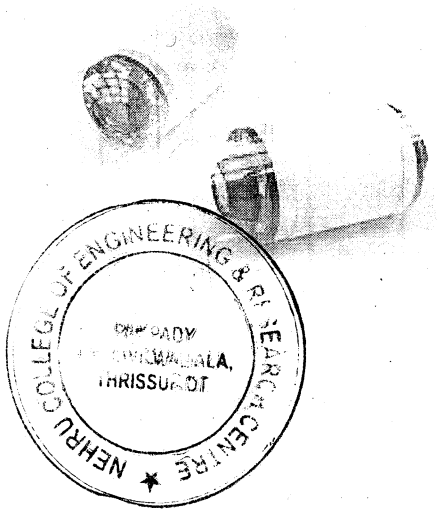
***Index Terms** - Pill Camera, Nanotechnology*

I. INTRODUCTION

Technology is like to the universe expanding. Humans are still thinking more complexly about novel ideas, despite enormous advancements in product manufacture. Casting, milling, grinding, chipping, and integrated fabrication are all methods used to make items with our current technology.

We've manufactured more items at cheaper costs and with greater precision than ever before thanks to these technologies. We arranged atoms in enormous thundering statistical herds throughout the manufacturing of these items. Atoms are the foundation of all produced goods. Manufacturing products at a molecular level is the next step in manufacturing technology. "NANOTECHNOLOGY" is the term for the technology utilised to achieve molecular manufacturing. Nanotechnology is the manipulation of microscopic matter to create useful materials, devices, and systems (nanometre). Nanotechnology is the study of items having nanometre-sized dimensions. Nanometres are billionths of a metre, millionths of a millimetre, or 1/80000 of a human hair width. Intestinal cancer and oesophageal disorders including Crohn's disease are detected via pill camera endoscopy.

Its primary function is to take live colour footage of the small intestine and to detect any digestive system disease at an early stage.



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Screenless Displays: The Emerging Computer Technology

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Abstract *- Screenless display is an emerging new technology, allows users to display and transmit data without the use of a screen or projector has become a good prospect in the near futurefor a wide range of applications. As the name implies it deals with the display of several things without the use of screens using projector. It involves the following 3 different working principles. The Visual image, Virtual retinal display, Synaptic interface. This mainly illustrates and demonstrates how the screen less displays works and its applications in various fields of science. This technology would bring about the revolution in the field of displays and monitors that are costly, huge and are proven difficult to manage the power requirements and constraints. It is also the futuristic technological innovation. Screenless display is a developing display technology that allows users to display and transmit data without the use of a screen or projector.*

Keyword *- Foot, Hologram, Hand, LCD, Screenless, voice.*

I. INTRODUCTION

Screen less display is the present evolving technology in the field of the computer-enhanced technologies. It is going to be the one of the greatest technological developments in the coming future years, Several patents are still working on this new emerging technology which can change the whole spectacular view of the screen less displays. Screen less display technology has the main aim of displaying or transmitting the information without any help of the screen or the projector. Screen less displays have become a new rage of development for the next GEN-X. Screen less videos describe systems for transmitting visual information from a video source without the use of the screen.

II. BACKGROUND

A visual Image screen less display includes any screen less image that the eye can perceive as shown in the following figures. The most common example of Visual Image screen less display is a hologram. Holograms were used mostly in telecommunications as an alternative to screens. Holograms could be transmitted directly, or they could be stored in various storage devices (such as halo discs) the storage device can be hooked up with a halo projector in order for the stored image to be accessed. Debatably, virtual reality goggles and heads-up display in jet fighters (which display images on the clear cockpit window) also are included in Visual Image category. In all of these cases, light is reflected off some intermediate object (hologram, LCD panel, or cockpit window) before it reaches the retina. In the case of LCD panels, the light is refracted from the back of the panel, but isnonetheless a reflected source. The new software and hardware will enable the user to, ineffect; make design adjustments in the system to fit his or her particular needs, capabilities, and preferences. They will enable the system to do such things as adjusting to users' behaviours in dealing with interactive movable type.

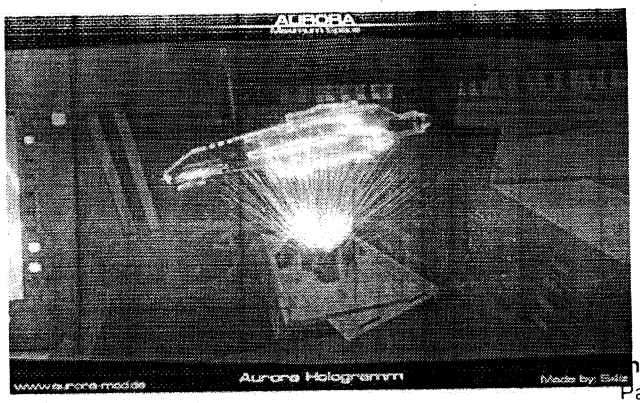

Figure 1: Example of visual Image

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Edge Detection in Text Image Processing

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ABSTRACT

One of the most crucial processes in the analysis of processed picture data is edge detection. Image texture segmentation is a significant issue that arises regularly in a variety of image-processing applications. By detecting the image's boundaries, it can be segmented. This paper discusses some of the algorithms needed for edge detection. Image with texture Edge detection algorithms that work directly for non-textured images are provided. These Edge detection of textured images can also be done by preprocessing the image with discrete transformations. The results of experiments on photos with diverse synthetic and natural textures have been published, along with a comparison of existing approaches. In many computer vision applications, edge detection is the first step. Edge detection dramatically reduces the quantity of data in an image by filtering out undesirable or insignificant data and revealing the important information. These details are used in the detection of objects in images. There are some issues, such as false edge recognition, noise issues, and the absence of low contrast borders, to name a few. The noise sensitivity of first order derivative operators is extremely high. These operators aren't any more efficient than second-order derivative operators. Canny produces excellent outcomes. However, the declivity operator outperforms the canny operator. In comparison to other methods, it takes less time to compute.

Keywords: Image segmentation, Edge detection, Prewitt, Sobel, Roberts,canny,Laplacian

1. INTRODUCTION

The separation of an image into object and background is a fundamental stage in the interpretationof an image by computer vision and image processing systems. Segmentation divides an image into a series of discrete areas that are visually distinct, uniform, and meaningful in terms of some attributes or computations.To facilitate picture analysis, attributes such as grey level, intensity, texture, and colour are used. A large number of people Image segmentation methods can be found in the literature. This is critical work since an organization's output depends on it. Higher-level processing jobs might use the picture segmentation method as input. The approach based on edges is The most often used method for image segmentation. A boundary can be defined as an edge in an image between two distinct regions The rims. Edge detection is a phrase used in image processing and computer vision, particularlyin the fields of feature detection and feature extraction. segmentation of an image for object recognition The technique of finding edges in an image might be complicated.

Edge detection is used to identify points in a digital image where the luminous intensity abruptly changes. To interpret an image in the image analysis process, one must first be able to recognise the edges of each object in the image. An image's edge representation minimises the quantity of data to be processed while preserving essential information about the forms of objects in the scene. The accuracy of detecting significant edges is critical to the success of many image processing and computer vision activities. In low-level image processing, edge detection has been a difficult task.

Edge detection can be done in a varietyof ways, including error minimization, maximising an object function, neural networks, fuzzy logic, wavelet techniques, and Bayesian approaches. picture segmentation, data compression, and image reconstruction are all made easier.

2. Edge Detection Techniques

The edge demonstration of the image decreases the amount of information to be processed, which contains vital information about the object's shape in an image.

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Local fluctuations in visual intensity are referred to as edges. Between the limits of two zones, an edge forms. The most important knowledge can be gleaned from the outskirts.

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WOLFRAM ALPHA

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Abstract : Wolfram Alpha is a question-answering system created by Wolfram Research. It is an online service that directly responds to factual inquiries by computing the answer from structured data rather than delivering a list of documents or web pages that may contain the answer as a search engine could. Stephen Wolfram introduced it in March 2009, and it was released to the public on May 15, 2009. Wolfram Alpha is almost more of an engineering achievement than a scientific one: Wolfram has broken down the set of factual questions we might ask, as well as the computational models and data required to answer them, into basic building blocks — a sort of basic language for knowledge computing if you will. Then, with these building pieces in hand, his system can compute with them — breaking down problems into the basic building blocks and computations required to solve them, and then building up computations and computing the answers on the fly. A text box allows users to submit queries and calculation requests. Wolfram Alpha then uses a core knowledge base of vetted, structured data to compute and infer answers and appropriate visualizations. Thus, Alpha is distinct from semantic search engines, which index a vast number of answers before attempting to match the question to one of them. Wolfram Alpha is based on Mathematica, Wolfram's previous flagship product, which includes computer algebra, symbolic and numerical computing, visualization, and statistics. It is well suited to answering mathematical queries with Mathematica running in the background. The solution is usually presented in a human readable format.

IndexTerms - Mathematica,Wolfram Alpha,search engine,computation

I. INTRODUCTION

Wolfram Alpha is a question-answering system created by Wolfram Research. It is an online service that directly responds to factual inquiries by computing the answer from structured data rather than delivering a list of documents or web pages that may contain the answer like a search engine could. Stephen Wolfram introduced it in March 2009, and it was released to the public on May 15, 2009. The long-term goal of Wolfram Alpha is to make all systematic knowledge instantly computable and available to everyone. We want to be able to collect and curate all objective data, implement every known model, technique, and algorithm, and compute anything that can be computed about anything. Our goal is to rely on scientific advances and other knowledge systems to create a single source for conclusive answers to factual questions that anybody can trust. Many people were startled when Wolfram Alpha, which was released to the public in May 2009, did not function like Google or any other search engine. This is because Wolfram Alpha is a computational knowledge engine, not a search engine. Wolfram Alpha is far from ideal at this time, but it is already a tool that might be useful in the day-to-day work of a typical college student, and it is only going to become better.

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Artificial Intelligence In 3 Dimensional Bio Printing

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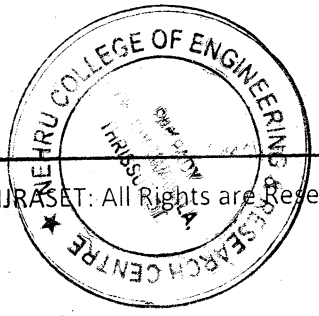
Abstract: *3D printing in full three-dimensional printing also known as additive manufacturing is the process of making three-dimensional solid objects from a digital file. The creation of a 3D printed object is achieved using additive processes. In an additive process, an object is created by laying down successive layers of material until the object is created. Each of these layers can be seen as a thinly sliced cross-section of the object.3D printing is the opposite of subtractive manufacturing which is cutting out hollowing out a piece of metal or plastic with for instance a milling machine.3D printing enables you to produce complex shapes using less material than traditional manufacturing methods. As a result, 3D printing creates less material wastage. "3D Bio printing" or "bio printing" is a form of additive manufacturing that uses cells and biomaterials instead of traditional metals and plastics to create 3D constructs that are functional 3D tissues. But unlike 3D printing, bio printers print with cells and biomaterials, creating organ like structures that let living cells multiply These biomaterials are called bio-inks, and they mimic the composition of our tissues. Bio printing can be applied to a variety of areas including but not limited to regenerative medicine, drug discovery and development, and 3D cell culture.*

Keywords: *Bio printing, Bio ink, Tissue engineering, 3D printing, Artificial intelligence, Machine learning, Regenerative medicine.*

I. INTRODUCTION

Bio 3D printing or simply bio printing technology is the name for Additive Manufacturing used in the medical area. It is made of natural materials rather than plastics or metal, thus the "bio" portion of the name. Bio printing is 3D printing with cells rather than plastics or metals. 3D printed organs, for example, can be made with precision tailored tissue structures. Layers of biomaterials or engineering tissue are built up to form a three-dimensional structure model of three dimensions The layers can be created in a variety of ways, some of which are described below .Others use liquid and solidify it, similar to the most prevalent 3D printing process, FDM just as resin 3D printing does, UV light is used. Three-dimensional (3D) printing technologies have recently become commonplace in the industry and our everyday lives .To define 3D printing at the biomedical level, the term 3D bio printing was coined. Machine learning is being utilized to improve 3D printing processes such as process optimization, dimensional accuracy analysis, manufacturing fault detection, and material property prediction. However, machine learning has been used in 3D bio printing techniques in only a few research .The demand for organ transplants has increased, while the amount of available organs for transplantation has remained constant around the world. 3D bio printing of tissue and organs is a novel topic in tissue engineering and regenerative medicine that aims to alleviate the global lack of organ donors that patients in desperate need of a transplant face. A bio printer uses biomaterials and embedded cells to create complex and functioning three-dimensional (3D) organ or tissue constructs for regenerative medicine. Furthermore, traditional surgical 3D models are built of stiff plastic or rubber, making it impossible for surgeons to interact with real organ or tissue-like replicas.

Finding appropriate biomaterials and printing technologies can thus speed up the printing of complex organ structures as well as the construction of realistic models to fine-tune surgical techniques and tools before surgery .Furthermore, printing parameters in the bio printing process (such as printing speed, dispensing pressure, and nozzle diameter) should be tuned. As a result, machine learning (ML) technology can be an effective tool for optimizing the many bioprinting parameters. It is, in essence, a biomedical application of rapid prototyping or additive manufacturing technology .Additive manufacturing allows a digital model of an object to be transformed into physical reality. As a result, information technology plays an important role in organ printing.3D printing combined with artificial intelligence is allowing for new and intriguing additive manufacturing applications.



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PIXEOM A CLOUD OF SECURE PRIVATE OR PUBLIC CLOUD DEVICE TECHNOLOGY FOR DATA PRIVACY

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Abstract: *Pixeom is a prototype gadget with the objective of giving alternative cloud services .Through the usage of a Pixeom X device, users can quickly create, access, and share their Content from anywhere while engaging with a worldwide community. Pixeom is the first company to not only integrate various cloud services in a box, but also to connect them globally, building a growing network of users and content that eliminates the need to sell personal data or collect membership fees to stay online via a data centre. With all of the recent news about Snapchat, Target, Dropbox, and the NSA, people are starting to realise the true costs of entrusting their data to others. Computer .Data centres have evolved into a repository of personal information that is frequently targeted by hackers or handed out to anyone with a badge who requests access. A prototype gadget aimed at providing alternative cloud services that don't force you to hand over control of your personal data in exchange for a handy digital service. Personal cloud platform based on Raspberry Pi. Users may set up their own personal cloud storage and other applications at home with the original Pixeom gadget. Pixeom's technology is also built on OpenStack, a major open-source initiative that assists businesses in managing their own data centres. Instead of employing hefty cloud service equipment, Pixeom is mostly used in cloud services. A gadget that safely stores all of your digital stuff and expands when you require more space. A device that contains whole discussion boards, allowing for secure communication and socialisation.*

index times:*Pixeom ,cloud storage ,cloud services,data privacy*

I.INTRODUCTION

Pixeom is a personal, encrypted cloud device that connects to your home Internet via Ethernet and provides cloud storage for your digital content without the need for third-party intermediaries, as well as unlimited storage expansion via chaining together

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ARTIFICIAL INTELLIGENCE ON THE BATTLEFIELD

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Abstract: AI is becoming omnipresent in day-to-day existence. An increasing number of robotic vehicles and autonomous weapons can operate in combat zones too hazardous for human combatants. Intelligent defensive systems are progressively ready to recognize, investigate, and answer attacks quicker and more successfully than human administrators can. Artificial intelligence has burst upon the national-security scene with suddenness and intensity. This spike of interest is driven to some extent by the individuals who view AI as a progressive innovation, comparable to the discovery of fire, electricity, or nuclear weapons. This paper discusses background of AI, the benefits, and risks of AI in warfare, how can AI help in battlefield health care, and a brief study of two prominent AI wars.There are some genuine qualms about the legal and ethical implications of military forces using AI in war or even to upgrade security in peacetime. The most obnoxious protests have spun around the possibilities of machines killing individuals without the direct endorsement of human operators and, possibly, even without their oversight or capacity to intercede assuming that weapons select some unacceptable targets. Intelligent defensive systems are progressively ready to recognize, investigate, and answer attacks quicker and more successfully than human administrators can.

IndexTerms: Artificial intelligence,Big data,Machine learning

I.INTRODUCTION

"Whoever rules the waves, rules the world"

-Alfred Mahan

The field of Artificial Intelligence has advanced at an ever-increasing pace over the last two decades. Accordingly, advances utilizing AI have already contacted numerous parts of our lifestyles. Smartphones, mobile mapping and navigation systems, natural language interaction with computers, targeted online marketing, and tailored information campaigns in social media are a few of the many ways that AI is becoming omnipresent in day-to-day existence. The manifestation of AI is inspiring worldwide powers to set themselves up to control and maneuver trend-setting innovations. The prevalence of AI is the new paradigm in the middle between superpowers.

It ought to be no big surprise, then, that AI offers great promise for national defense. Furthermore, big data analysis and decision support systems offer the guarantee of processing volumes of data that no gathering of human analysts, but enormous, could consume and in this way assist military decision-makers with picking better game plans more quickly. Therefore, the United States, China, Russia, and other high-level military powers are creating military applications for AI [1]. This could change the very character of warfare in the coming years, actually, it already happened during the recent battle between Russia and Ukraine. Repeating the nineteenth-century maritime specialist Alfred Mahan ("Whoever governs the waves manages the world"), Russian President Putin has stated that the country that guidelines in AI "will be the leader of the world" [2]. China's leader is less frank on this, however, has committed China to turning into the prevailing AI power by 2030 [3]. There are mounting fears of a "Sputnik moment," which could maneuver many nations to tragically be underprepared to oversee new AI challenges.

But thoughtful people have communicated genuine qualms about the legal and ethical implications of military forces using AI in war or even to upgrade security in peacetime. The most obnoxious protests have spun around the possibilities of machines killing

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BRAIN COMPUTER INTERFACES FOR COMMUNICATION AND CONTROL

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Abstract : Years ago, people imagined a magical world in which the ability to interact with various machines through thought was possible. Most people regarded this magical world as myth and fiction. But now, with advances in neuroscience and brain imaging technology, scientists have shown great interest in making this fantasy a reality. As a result, a brand new window changed into opened for direct interplay with the mind via BCI (Brain-Computer Interface).The human mind is of the dimensions of a deflated volleyball which weighs approximately three pounds. We stay at a time whilst the disabled are at the main fringe of a broader societal fashion towards using assistive generation called Brain Computer Interface. Brain computer interface (BCI) is a collaboration among a mind and a tool that allows alerts from the mind to direct a few outside activity, consisting of manage of a cursor or a prosthetic limb. BCI is a future technology that helps people communicate with the world directly from their inner thoughts. It is considered one of the fascinating breakthroughs for human society because it could benefit the medical world, the tech industry, and even the military. The interface allows an instantaneous communications pathway among the mind and the item to be managed with the arrival of miniature wi-fi tech, digital devices have stepped up the invasion of the frame via revolutionary techniques. The purpose of this study is to know how this mechanism is supported by the brain.

IndexTerms - Brain computer interface, Electroencephalography, Magnetoencephalography, **Functional magnetic resonanace imaging.**

I. INTRODUCTION

A Brain-Computer Interface (BCI) presents a brand new communique channel among the human mind and the computer. The one hundred billion neurons talk via minute electrochemical impulses, shifting patterns that produce movement, expression, words. Mental activity results in modifications of electrophysiological signals. The BCI system identifies these changes and converts them into control signals. For cursor control, for example, signals travel directly from the brain to the mechanism that directs the cursor, rather than the usual route through the body's neuromuscular system from the brain to the mouse's fingers.

By reading signals from an array of neurons and using computer chips and programs to convert the signals into actions, BCI enables a person suffering from paralysis to write a book or operate an electric wheelchair or prosthetic arm with only their thoughts. Many physiological disorders, such as the amyotrophic lateral sclerosis (ALS) or high-level spinal cord injuries can interfere with communication between the brain and the body. This is where the brain-computer interface comes into play, making it easy to create useful services and applications in real time.

How the brain turns into action?

The reason BCI works is because of the way our brain's function. Our brains are filled with neurons, individual nerve cells that are interconnected by dendrites and axons. Whenever we think, move, feel, remember something, our neurons fire. This is done by small electrical signals traveling from neuron to neuron at 250 miles per hour. The signal is generated by the difference in potential carried by ions on the membrane of each neuron. If you've got an itch and also you attain to scratch it; you acquired a stimulus (an itch) and reacted in reaction to the stimulus via way of means of scratching. The path a signal takes is sequestered by a substance called myelin, but some electrical signals escape. Scientists can detect these signals, interpret their meaning, and use them to control devices. It may work in other ways as well.

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NEUROMORPHIC COMPUTING

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Abstract : This study has been undertaken to investigate the determinants of stock returns in Karachi Stock Exchange (KSE) Compared to von Neumann's computer architecture, neuromorphic systems offer unique and novel solutions to artificial intelligence. Inspired by biology, this novel system has applied the modeling theory of the human brain by connecting neurons made with synapses to reveal new concepts of neuroscience. Many researchers have invested heavily in neuro-inspired models, algorithms, learning methods, neuromorphic system testing systems and using many compatible applications. Recently, some researchers demonstrated the power of Hopfield algorithms in some major hardware projects and saw significant progress. This paper introduces a comprehensive review and focuses on the Hopfield algorithm model and potential developments in new research programs. Finally, we conclude with a broad discussion and a working framework for the latest system prospects to make it easier for engineers to better understand the above-mentioned model in terms of building their performance-oriented projects.

IndexTerms - : artificial intelligence, synapse, Artificial neural network. ,spiking neural network

I .INTRODUCTION

Neuromorphic engineering, also called Neuromorphic computing, is a type of neuromorphic engineering. It refers back to the development of computer-based computer programs found in the human mind and anxious gadget. The concept of Neuromorphic computing was developed using Caver Mead in the 1980s. It says about the use of big-scale-integration (VLSI) systems that include electrical anolog circuits to mimic the neurobiological structures present in a shocking machine. As the name suggests, neuromorphic computing uses a model that is stimulated by brain function. Neuromorphic computing can completely change everything about it. Neuromorphic computing technology will be important for the future of computing, but much of the work in neuromorphic computing is focused on hardware development. Here, we review the latest results on computer computer neuromorphic algorithms and applications. We highlight the features of computer neuromorphic technology that make them attractive for the future of computing and discuss the potential for future development of algorithms and applications in these systems.

II.VON NEUMANN ARCHITECTURE

Historically there were 2 types of computer systems
• Fixed program computers
• Computer software stored
System computers are very accurate and cannot be configured. Eg: counters
Stored application computers are able to perform unusual tasks as most packages are stored on them.
Modern computer programs are based on the concept of a stored system. submitted by John von Neumann. here programs and records are stored in a separate archive called reminiscences. It is in this way that a computer made of

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SCRAM JET ENGINE FOR HYPERSONIC FLIGHT

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Abstract: With the introduction of a new environment, an individual seeks speed to fulfill his own expectations and demands, but this is not possible with standard jet engines due to numerous issues with jet engine speed, and this breeds a very high speed engine that even reaches hypersonic speeds, known as a scramjet engine. A scramjet engine is designed in such a way that it reaches hypersonic speed with the exception of working parts. A scramjet (supersonic combustion ramjet) is used in place of a ramjet when pressures and temperatures in slowing the approaching flow to subsonic speeds for combustion is no longer as effective when supersonic flight speeds increase.. Current turbojet engines are incapable of propelling an aircraft to hypersonic speeds because the spin shafts and compressors would collide. The development of Scramjet engines is a significant step forward in ISRO's efforts to develop future space transportation technologies. For reusable launch vehicles, air breathing propulsion is a solution for a powered long return cruise flight. In addition, DRDO is building the Brahmos II Cruise Missile, which uses the same jet engine technology. This needs the development of ramjet or scramjet technology, that would help India execute sophisticated space missions in the future. India has long been working on scramjet technology, and we conducted ground tests in 2006 that confirmed the engine's design. India is presently the world's fourth largest economy nation to claim the Scramjet Engine's successful testing. Russia was the first country that state that the Scramjet Engine had been successfully tested. In 1991, Russia was the first country to claim a scramjet flight test, followed by the United States and the European Space Agency.

Index Terms – **Aircraft propulsion, Engines, Spinning, Shaft, Compressors, Australia, Fuels, Combustion**

I.INTRODUCTION

Man has been in severe need of air since the demise of human civilisation. The advent of flying machines has made this dream a reality. The plane doesn't satisfy him; the only thing which appeals to him is speed. Because he wanted to go high and swiftly, jet engines were created. The desire for speed and strength is growing. So the terrible beast's master still want something new. One of it's diamonds in his hands is the recently developed "scram jet engine". The scramjet (hypersonic combustion ramjet) is a ramjet air breathing fighter jet that burns with supersonic airflow . A scramjet, like a ramjet, depends on high vehicle speed to forcefully compress intake air during combustion (hence the name), but since a ramjet, it does not use a turbocharger, which uses shock cones to decelerate its air to subsonic velocities before combustion, a scramjet uses shockwaves produced by its ignition source to slow the airflow. This permits the scram jet can operate at extremely high speeds while being efficient.

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Internet Of Things Based Intelligent Bin for Smart Cities

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ABSTRACT

The Internet Of Things is a means of connecting objects or things through wireless communication. IoT is being used for a wide range of functions. The Internet of Things is helping cities around the world become smarter. This is a new technological trend. Obstacle detection, object detection, traffic control, activity tracking, baby examination, and home light monitoring are all examples of smart cities. One of the goals of smart cities is to maintain a clean and tidy environment. Waste management is one the main problem faced in the world. The issue in the waste management is that the garbage bin at public places gets overflowed before the next cleaning processes. It causes bad odor and ugliness in the surrounding and in turn spreads diseases. The cleanliness and hygiene of the region is maintained by mounting these smart dustbins. This aim is not fulfilled without the garbage bin management system. Hence the paper "IOT Based Intelligent Bin for Smart Cities" has been developed. Bin management is one of the major applications of IOT. Main aim of the project is to develop an efficient garbage system for garbage disposal .This paper describes the application of "smart bin" in managing the waste collection system of an entire city. Here sensors are connected to the all the bins at different areas. It senses the level of garbage in bin. When it reaches threshold a message is sent via GSM to the concerned person to clean it as soon as possible. After cleaning the dustbin, the driver confirms the task of emptying the garbage.

INDEX TERMS - Sensors, Control systems, Smart cities Optimization, Arduino Uno, Garbage system, Threshold level.

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DETECTION OF CREDIT CARD FRAUD USING QUERY BASED ALGORITHM

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Abstract: - Data mining techniques have been used extensively to detect insurance fraud and financial fraud, which is a growing area of tremendous importance. Financial deception will pay special attention to spotting fraudulent credit card transactions. Credit utilisation Due to significant advancements in internet commerce, the use of credit cards has expanded dramatically. Technology. Credit cards have become the most popular method of payment for both online and offline purchases. As with any ordinary purchase, the number of incidences of fraud related with it is increasing by the day. In this Using a Hidden Markov Model to sequence operations in credit card transaction processing (HMM) and demonstrate how it might be used to detect fraud. Initially, an HMM is trained with a cardholder's regular behaviour. An incoming credit card transaction is considered fraudulent if the trained model does not accept it with a high enough probability. It also ensures that legitimate transactions are not denied. Credit cards are one of the most convenient methods of payment when shopping online. Payment is made by providing information such as the card number, security code, and expiration date of the credit card while shopping online. Every cardholder's spending method is modelled using HMM to correct the risk elements of using the credit card. Data encryption is commonly used to protect sensitive data from security threats such as "attacks on confidentiality. "In the present, Large text messages need a long time to encrypt before they can be transferred, causing a delay in subsequent information transmission. Security dangers include those that occur during the transmission of secret information across insecure communication networks.

Keyword - Computer Science Cybernetics, Credit Card Fraud, False Positive, Fraud Detection System, Thresh hold value QBA encryption, True Positive.

I. INTRODUCTION

In credit card transactions, 'fraud' refers to the unlawful and unwelcome use of an account by someone other than the account owner. To stop this misuse, necessary preventative steps should be adopted, and the behaviour of such fraudulent acts can be analysed to decrease it and defend against future occurrences. In other words, credit card fraud occurs when a person uses another person's credit card for personal gain while the card's owner and issuing authorities are ignorant.

1.Fraud Detection System

Fraud is defined as improper or criminal deception intended to achieve monetary or personal advantage or to harm another person without necessarily resulting in immediate legal consequences. The fraught hindrance and fraud detection systems are the two basic strategies for preventing frauds and losses due to fraudulent activity. Fraud prevention is a proactive strategy aimed at reducing the prevalence of fraud. Once the fraudsters have overcome the fraud deterrent measures and have begun deceptive dealings, fraud detection systems come into play. MasterCard fraud can take several forms, including direct thievery, application fraud, and counterfeit cards (where the cardboard holder absence). In on-line fraud, communications are formed remotely and solely where the card's details are required. A manual signature, a PIN or a card imprint don't seem to be needed at the time of purchase, though hindrance mechanisms like CHIP&PIN decrease the fallacious activities through straightforward thieving, counterfeit cards and NRI. Online frauds (Internet and order frauds) are still increasing in each quantity and range of transactions. There has been a growing quantity of monetary losses to MasterCard frauds because the usages of the credit cards become a lot and lot of common things.

2.Introduction of Data mining

Extraction of hidden predictive information from massive datasets is a strong new technology that has a lot of promise for helping firms focus on the most critical data in their data warehouses. By allowing enterprises and knowledge-driven decisions, data mining technologies are able to forecast future trends and behaviours with ease. Data mining's automated and prospective analysis go beyond the retrospective analysis provided by retrospective methods. As a result, data mining technologies can answer all of the business issues that were before difficult to answer. They explore databases for hidden patterns and uncover predicted data that experts may overlook because it falls outside of their assumptions. The majority of businesses now collect and refine vast amounts of data.

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LIDAR Technology

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Abstract: ***Since the 1960s, LiDAR (Light Detection And Ranging) technology has been in use. LiDAR has become a common sensor as technology has advanced. Automation, agriculture, archaeology, Information technology and the quantification of various atmosphericcomponents all use LiDARs. The present manuscripts cover the operation of LiDAR, its various varieties, history, and various applications. One may determine the distance between different objects in space and construct a 3D digital representation of the region in front of LiDAR using LiDAR readings. Lidar mapping is a well-known technique for quickly generating precise georeferenced spatial data about the Earth's shape and surface features. Lidar mapping systems and their underlying technology have recently progressed, allowing scientists and mapping professionals to investigate natural and built environments at sizes never before feasible, with greater accuracy, precision, and cost effectively provide the best aspects of the culture of human civilization.***
Keywords: *LiDAR, LASER, RADAR*

I. INTRODUCTION

Lidar has proven itself as a reliable technology for gathering extremely dense and precise elevation data over landscapes, shallow-water areas, and project sites. This active remote sensing system is similar to radar, but instead of radio waves, it uses laser light pulses. Lidar is generally "flown" or collected from planes, allowing it to collect points quickly across broad areas. Lidar is also acquired from stationary and mobile platforms on the ground. These data collection methods are popular among surveyors and engineers because they can produce extremely high accuracies and point densities, allowing for the creation of precise,realistic three-dimensional representations of railroads, roadways, bridges, buildings, breakwaters, and othershoreline structures .There are two types of detection in remote sensing Active and passive.

The Lidar system comes under active system as it directs energy at a target and takes reading from the response .Lidar emit light pulses and detect the resultant data to produce data or output based on requirement. The data is usually collected when there is a clear environment example being a clear sky during night. This is done to produce a clear data devoid of major errors. Lidar devices can instantly measure the Earth's surface at sample rates exceeding 150 kHz (i.e., 150,000 pulses per second). A point cloud is a tightly spaced network of extremely precise georeferenced elevation points that can be used to produce three-dimensional reconstructions of the Earth's surface and features. Many lidar systems work in the near-infrared region of the electromagnetic spectrum, despite the fact that certain sensors function in the green band to penetrate water and detect bottom features. In areas with generally clear water, these bathymetric lidar systems can be used to estimate seafloor heights.

II. LITERATURE SURVEY

Spinhirne et al. created Micro Pulse LiDAR. This technology was a solid-state LiDAR for profilingatmospheric cloud and aerosol scattering that was eye-safe and small. The Micro-planned pulse's applications .LiDAR refers to scientific investigations and environmental monitoring that could allow users to work full-time on their projects .cloud and aerosol height observations taken without human intervention structure. Lim et al. employed the LiDAR for their research .physical geography processing This system was implemented.to get immediate access to forest features like canopyheight calculated from LiDAR dataDirect c Above-ground biomass and canopy volume could be modelled using height. Access to forest ecosystems' vertical nature opened up new possibilities for forest monitoring, management, and planning.

Hodgson et al. [3] demonstrated an empirical evaluation and error budget of accuracy in Airborne LiDAR- derived elevation. As part of a village-wide large-scale mapping project for Richland village in South Carolina, an accuracy assessment of a recently acquired LiDAR generated data set was undertaken in this study. An Optech ALTM (Airborne Laser Topography Mapper) 1210 system was also used to collect terraindata.

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EDGE COMPUTING LOT FROM HPE INTELIGENCE EDGE

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Abstract: The proliferation of Internet of Things (IoT) and the success of rich cloud services have put pressure on a new computer paradigm, edge computing, that requires internal data processing on the edge of the network. Edge computing has the ability to address the need for response time, battery life limit, saving bandwidth costs, and data protection and privacy. In this paper, we presents a computer definition at the end, followed by a few research examples, from the clouds loading on a smart home and city, with shared edges to create a seamless feel computer. Finally, we introduce a number of challenges and opportunities in the field of edge computing, tool hope this paper will draw public attention and encourage further research into this. With Digital Transformation and a growing technology in an effort to empower everything "smart" - cities, agriculture, automotive, health, etc. - within destiny calls for a large Internet of Things (IoT) sensor at the same time as facet computing will force launch. The proliferation of Internet of Things (IoT) and the acquisition of rich cloud offerings have furthered the idea of a brand new laptop, facet computing, which requires data processing in network rims. Edge computing has the potential to address issues such as call time, battery durability, store bandwidth costs, and information security and privacy. In this paper, we provide a definition of facet computing, which is seen in the form of examples of other studies, from cloud migration to a smart home and city environment, and the limit of collaboration to establish the concept of facet computing. Finally, we offer many challenging situations and opportunities within the facet computing industry, and we wish this paper to benefit the public interest and encourage more than just further studies in this regard.

Index Terms **- Edge computing, Cloud computing, IoT**

I. INTRODUCTION

CLOUD computing has tremendously changed the way we live, work, and study since its inception around 2005. For example, software as a service (SaaS) instances, such as Google Apps, Twitter, Facebook, and Flickr, have been widely used in our daily life. Moreover, scalable infrastructures as well as processing engines developed to support cloud service are also significantly influencing the way of running business, for instance, Google File System, Map Reduce, Apache Hadoop, Apache Spark, and so on. Internet of Things (IoT) was first introduced to the community in 1999 for supply chain management, and then the concept of "making a computer sense information without the aid of human intervention" was widely adapted to other fields such as healthcare, home, environment, and transports. Now with IoT, we will arrive in the post-cloud era, where there will be a large quality of data generated by things that are immersed in our daily life, and a lot of applications will also be deployed at the edge to consume these data. By 2019, data produced by people, machines, and things will reach 500 zettabytes, as estimated by Cisco Global Cloud Index, however, the global data center IP traffic will only reach 10.4 zettabytes by that time. By 2019, 45% of IoT-created data will be stored, processed, analysed, and acted upon close to, or at the edge of, the network. There will be 50 billion things connected to the Internet by 2020, as predicted by Cisco Internet Business Solutions Group. Some IoT applications might require very short response time, some might involve private data, and some might produce a large quantity of data which could be a heavy load for networks. Cloud computing is not efficient enough to support these applications. With the push from cloud services and pull from IoT, we envision that the edge of the network is changing from data consumer to data producer as well as data consumer. In this paper, we attempt to contribute the concept of edge computing. We start from the analysis of why we need edge computing, then we give our definition and vision of edge computing.

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Design of Multidimensional Data Model for the Study of Data Mining Techniques in Agriculture

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ABSTRACT

Agriculture is still an important sector in many countries. It identifies the world's major food source. However, it faces a major challenge: increasing productivity and greater efficiency while promoting sustainable use of natural resources, reducing environmental degradation and adapting to climate change. Therefore, it is very important that you move from traditional farming methods to modern agriculture. Smart Agriculture is one of the solutions to address the growing demand for food while meeting the needs of sustainability. In intellectual agriculture, the role of knowledge is increasing. Information on weather conditions, soil, diseases, insects, seeds, fertilizers, etc. contributes significantly to economic development and sector sustainability. Smart management involves collecting, transferring, selecting and analyzing data. As the value of agricultural data grows exponentially, robust analytical methods capable of processing and analyzing large amounts of data for more reliable information and more accurate forecasts are essential. Data Mining is expected to play a major role in managing real-time data analysis with big data. The purpose of this paper is to review additional studies and research on intelligent agriculture using the latest Data Mining practice, to solve various agricultural problems.

Keywords – Agriculture, Data mining, Multidimensional.

INTRODUCTION

Today agriculture is one of the most important problems in the international economy and requires some technological advancement in this century. The processing of agricultural data in today's world is an important requirement for decision makers and farmers. Using a database of agricultural knowledge is a major challenge for researchers. The main objectives of this study were to design a multi-dimensional data model for agricultural data storage and to use agricultural data mining methods. Usually when using a top- down or bottom-up data storage method, here we use a combination of both top-down and bottom-up methods used to design agricultural data repositories. The database is converted to a multi-dimensional form, this model is known as a cube. These cubes are designed to use fact tables and size tables and are used for On-line Analytical Analysis (OLAP). Here we can drill down and drill the information found in the cubes. Another important function included in these cubes is that Drill through, using these users you can discover interesting or confusing trends while analyzing data. In this study, we use On-line Analytical Mining (OLAM) technology to analyze practical questions, because agricultural data is very large in size. In order to analyze effective queries we use data mining techniques such as aggregation, classification and Online Analysis Techniques. If there is a need to analyze large amounts of data, a parallel computing paradigm can be used to accomplish these tasks with reduced calculation time and memory requirement. The traditional k-means algorithm does not work well when it works on a large number of data sets, so we present the parallel k-means algorithm for designing and testing at different distance levels.

LITERATURE SURVEY

Swati Heera and P.s. Deshpande make a research on "Data Analysis using Multidimensional Modeling, Statistical Analysis and Data Mining on Agriculture Parameters" and describe that agricultural data production has increased over the years in order to overcome the impact of agricultural boundaries to implement and control agricultural production. This data is usually spatio- temporal and may have additional dimensions such as agricultural parameters (agricultural land, arable land etc.), environmental features (Co2 extraction etc.) and local features (region, region etc.). It is a challenging task to analyze this growing data and produce useful results. Various methods are available to analyze data using different parameters to produce results. In this paper they first construct a multi-dimensional data model and then use multi-dimensional analysis, mathematical analysis (as a combination) in a multidimensional model and data mining methods (such as mining lawson related data. Our analytical approach enables us to model and apply advanced techniques such as multidimensional data analysis, data mining and data mining to extract information from this model. There are various data collection agencies such as the World Bank, the IMF, the Department of Economics and

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The Emergence of Decentralized Business Models: Blockchain Interruption and Decentralized Finance

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Abstract: *Blockchain technology has the ability to lower transaction costs, build distributed trust, and empower decentralised platforms, providing a foundation for new decentralised business models. Blockchain technology enables the growth of decentralised financial services in the financial industry, which are more decentralised, inventive, compatible, borderless, and transparent. Decentralized financial services, driven by blockchain technology, have the potential to expand financial inclusion, allow open access, stimulate permissionless innovation, and open new doors for entrepreneurs and innovators. In this paper, we examine the advantages of decentralised finance, as well as existing business models, obstacles, and limitations. Decentralized finance, as a new area of financial technology, has the potential to transform current finance and provide a new landscape for entrepreneurship and creativity, exhibiting the benefits and drawbacks of decentralised business models.*
Keywords: *blockchain; decentralized finance; decentralized platform; decentralization; fintech.*

I. INTRODUCTION

Intermediaries are frequently crucial in lowering transaction costs and broadening transaction options. Intermediaries frequently assist transacting parties in finding each other, establishing confidence, and settling transactions in economic transactions[1]. Transacting parties may be unable to establish contacts, make contracts, or enforce agreements without the use of intermediaries. Nonetheless, intermediaries typically have significant authority over economic transactions, and they might use that power to further their own interests, creating concerns about their monopoly power[2]. How human society handles dominating intermediaries in economic transactions is characterised by a tension between the necessity for efficient transactions and the fear of monopoly power. This tension is most evident in the financial system, where major financial organisations facilitate and manage financial transactions.

Financial institutions have played a critical role in mediating and organising economic transactions that would otherwise be difficult to complete due to transaction costs for centuries [3]. By connecting market participants and establishing trust, financial institutions lower transaction costs [4]. Financial technology (FinTech) has begun to fill several tasks previously held by huge financial institutions as we move towards the digital economy. Digital technology can cut transaction costs, broaden transaction scope, and enable peer-to-peer transactions in some situations, sparking a new wave of FinTech innovation [5]. FinTech has reduced the necessity for financial institutions, but it has not eliminated the need for middlemen. It frequently replaces one intermediary (such as a financial institution) with another (such as a technology company). If decentralisation and disintermediation continue to gain momentum, blockchain-based decentralised finance could be the next step. Recent advancements in blockchain technology have paved the way for a new paradigm based on decentralisation and disintermediation. Through dispersed trust and decentralised platforms, blockchain technology can remove the need for intermediaries in financial transactions, allowing for peer-to-peer transactions. As a result, blockchain technology has the potential to significantly expand the breadth and efficiency of peer-to-peer transactions, allowing previously unviable business models to become viable. Financial services can become more decentralised, inventive, interoperable, borderless, and transparent thanks to blockchain technology.

This new paradigm is not the same as the one based on transaction costs (TCE). For starters, TCE emphasises opportunism, whereas this new paradigm is based on distributed trust [6], a type of trust that "flows laterally across persons" without the need for pre-existing trusted connections [7]. Because transactions recorded on a blockchain are authentic, immutable, and verifiable—they have been certified by distributed consensus and are safeguarded with powerful cryptography [8], blockchain technology can establish distributed trust. As a result, a blockchain can act as a single source of truth for all parties involved in a transaction, allowing for more efficient peer-to-peer transactions. Second, TCE acknowledges the functions of hierarchy and intermediaries in lowering transaction costs, but this new paradigm focuses on decentralisation and disintermediation to lower transaction costs [9].

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A REVIEW OF EDGE MACHINE LEARNING ALGORITHM FOR ARTIFICIAL INTELLIGENCE ENABLE SYSTEM AND IOT DEVICES

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Abstract: In a few years, billions of connected gadgets will be installed in our homes, cities, automobiles, and industries, transforming the globe. Users and the environment will interact with devices with restricted resources. Many of these devices will use machine learning models to decipher the meaning and behavior of sensor data, as well as to make accurate predictions and judgments. The bottleneck will be the high number of linked things, which may cause the network to become congested. As a result, machine learning techniques must be used to include intelligence on end devices. By allowing computations to be done close to data sources, deploying machine learning on such edge devices reduces network congestion.The purpose of this paper is to provide an overview of the field. By allowing computations to be done closeto data sources, deploying machine learning on such edge devices reduces network congestion. The goal of this paper is to give a review of the key strategies for executing machine learning models on low-performance hardware in the Internet of Things paradigm, paving the way for the Internet of Conscious Things. The main purpose of this paper is to define the state of the art and envisage development needs forsystems that apply edge machine learning on Internet of Things devices. Furthermore, an example of edge machine learning implementation on a microcontroller, also known as machine learning on the edge, will be presented.

IndexTerms - Artificial intelligence; machine learning; Internet of Things; edge devices; deep learning

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Cloud Computing – Based Image Data Model Optimization Approach

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ABSTRACT - The amount of data has grown to incredible dimensions in our modern age of data explosion. The majority of these files are digital image files. The desire for networked work and living is growing in tandem with scientific and technological advancements. In both life and work, cloud computing is becoming increasingly vital. This research investigates visual data recognition models for cloud computing. In a cloud computing platform, the parallelization and task scheduling of the SCRC remote-sensing image classification model based on spatial correlation regularisation and sparse representation are investigated. In cloud computing mode, first, cloud detection technology is used in conjunction with the dynamic properties of the edge overlap region. The SCRC method is developed on a single machine for picture edge overlap region identification, and its time performance is experimentally evaluated, providing a foundation for parallelization research on the cloud computing platform. Finally, the SCRC-SK algorithm's speedup and expansion ratio are estimated through experiment, and SCRC-MR and SCRC-SK are compared. The simulation results show that the method of picture edge overlap detection is more accurate and image fusion is better than prior methods, which increases image recognition ability in the overlap region and illustrates the performance improvement of the SCRC-MR algorithm under scheduling. This solution corrects Hadoop's present scheduler's flaws and can be included into future remote-sensing cloud computing platforms.

KEYWORDS : Cloud computing, Data model, Image processing, Optimization method,SCRC.

I. INTRODUCTION

The process of proposing a new concept is usually gradual, and cloud computing is no exception. Various industries produce a large amount of multimedia data every day, and the majority of this data comes from digital image data, thanks to the rapid development of information technology and image data collection technology. Traditional stand-alone image processing, faced with the explosive growth of digital image data, has a number of issues, including slow processing speeds and poor concurrency. As a result, the traditional image processing mode will not evolve to meet the needs of users, and a new effective image processing mode will be required. We reveal a map-based ownership plan for multiple copies of dynamic data in this journal that has the following features: the CSP does not cheat by giving fewer copies to the client, dynamic data outsourcing is supported, and block-level operations like modifying and inserting blocks are supported[1][2].

Cloud computing is a widely adopted Internet-based computing model in which computing resources are provided as dynamic, scalable, and virtualized services. Cloud computing is a type of distributed computing that entails breaking down large data-processing programs into countless small programs over a network "cloud" and then processing and analysing such small programs using multiple servers. The user receives the outcome. in cloud computing the model technique for optimising vast image data in cloud computing can be accurate and acceptable. Cloud computing has the ability to extract useful and valuable data and make it trustworthy and convincing. The process of processing image data models in big data and cloud computing might provide new and challenging massive data picture theory and assistance tools via using intelligent optimization algorithms to solve image data model problems. The coordination of several computer resources is at the heart of cloud computing. Users can receive an unlimited number of resources over the network, and resources received at the same time are not constrained by geography or time. This makes it easier to modify image processing software code and to use different image processing methods.

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AN ADAPTIVE SMARTPHONE ANOMALY DETECTION MODEL BASED ON DATA MINING AND CLASSIFCATION TECHNIQUE

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ABSTRACT

Malicious applications mainly focus on the smartphone. The malware has become a major threat to android applications. The research on malicious application detection has a wide reach in real world systems and it helps clients to recognize the unethical applications. In this paper, we use data mining with networking traffic to identify the malicious networking behaviour. Apriori algorithm used to extract network traffic from network data, and malware functionalities examined. Then it embraces density-based local outlier factor (LOF) Clustering algorithm implemented to form a detection model. The proposed model can be used for daily smartphone checking and evaluation.

KEYWORDS :Anomaly detection, Apriori, Local outlier factor, Malware

I.INTRODUCTION

Smartphone carries valuable information and has features such as excellent portability, extensibility and functionality. Mobile devices are used for web surfing. As a result, hackers aim at smartphone, Trojan virus the largest type of virus in smartphones. These trojan virus will affect the user's information and try to download and install other malware software. Mainly malware detection methods are categorized into three categories -static analysis, dynamic system-level behavior, network level behavior detection. Although the practical and theoretical malware detection are found there is still some limitations in them. Any version of smartphone based on any kind of operating system, will produce network behavior as long as it connected to network. We also remember that network traffic is a major carrier of network system information including recording. Smartphone usage mainly on network traffic. Since smartphone usage Therefore we will identify malware by analyzing the critical behavior of application software in To overcome these challenges such as lack of sufficient labeled traffic data, use intrusion detection system is installed as a client on smartphone.To deal with these challenges, we introduce a data mining-based anomaly detection (ADMDM) which detects smartphone anomaly by external network traffic

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EFFECTUAL ILLNESS ANALYSIS USING HURISTIC CLASSIFICATION METHODOLOGIES IN DATAMINING

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Abstract : Several combinations of database and machine learning approaches are used to extract hidden and unknown patterns from massive data sets. Data mining is essential for dealing with large amounts of data. Data mining is concerned with data heterogeneity and correctness. Furthermore, medical data mining is an extremely essential research subject, and substantial efforts have in this area in recent years since accuracy in medical data systems can lead to seriously deceptive medical treatments. Suitable mining methods should be used to examine medical data collections. Data mining techniques have been employed in constructing medical systems for disease prediction using a set of medical data sets to execute related tasks. In this an examination of the survivability rate prediction of breast cancer patients using data mining approaches is presented in this paper. SEER Public-Use Data was used as the source of information. The preprocessed data collection contains 151,886 records, each of which has all 16 fields from the SEER database. We looked into three data mining methods: Nave Bayes, back-propagated neural networks, and C4.5 decision tree algorithms. These algorithms have been used in a number of experiments. The achieved prediction results are comparable to those of other methods. However, we discovered that the C4.5 method performs far better than the other two strategies.

IndexTerms - Data Minining, SEER, WEKA, Breast cancer survivability

I. INTRODUCTION

Mining is a knowledge finding process that involves evaluating data that may be concealed in incredibly large amounts of data. It is a method of extracting data from historical records in order to make significant decisions for future projections. Image mining, opinion mining, web mining, text mining, graph mining, and medical data systems are all examples of data mining applications. It has grown in importance in medical research as a means of uncovering previously unknown patterns in medical data. Medical practitioners can examine diseases based on the predictions provided by the prediction mode. In the United States today, one out of every eight women will acquire breast cancer during their lifetime.

According to the most recent data, the survival rate is 88 percent five years after diagnosis and 80 percent ten years after diagnosis. Extraction of knowledge from data related to an illness allows for the finding of the survival rate or survivability of that disease[1]. SEER (Surveillance Epidemiology and End Results) is one of these data sources, and it is a one-of-a-kind, dependable, and crucial resource for researching various aspects of cancer. The SEER database brings together patient-level data on cancer location, tumor histology, stage, and cause of death[2].The features of a population can be studied to determine the elements that influence a given outcome. Observational research, such as statistical learning and data mining, can establish the relationship between the variables and the outcome, but not always the cause-and-effect relationship. Many scientific fields, such as medicine and biotechnology, are increasingly relying on data-driven statistical research. The current study uses data mining techniques to predict the survival rate of breast cancer patients. The researchers analyzed SEER data and developed a pre-classification method that considers three variables: Survival Time Recode (STR), Vital Status Recode (VSR), and Cause of Death (COD)[3,4].

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An Emperical Evaluation of Institutional Data Relevance Using Educational Data Mining

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ABSTRACT

Nowadays educational institutions compile and keep huge amounts of data, such as student enrolment and attendance records, as well as their examination results. Analyzing and uncovering the hidden information of these datas itself is hard and very time consuming if to be done manually. In this context there arise a need for more experienced set of algorithms for extracting information from datas. This issue led to the disclosure of the field of educational data mining (EDM). Educational data mining has played a major role in the advancement of learning environment by providing state-of-the-art methods, techniques, and applications. The recent development in EDM provides valuable tools for understanding the student learning environment by analysing educational data using machine learning and data mining techniques. Traditional data mining algorithms have a specific objective and function. So it cannot be directly applied to educational problems. Therefore a preprocessing algorithm has to be enforced first and only then some specific data mining methods can be applied to the problems. One such preprocessing algorithm in EDM is clustering. In recent years researches shows that there is a growing interest in educational data mining. The studies in this stream of research mainly focus on using state-of-the-art EDM techniques to optimize prediction models to accurately predict learners' academic performance and to detect behaviors of learners for timely intervention. The purpose of this study is to look into the relevance and latest trends of data mining in educational research.

Keywords: Data mining, K-Means clustering, Naïve Bayes classifier

I. INTRODUCTION

Data mining is the process of analyzing and extracting patterns, confusing or relating from large amounts of data. Today its use can be seen in many fields such as e-commerce, bioinformatics and more recently in the field of educational research. Current educational institutions operate in a very complex and competitive environment. They are obliged to compile and maintain large volumes of information about student enrollment and attendance records, as well as their examination results. In order to analyze performance, provide high quality education, strategize and identify future needs a complex set of algorithms is required. This led to the development of the education data mining (EDM) sector. The Educational Data Mining community describes EDM as an emerging discipline, aimed at developing ways to evaluate unique types of data from the education system, and to use those. EDM often emphasizes the development of student models that reflect the current student knowledge, motivation, self-awareness, and student attitudes.

E-learning is a fast-growing and advanced form of education, in which students enroll in online courses. E-learning platforms such as Intelligent Tutoring Systems (ITS), Learning Management Systems (LMS), and Massive Open Online Courses (MOOC) utilize EDM's significant advantages in developing and building automated grading systems, as well as flexible systems. These forums use smart tools that collect important user information such as; the frequency of the student's access to the e-learning system, the accuracy of the student's answers to the questions, and the number of hours spent reading the text and watching the video lessons. The information obtained, over time, is analyzed and analyzed using different machine learning methods to improve both usability and build interactive tools on the learning platform. Although e-learning is widely regarded as a less expensive and flexible form of education compared to campus culture, it is still considered a challenging learning environment if there is no direct communication between students and subject teachers. However forums such as MOOC and LMS provide student-teacher interaction through metal-line learning sites .Master

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IDENTIFIES DIAGNOSES AND CAUSE OF DEATH FROM UNSTRUCTURED TEXT IN ELECTRONIC HEALTH RECORDS USING FREETEXT ALGORITHM

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Abstract: The freetext algorithm a PC program that eliminates sicknesses and reasons for death from electronic wellbeing records. Electronic wellbeing records are significant in clinical exploration as most information is put away as free text instead of encoded. The objective is to foster a robotized framework for separating coded information from arbitrary text to electronic medical services records.Electronic wellbeing records are a significant wellspring of data for clinical exploration, however a large part of the data is put away as unstructured free text instead of in an organized manner. Exploration to date has transcendently utilized the coded information, which are promptly accessible for examination, however the free text might contain significant extra data pertinent to concentrate on results, attendant infections, methods, intercessions, or test results in observational studies

Keywords: Free text algorithm, GPRD database,Metamap

1. INTRODUCTION

The General Practice Research Database (GPRD)[12] is an immense assortment of essential consideration records. An important wellspring of clinical information for epidemiological and medicine security review Is data about broad expert conferences, analysis, activities, test results, solutions, and references. a technique for recovering clinical information from the unstructured language in automated patient records We started by zeroing in on the reason for death while fostering the calculation, and have started to extend it to break down texts connected with different kinds of clinical occasions.

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An Emerging Artificial Intelligence Techniques on Employment and Organisations in the Industrial Working Environment

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Abstract: *In manufacturing enterprises, AI applications such as robots, automation, and intelligent support are becoming drivers of a wide-ranging change process that affects not only the employment of algorithms but also people and organizations. Automation and algorithmisation will have a long-term impact on the workplace, affecting all value-added activities from operational manufacturing to skilled work and management. AI is intended to function independently, support people through assistance systems, use resources more effectively, make processes more environmentally friendly, and enable new working models with direct participation and greater transparency, thanks to its learning capabilities. It should boost productivity, improve customer satisfaction, and make work easier and more enjoyable. According to recent study, the success of digitalisation is determined less by technology and investment and more by the openness of employees and executives along with a supporting organisational structure and culture. The impact of AI on jobs is debatable. It should lead to more stable and challenging careers, as well as physical and cognitive respite and a better work-life balance. However, there are concerns about job losses, disqualification, increasing digital system autonomy, and enhanced employee control potential. According to the findings, one robot has replaced on average two workers in the industry, while two new jobs have been generated outside the business. Reorganization of management, cooperation, co-determination, qualification, and a high level of knowledge exchange are all required for AI implementation. To be able to respond to new complicity and dynamics, digital change necessitates flexible and agile organisational structures with flatter hierarchies. Future participatory leadership will act flexibly within self-organizing networks of interdisciplinary, democratically created teams. Coaches and moderators are how executives see themselves. Based on a comprehensive literature study, this research explores the effects of using AI in industrial businesses. Effects on employment, organization structure, and culture will be given special consideration. Examples of best practices for AI applications in industrial companies will also be looked at. According to the India Express, artificial intelligence will bring nearly 20 million employment by 2025. These figures reflect the positive response and newest technological advancements in every discipline.*

Keywords: *Artificial intelligence (AI), working environments, leadership, organization*

I. INTRODUCTION

Business is being transformed by automation and artificial intelligence (AI). They'll boost production and help the economy grow (McKinsey, 2018). Only the perspective on technology, however, is inadequate. In order to maximize the benefits of new technologies, the capabilities of technology must be examined in the context of the socio-technical system of technology and human organization (Hirsch-Kreinsen et al. 2018). The effects of AI applications on employment and work organization, as well as on organizations (changes in structures, procedures, and corporate culture), are among the critical variables that lead to digital transformation success (Franken, Prädikow, and Vandieken, 2019). However, because AI applications are now only rarely employed, the labor-related implications of AI have seldom been explored, as the current Adesso survey shows: despite the fact that 80 percent of respondents perceive AI technology to be a critical competitive element, AI applications are sparse. Only around one-fifth of the companies polled had launched chatbot initiatives, and many more AI applications are still in the planning stages (Adesso, 2019). The purpose of this article is to emphasis the impact and influence of artificial intelligence (AI) on industrial businesses, as well as fundamental changes does the application of AI in industrial firms result in at the employment level and organisational culture, states the research question.

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EMPIRICAL ESTIMATION OF CLASSIFICATION MODELS FOR PREDICTION OF DIABETIC RELATED DISEASES USING BIGDATA ON THE CLOUD AND HADOOP.

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ABSTRACT - The rapid adoption of Information Technology(IT) in healthcare systems, the health data grows exponentially and it is available in different forms in different ways. Knowledge discovery and decision-making from such rapidly growing huge data is a challenge regarding both data organization and timely processing, which is a promising trend known as Big Data computing. Big Data computing is a new paradigm which combines large-scale computing with machine learning techniques is used to build predictive analytics for intrinsic information extraction. Cloud computing emerges as a service oriented computing model for processing large volumes of rapidly growing data at a faster scale which is a demand for BigData computing. Hence Big Data frameworks Hadoop and Spark are used to carry out Big Data tasks along with machine learning techniques. This thesis focuses on predictive analytics with machine learning to analyze Big Data making decisions about future complications of diabetic patients. The thesis discusses a framework for Big Data computing with Hadoop MapReduce in both standalone and in Cloud(AWS),as well Apache Spark in standalone and also demonstrating their effectiveness by their performances.

Keyword - Machine Learning, K-means, SVM, Diabetic, Hadoop, Big Data , Cloud.

I. INTRODUCTION

Here introduce the concept of Big Data, Big Data in healthcare industry, Diabetic Mellitus, Big data analytics, Predictive analytics, Data Mining and knowledge discovery, Cloud computing, Hadoop Map Reduce, and Machine learning techniques.

Big Data is a large data collection, yet it is growing exponentially over time. It is data that is so large and complex that none of the common data management tools can store or process it properly. Big Data, a collection of items from Social Networking, Mobile Computer, Statistics, and Clouds, is popularly known as SMAC. It is difficult to store and process such fast-growing data over a period of time using traditional tools. Major data analysis challenges include data capture, data retention, data analysis, search, sharing, transfer, visualization, testing, review, confidentiality, and data source. Current use of the term big data often refers to predictable analytics applications, user behavior statistics, or other advanced data analysis methods that extract value from big data, and rarely go to a specific data set size. IDC report says that, compare to other industry like manufacturing big data is expected to grow very fast in healthcare system. Present investigation is interested in the integration of high performance computing, Cloud and Big Data computing technologies for getting state of the art services from the medical and health-care industry. Predictive analysis involves lot of techniques for data mining and statistics using current and past data to predict future events. By utilizing in health care system, significant predictions can be made accurately by applying Big Data analytics in health care system. Diabetes Mellitus (DM) has become a global menace. It is a clinical disorder

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ROBOTIC PROCESS AUTOMATION

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Abstract : Robotic Process Automation (RPA) is a type of software that allows anyone to automate digital operations. RPA allows software users to develop software robots. "Bots" that can learn, mimic, and then execute business operations based on rules. Users can benefit from RPA automation. To build bots by studying human digital behaviour show Tell your bots what to do, then let them go. Robotic Bots in process automation software can communicate with any system Software or system in the same manner as people do—except that RPA bots can work nonstop around the clock much faster and with complete accuracy and precision.

IndexTerms - Artificial intelligence, Robots, Automation

INTRODUCTION

Robotic Process Automation (RPA) is a type of software that enables anyone to automate digital activities. Users may benefit from RPA automation. to create bots by studying human online behaviour Walk away after telling your bots what to do. Robotic bots in process automation software can communicate with any system. RPA bots work in the same way as humans do, but they can work 24 hours a day, seven days a week. Much faster, and with complete accuracy and precision. Automation is described as "the use or introduction of automatic equipment in a production or other process, facilities," according to Google.com. The process of directing machines to undertake jobs that would otherwise be performed by humans is known as automation. The advantages of implementing this concept of automation in the computer sector outweigh any other method of completing a work. As a result, automated processes are expected to assist businesses in achieving more success in the not-too-distant future. Artificial intelligence (AI), machine learning (ML), robotic process automation (RPA), business process automation (BPA), industrial robots, virtual help, and other technologies are examples of process automation technology. All of these technologies are currently available.

LITERATURE SURVEY

This literature survey offers the review of literature over different aspects of robotic process automation.

Leslie P Willcocks,Mary Lacity and Andrew Craig discussed the concept of "the IT function and robotic process automation".they convey the introduction of new technologies like as Robotic Process Automation (RPA) and Cognitive Intelligence (CI) tools has heightened interest in service automation. Many potential users of new types of service automation technologies are dubious of the claims made about the products' potential commercial benefit. Potential adopters must be exposed to real-life client adoption tales.Academic researchers can assist potential adopters by objectively examining actual RPA and CI implementations in client organizations, appraising what the software can and cannot achieve at this time, and extracting lessons on achieving the product's worth. Organizations hope to improve their operational efficiency by implementing Robotic Process Automation (RPA). Robots, or bots, in RPA, are software agents capable of interacting with software systems by simulating user activities, reducing the workload of the human workforce. RPA has already achieved significant adoption in practice, with numerous vendors offering solution solutions. In contrast to this early practical acceptance, RPA has received very little attention in academic literature.

Kevin C Moffitt,Andrea M Rozario,and Miklos A Vasarhelyi discussed about " robotic process automation for auditing". Robotic Process Automation (RPA) has the ability to upend the traditional auditing methodology. RPA is predicted to repurpose the position of the auditor by removing perfunctory activities, enabling higher order thinking skills, which will eventually lead to improved

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Computer Forensic in Image Steganography

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Abstract: *The advancement of strong imaging tools, modifying photographs to change their data content is becoming a common task. In the computer forensic world, adding, erasing, or copying/moving image data without leaving a trace or unable to be discovered by the inquiry is a problem. The security of information exchanged over the Internet, such as photos and other confidential data, is critical. The goal of today's forensic Image investigation tools and methodologies is to uncover the tempering strategies and restore trust in digital media's trustworthiness. The difficulties of detecting steganography in computer forensics are investigated in this paper. These issues were investigated using open source software. The experiment focuses on steganography applications that employ the same methods to obsure and secure.*

Keywords: *Image steganography, LSB steganography, LSB Spatial Algorithm, steganoanalysis*

I. INTRODUCTION

The digital media revolution has resulted in an increase in the availability of computer options that are both cost-effective and efficient. Those who require power and logic to handle issues in computer forensic examination tools and strategy to improve a robust computer forensic environment are of primary concern. Steganography is a method of concealing information in plain sight, similar to camouflage that is invisible to an intruder or unintentional recipient . This research tries to address the possibilities in computer forensic investigation by employing tool X to decode concealed information encoded by other tools with similar characteristics and methodologies. Because both tools employ the same algorithms, it is assumed that tool X will be able to uncover the secret information. It will be expressed in a practical perspective, with the end result likely to pave the way for more research. If the results don't match expectations, it's a difficulty in computer forensics, and it could lead to the development of a new steganography decoding algorithm.

The follows develops deeper into various studies on the era of steganography and its detection techniques. It includes a brief review of steganography uses and techniques based on literature review. The methodologies used in steganalysis will also be investigated in order to lay the groundwork for any proposed solution. The experimental effort of decoding information encoded using steganography tools that employ the same approach is presented in followed by the findings and discussion that leads to the conclusion.

FIGURE 1: Computer forensics in image steganography

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Secure Cloud Storage Using Different Algorithms in Cryptography

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Abstract: *Cloud computing offers online services that allow visible servers, dynamic reminiscence swimming pools, and so for a smooth get right of entry. Because dispensed computing is based on the internet, security concerns include information protection, confidentiality, records protection, encryption, and authentication seem. Cloud records garage protection is a primary difficulty. In this examination, we aimed to explore a variety of information safety strategies. The use of cryptographic algorithms is used to solve information protection and privacy troubles in cloud storage. Inside the proposed Hybrid set of rules system RC4, DES & AES Algorithms have been used to enhance data security and privacy. Proposed hybrid system algorithm shield upload and download of statistics from cloud garage. In this case, mystery keys are required for each encryption to do away with encryption. As a result, several parameters have calculated the usage of taking a look at features that encompass encryption time, memory utilization, privacy length, and output to illustrate the performance of the hybrid machine, facts simulations are to be supplied to JAVA, the use of the Eclipse IDE device. The proposed hybrid machine set of rules is used and tested the usage of various record formats such as textual content and photo data. The proposed set of rules is thought to paintings properly to provide additional information safety.*

Keywords: *Cryptography, cloud computing, encryption/decryption Algorithm*

I. INTRODUCTION

Cloud computing provides cloud services online. The Cloud computing model allows apps once information is accessed remotely. Three levels of services used are d to define as cloud computing infrastructure as a service (IaaS), Software as a service (SaaS), and Platform as a Service(PaaS). IaaS provides visual equipment and storage to users. SaaS provides users with frameworks to improve cloud hosting applications to develop, use, analyze, and manage theorem services. PaaS provides users with services and applications with a web browser anywhere at any time and any place. Data security is a major issue as data is being held is a third party, and the risk is high if users gather information in transparent manner storage also provides a backup tool. Cloud is divided into three categories. There are a public cloud, virtual cloud, and hybrid cloud cloth most popular security issues in cloud computing are data recovery issues, data privacy, Integrity, Availability, Confidentiality; Operational privacy, unauthorized access to such management interface, vulnerability in virtual machine(VM)script illustration, data leakage risk, challenges with security metrics &monitoring. Trouble regarding digital key management & numeric codes Cloud interoperability problem, and monitoring activity patterns. Cryptography refers to the process of converting plain text into unreadable text Cryptography might be used to identify users as well as safeguard data from theft and modification. Cryptography contains three categories: secret key (symmetric) cryptographic public-key key (asymmetric) cryptography, as well as hash functions. Public key encryption is referred to as symmetric key exchange in the middle of the transmitter as well as the receiver of data. In Asymmetric key cryptography, public-key encryption is a kind of encryption that employs two distinct keys, one for encryption (public key) and decryption (private key). The public key, everyone knows, and the private key, then only the owner knows For cryptography, the following three algorithms were proved to be effective in terms of encryption/decryption time and other parameters for cloud storage: DES is an algorithm program that takes a fixed-length stream of plaintext bits as well as, apparently limiting decoding to those who aware of the encryption key takes a secure block size of 128,192, or 256 bits. The cipher is defined as many transformations Long repetitions that transform the input of the cipher text's last output. Each round involves multiple processing steps, together with one that relies on the encryption key. Series of reverse rounds are applied to turn the ciphertext again into plain text just using the same encryption key. Rivest Cipher four (RC4) is a symmetric-key block cipher invented by Ron Rivets. The RC4 algorithm performs bit-wise encryption and decryption with a key length of 40-128 bits.

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CROSS SITE SCRIPTING(XSS) : THE SECURITY VULNERABILITY AND PREVENTIVE MEASURES

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Abstract : This paper is supposed to support and encourage application of counseled practices for management systems security. It describes the little print of associate data security attack, named as cross-site scripting, that will be used against management systems and explains practices to mitigate this threat.
Attackers will use cross-site scripting to achieve access to and alter management systems networks. It takes advantage of net servers that come back dynamically generated sites or permit users to post visible content so as to execute discretionary hypertext markup language and active content like JavaScript, ActiveX, and VBScript on a far-off machine browsing the positioning inside the context of a client-server session. This doubtless permits the aggressor to send the web page to a malicious location, hijack the client-server session, interact in network intelligence, and plant backdoor programs.
The consequences of associate XSS attack begin with access to the cookie passed between the victim and therefore the net server. this allows associate aggressor to impersonate the victim to the online website, and is known as session hijacking. the foremost dangerous consequences occur once XSS is employed to take advantage of extra vulnerabilities. These vulnerabilities might allow associate aggressor to not solely steal cookies, however additionally log key strokes, capture screen shots, discover and collect network data, and remotely access and management the victim's machine. Any information processing system or application that employs user input to come up with web content is also at risk of XSS. These vulnerabilities can become additional serious if associate aggressor will gain the assistance (knowing or unknowing) of associate corporate executive. to boot, attacker's mistreatment XSS might gather data concerning potential victims before associate attack and use e-mail to focus on them directly.

IndexTerms - **Application-level web Security, Cross-site scripting, Computer security, Security vulnerabilities, virus and worms.**

I. INTRODUCTION

The web applications give clients a wide scope of administrations, for the most part showing high levels of convenience. Since individuals are regularly approached to enter private data into those applications to perform touchy tasks on the web (like bank exchanges), web applications have turned into an advantageous objective for digital hoodlums. In such manner, cross-website prearranging (XSS) assaults on web applications have encountered a significant ascent lately. XSS takes advantage of defects in web applications which permit an assailant to execute erratic code without the approval of the web application. Along these lines, a uninformed client can be the survivor of a fraud, electronic extortion or different modalities of digital wrongdoing. XSS assaults happen in three primary very much separated ways: reflected-XSS, put away XSS and DOM-based XSS. These modalities contrast from one another in the manner they figure out how to infuse the meddlesome code into the application and in the manner this code is executed. Most of creators do exclude DOM-based XSS assaults when they identify the different XSS assault types. The explanation of that prohibition isn't just the lower number of events of that particular sort of assault yet additionally the different idea of the attack itself: while reflected and put away XSS assaults are because of weak web applications, DOM-based assaults are propelled by weaknesses of the mediator of the content utilized by the internet browser

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GIANT GENOMIC STORING SERVICE

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ABSTRACT : This is a project run under Google X. Google will store the genome in the cloud for $25, and the storage system could have a major impact on the scientific community. The hope is to collect millions of genomes to aid in scientific research. As MIT Review reports, the system could aid in collecting "cancer genome clouds" that would allow scientists to share information and run virtual experiments. Significant advancements in genomics analysis have been made possible with the emergence of better and more cost-effective tools. For example, cloud-based technologies, such as those offered by Google Cloud Platform (GCP), provide computational resources capable of analyzing massive amounts of genomic information at unprecedented speeds and in many cases, at a lower cost compared with on-premises solutions. Today, the use of cloud-based tools enables analysis across thousands of genomes to identify patterns and markers for disease predisposition, prediction, and causality. This helps improve how healthcare providers understand and treat disease,and creates better-informed treatment plans for patients.

Keywords : google cloud ,cloud storing, genomics ,human genome.

1. INTRODUCTION

The new initiative, called Google Genomics, is appealing to researchers in an effort to keep human genetic data in a secure cloud for $ 25 a year. MIT Technology Review recently reported that Google, in fact, had been rolling out the service silently for months, but Google's opposition to other health projects covered the news. The reason why Google Genomics can be so large is that a large amount of even personal

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A REVIEW OF INTERACTIVE MEDICAL IMAGESEGMENTATION USING DEEP LEARNING METHODOLOGIES

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Abstract: Deep gaining knowledge of-primarily based totally picture segmentation is with the aid of using now firmly mounted as a well-made device in picture segmentation. It has been extensively used to split homogeneous regions because the first and crucial issue of prognosis and remedy pipeline. In this article, we gift a crucial appraisal of famous strategies which have hired deep-gaining knowledge of strategies for scientific picture segmentation. Moreover, we summarize the maximum not unusual place demanding situations incurred and suggest viable solutions. With the fast improvement of deep learning, clinical photo processing primarily based totally on deep convolutional neural networks has turn out to be a studies hotspot. This paper specializes in the studies of clinical photo segmentation primarily based totally on deep learning. Despite the remarkable achievements of clinical photo segmentation in current years, clinical photograph segmentation primarily based totally on deep gaining knowledge of has nonetheless encountered problems in research. For example, the segmentation accuracy isn't always high, the variety of clinical snap shots withinside the statistics set is small and the decision is low. The faulty segmentation consequences are not able to satisfy the real scientific requirements. Aiming on theabove problems, a complete evaluation of present-day clinical photograph segmentation strategies primarily based totally on deep gaining knowledge of is supplied to help scholars resolve Current problems.

Index Terms - Image segmentation, Deep learning, Convolutional neural network, Medical image.

I. INTRODUCTION

This is likewise a bottleneck that restricts the software of 3-d reconstruction and different technologies. Image segmentation divides the entire picture graph into several regions, which have some similar properties. Simply put, it's miles to split the goal from the heritage in a picture. At present, picture segmentation strategies are growing in a quicker and greater correct direction. By combining several new theories and new technologies, we are finding a stylish segmentation set of policies that can be applied to kind of images. The promising capacity of deep getting to know processes has placed them as a number one alternative for photo segmentation, and mainly for scientific photo segmentation. Especially withinside the previous couple of years, photo segmentation primarily based totally on deep getting to know strategies has acquired widespread interest and it highlights the need of getting a complete assessment of it. To the fantastic of our knowledge, there is no entire evaluation specially finished on medical image segmentation using deep gaining knowledge of strategies. Medical photograph segmentation, basically similar to herbal photograph segmentation, refers back to the manner of extracting the favored item (organ) from a clinical photograph (2D or 3D), which may be carried out manually, semi-mechanically or fully-mechanically. Segmentation is the manner of partitioning a photograph into one-of-a-kind areas or segments. The reason of segmentation is to divide the photo into homogeneous, self-consistent areas, which have to correspond to one in all a type object withinside the scene. The technique is completed the use of most effective homes of the picture. The primary belongings beneficial for picture segmentation is its amplitude. The different homes including edges and texture also are beneficial for segmentation. Image segmentation has a crucial role in plenty of medical imaging applications, With the useful resource of the use of facilitating the delineation obstacles or edges of organs, structures or special regions of interest. Segmentation strategies are divided into major categories: discontinuity and similarity. The first category (discontinuity) walls the picture relying on adjustments withinside the depth which includes barriers and edges. The 2nd category (similarity) walls the picture into comparable areas in keeping with a few criterion.

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CHALLENGES THAT NEED TO FACED BY IOT DEVICES WHILE IMPLEMENTING 5G

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Abstract: The Internet of Things (IoT) is a promising technology which tends to revolutionize and connect the global world via heterogeneous smart devices through seamless connectivity. The current demand for machine-type communications (MTC) has resulted in a variety of communication technologieswith diverse service requirements to achieve the modern IoT vision. More recent cellular standards like long-term evolution (LTE) have been introduced for mobile devices but are not well suited for low-power and low data rate devices such as the IoT devices. To address this, there is a number of emerging IoT standards. Fifth generation (5G) mobile network, in particular, aims to address the limitations of previous cellular standards and be a potential key enabler for future IoT. In this paper, the state-of-the-art ofthe IoT application requirements along with their associated communication technologies are surveyed.In addition, the third generation partnership project cellular-based low-power wide area solutions to support and enable the new service requirements for Massive to Critical IoT use cases are discussed in detail, including extended coverage global system for mobile communications for the Internet of Things, enhanced machine-type communications, and narrowband-Internet of Things. Furthermore, 5G new radio enhancements for new service requirements and enabling technologies for the IoT are introduced. This paper presents a comprehensive review related to emerging and enabling technologies with main focus on 5G mobile networks that is envisaged to support the exponential traffic growth for enabling the IoT. The challenges and open research directions pertinent to the deployment of massive to critical IoT applicationsare also presented in coming up with an efficient context-aware congestion control mechanism.

Index Terms - Internet of Things, long-term evolution, machine-type communications, 5G new radio.

I. INTRODUCTION

The Internet of Things (IoT) is a predicate in Nursing rising IoT technology that tends to revolutionize the worldwide world through connecting physical objects. IoT deals with low- power devices that act with one another through the web. The idea of the IoT has drawn the eye of the analysis community with the top goal of making certain that wearables, sensors, good appliances, laundry machines, tablets, smart-phones, good facility, etc., and different entities are connected to a typical interface

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Unique Brain Wave Pattern Detection Using Brain Electrical Oscillation Signature Profiling (BEOSP)

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Abstract: ***When a person experiences a familiar stimulus, the brain emits a unique brain wave pattern, which is known as brain fingerprinting. The use of functional magnetic resonance imaging in lie detection stems from studies that reveal that people who are asked to lie have distinct patterns of brain activity than people who are telling the truth. The use of such evidence in courts is examined in detail. The author concludes that neither approach has adequate evidence of accuracy in identifying fraud to be used in court at this time. A new lie detector has been developed in the field of criminology in the United States of America. This is referred to as "brain fingerprinting." This innovation is said to be the greatest lie detector on the market right now. When a person experiences a familiar stimulus, the brain emits a unique brain wave pattern, which is known as brain fingerprinting. In order to identify lies, functional magnetic resonance imaging is used. This innovation is believed to be the finest lie detector accessible to date, detecting even slick crooks who easily pass the polygraph exam (the traditional lie detector test). The new technology uses brain waves to determine whether or not the person being tested remembers the finer details of the incident. According to scientists who are very pleased about the new kid on the block, even if the person voluntarily suppresses the vital knowledge, the brain wave will undoubtedly catch him.***

Keywords: *Brain finger printing, sources of EEG, EEG Vs FMRI & PET, Four phases of brain fingerprinting, Applications*

I. INTRODUCTION

Brain fingerprinting is a contentious proposed research tool that analyses recognition of known stimuli by analysing electrical brain wave responses to words, phrases, or pictures on a computer screen. Lawrence Farwell is the inventor of brain fingerprinting. The hypothesis holds that a suspect's reaction to specifics of an event or activity will reveal whether or not the suspect was aware of the event or activity beforehand. To determine familiarity, this test employs Farwell's MERMER ("Memory and Encoding Related Multifaceted Electroencephalographic Response") response. Dr. Lawrence A. Farwell invented, developed, proven, and patented the technique of Farwell Brain Fingerprinting, a new computer-based technology that uses brain-wave responses to crime-relevant words or pictures presented on a computer screen to accurately and scientifically identify the perpetrator of a crime. In over 120 tests, Farwell Brain Fingerprinting has proven to be 100 percent accurate, including testing on FBI agents, tests for a US intelligence organisation, tests for the US Navy, and tests on real-life circumstances such as actual crimes. By detecting electrical brain wave responses to words, phrases, or pictures presented on a computer screen, Brain Fingerprinting can establish whether an individual recognises specific information associated to an event or action. Only in cases when investigators have a substantial amount of particular knowledge about an incident or behaviour that is known only to the culprit and the investigator can the technique be used. In this way, Brain Fingerprinting can be compared to a Guilty Knowledge Test, in which the "guilty" party is supposed to react strongly to the important information of the activity. Brain Fingerprinting, on the other hand, uses a fitted headband with unique sensors to assess electrical brain activity. Brain fingerprinting is said to be more accurate in detecting "guilty" information than traditional polygraph methods, but this is vigorously contested by specialised researchers. The person being evaluated wears a headband with electronic sensors that detect electroencephalography at multiple points on the scalp. The tester is presented with a number of irrelevant stimuli, words, and pictures, as well as a series of relevant stimuli, words, and pictures, in order to calibrate the brain fingerprinting system. The tester can assess if the measured brain responses to test stimuli, or probes, are more similar to the relevant or irrelevant responses by observing the test subject's brain response to these two types of stimuli.

The technique uses the well known fact that an electrical signal known as P300 is emitted from an individual's brain approximately 300 milliseconds after it is confronted with a stimulus of special significance, e.g. a rare vs. a common stimulus or a stimulus the proband is asked to count. A novel interpretation in brain fingerprinting is to look for P300 as response to stimuli related to the crime in question e.g. a murder weapon or a victim's face.

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A COMMUNICATION BETWEEN HUMAN BODIES USING REDTACTON TECHNOLOGY IN HUMAN AREA NETWORKING

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Abstract : RedTacton can be a fluent persuasive generation that establishes a interaction between elders and nearest objects. This paper pronounces a version of an individual's area networking technology that extrade verbal exchange utilizing "Touching". Human area Networking transmits with cellular terminals and terminals which can be embedded inside the environment. RedTaction generation changed into enforced to overcome the vulnerable radio signals, information speeds, and security –dangers of undesirable sign interceptions. Here, the form is that the transmission medium assisting IEEE 802.three half-duplex verbal exchange at ten Mbits/s. RedTacton makes use of the minute subject generated with the aid of using the human frame as a medium to transmit the data. In, this paper means that RedTacton generation relies at the precept of Human area Networking.

IndexTerms **- Body Coupled Communications, RedTacton, Intrabody, Electric Field, Capacitive Body Coupling, Transceiver.**

I. INTRODUCTION

Today online community is the platform where mostly used to communicate between each other. Moreover, the Internet need more people who utilizes these from remotely located servers to their domestic computers. probably these types of interactions allow a remote connection between them. Meanwhile, all types of digital gadgets which include non-public virtual assistants (PDAs), have grow to be smaller, so people can deliver round or possibly located on numerous non-public information and interaction of home gadget sooner or later in their ordinary activities. However, character wonderful ubiquitous offerings comprise more than genuinely networking among remotely located terminals. Communication among digital gadgets at the human frame (wearable computers) and ones embedded in our ordinary environments is likewise critical, so this has pushed exceptional studies and improvement on human vicinity networks. Wired connections in smart gadgets are getting confusing due to excessive usage. Short-variety wi-fi communique structures collectively with Bluetooth and wi-fi network area networks (IEEE 802.11b, etc.) have a few troubles. Throughput is decreased in a way of approach of packet collisions in crowded areas collectively with assembly rooms and auditoriums entire of people and communique is not strong due to the fact symptoms and symptoms may be intercepted. The precept drawback of Infrared Communications (IrDA) is the tight directionality of beams amongest

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MODELING AND CONTROLLING FRACTAL ROBOT USING L-STREAM ALGORITHM

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Abstract : Modeling and controlling self-reconfiguration of modular robots remains a tough hassle with inside the subject of disbursed control. The major constrains are the layout of goal shapes and the absence of worldwide kingdom for decentralized modules. We gift a brand new manner for the ones issues stimulated from the developmental procedure of plant boom. As a mathematical principle of plant development, L-structures seize the essence of boom procedure. We make bigger L-structures to the self-reconfiguration procedure of modules robots. Target configurations can be defined in a string of symbols, and robot systems seize fractal characters via the rewriting function. Extended graphical interpretation of L-device symbols can generate module-stage predictions approximately robot international states. Simulations of various self-reconfiguration approaches illustrate the proposed method. The start of each generation is the end result of the hunt for automation of a few shape of human work. This has brought about many innovations which have made existence less complicated for us. Fractal Robot is a technology that guarantees to revolutionize generation in a manner that has in no way been witnessed before.

IndexTerms **- Modular robot, Multibody systems, Distributed dynamics, Self-reconfiguration, L-systems, Fractal analysis.**

I. INTRODUCTION

The birth of each technology is that the results of the expedition for automation of some kind of human work. This has led to several inventions that have created life calmer for us. fractal robot could be a science that guarantees to develop technology in a very means that has ne'er been witnessed before. The precept at the rear of fractal Robots is also terribly straightforward. You are taking a couple of cubelike bricks made of metals and plastics, motorize them, positioned a couple of physical science internal them and manage them with a computer and additionally you get machines which will alternate kind from one item to a different. Shortly, you will currently construct a domestic in a very bear in mind of minutes just in case you had sufficient bricks and educate the bricks to shuffle spherical and create a house! it's exactly like youngsters gambling with Lego set bricks and making a toy hose or a toy bridge with the help of victimization snapping put together Lego set bricks-besides currently we are the use of portable computer and every one of the paintings is dole out under overall computer manage. No guide intervention is needed. form Robots area unit the hardware equal of computer code. A fractal is something which has a enormous degree of genuine or statistical self-similarity. Wherever you have a take a observe any a part of its frame it is going to be much like the entire object.

A Fractal Robot bodily resembles itself in keeping with the definition above. The robot can be active round its joints in a uniform manner. Such robots can be easy geometric patterns/images that look more like natural structures along with plants. However, this patented product has a cubic structure. The decide under indicates a hard and fast of such cubes[1].Fractal Robots begin at one length to which 1/2 of length or double length cubes may be connected and to every of those 1/2 of length/double length cubes may be connected respectively adinfinitum. This is what makes them fractal. So a fractal dice may be of any length. The smallest predicted length is among a thousand and 10,000 atoms wide. These cubes are embedded with pc chips that manipulate their movement. Thus they may be programmed to configure themselves into any shape. The implication of this idea may be very powerful. This idea may be used to construct buildings, bridges, instruments, gear and nearly something else you could assume of. It may be executed with infrequently any guide intervention. These robots can help in manufacturing and manufacture of products for that reason bringing down the producing fee down dramatically[1].

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A REVIEW ON AGRO-VOLTAGE TECHNOLOGY- A SOLUTION TO THE FARMERS IN INDIA

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Abstract: ***Anxieties and loan relinquishments have fetched the finance of farming in attention. Most of the debate is related to minimum support price, farmer's average wages and loan repayment ability. But one of the main problems faced by the farmers is electric supply. Agriculture voltage technology can upsurge the income of farmers by generation of electricity and growing cash crops on the same land. This review paper discusses about different types of agro-voltaics, the KUSUM scheme and its different components in detail which is launched by the Central Government of India and how it can help the farmers with better profits.***

Keywords: **Agriculture voltage technology, KUSUM scheme, solar arrays, stilled solar arrays, green house solar arrays.**

1. Introduction

Agro-voltaic or agro-photovoltaic is the direct usage of land for solar energy and agriculture. The co-occurrence of solar panels and crops means dividing the light amongst these twotypes of production, so the plan objectives of the agro- voltaic necessitate trade-offs such as improving harvests, crop value and energy production. Currently, relevant practices and laws regarding solar energy production differ from country to country. In Europe and Asia, where the idea was first introduced, the term "agro-voltaic" is used to mention to distinct dual-use of technology. Usually the land is located on the roof of a greenhouse with installed agricultural equipment or solar panels. The shadows created by these systems can decrease the yield of some crops, but these losses can be compensated for by the energy produced. Although many pilot plants have been installed by administrations around the world, these systems are not known to be commercially feasible outside of China and Japan. The greatest significant factor in the profitability of agro-voltaic is the cost of installing solar modules. It is expected that the development of this project in Germany, the subsidy given for such projects by a bit extra than 300% can mark the scheme profitable for stockholders andtherefore can be a portion of the upcoming combination of electricity generation. In 2019, several authors began to use the term agro-voltaic ina broader sense to encompass all agricultural activity in the existing traditional solar system. For example, sheep can grazeamongst prevailing solar panels deprived of any alterations. And in the United States, small scale schemes that abode hives on the edge of existing solar arrays are called agricultural power grids. Similarly, agro-voltaic is widely accepted by some as it involves installing solar panels only on the rooftops of a barn or cattle shed.

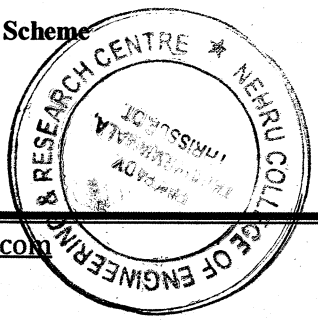
2. Methods

There are three fundamental kinds of agrivoltaics which mightbe being actively researched: sun arrays with area among for plants, stilted sun arrays above plants, and green house sun arrays. All 3 structures have numerous variables used to maximize sun electricity absorbed in each of the panels. The major variable taken into consideration for agrivoltaic structures is the lean attitude of the sun panels. Other variables taken under consideration for selecting the area of the agrivoltaic device are the plants chosen, panel heights, sun irradiance and weather of the area.

Some of the system designs are as follows:

- Orientation of sun panels within side the south for constant or east-west panels forpanels rotating on an axis.
- Spacing among sun panels for enough mild transmission to floor crops.
- Elevation of the assisting shape of the sun panels to homogenize the quantities ofradiation at the floor.

3. About KUSUM Scheme



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Optimization of Energy Conversion Efficiency of PV System

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Abstract: ***The call for energy is hastily rising, and renewable electricity reassets have become more and more more vital for retaining the electrical gadget and servicing remoted demands. Solar electricity, wind electricity, and tidal electricity are all examples of renewable electricity. The sun electricity gadget is clean, and great quantities of sun radiation attain the earth`s surface. The purpose of this observes is to optimise the amount of electrical strength extracted from a sun electricity gadget. This paper delves into the belief of MPPT techniques, which could raise the performance of a sun PV gadget dramatically. This paintings offers a simulation-primarily based totally evaluation of the maximum used processes for optimising the electricity conversion performance of PV systems, perturb and study and incremental conductance techniques. The PV module's houses are decided through simulation evaluation and outcomes.***

Keywords: PV,Optimisation, Solar Harvesting

1. INTRODUCTION

Solar strength is the strength emitted with the aid of using the solar. The solar emits a terrific amount of strength each day. In a unmarried second, the solar emits greater strength than humanity has utilised in view that the start of time. All of this strength originates from the solar itself. The solar, like different stars, is a large gaseous ball made in large part of hydrogen and helium. Nuclear fusion is the system with the aid of using which the solar generates strength in its middle. The solar`s distinctly excessive stress and heated temperature lead hydrogen atoms to interrupt aside and their nuclei to fuse or unite at some point of nuclear fusion. During nuclear fusion, a few substance is misplaced. Radiant strength is radiated into area due to the misplaced matter. The strength withinside the solar's middle takes hundreds of thousands of years to attain the sun surface, after which round 8 mins to

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A Comparative Study of Different Topologies of Transformer less AC-DC Converters

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Abstract: ***The need of single stage transformer less high step-down converters is increasing due to the strict current harmonic regulations in the low power applications. Many topologies are reported that have same characteristics. In this paper 6 topologies are compared each other with respect to their features and analyzed their voltage conversion ratio, number of components, intermediate bus voltage etc. This paper should serve as a convenient reference for future work in the field of power electronic transformer less single stage ac-dc converters.***

Keywords: Ac-Dc Converters, Transformer Less Topologies, High Efficient.

1. INTRODUCTION

In early days, for the DC low voltage applications such as LED lighting etc. we are used a simple topology like a high step down transformer with a rectifier and bulk capacitors to reduce the ripples. There is no intention to reduce the current harmonics and about the power factor. Then we were started to consider the input power factor and current harmonics. The evolution of the two stage converters is introduced the concept that the PFC cell with a transformer and a rectifier. In that days boost or buck- boost cells are used as PFC cell due to their inherent PFC correction. The block diagram shows the two stage conversion (Fig1). But it has so many limitations.

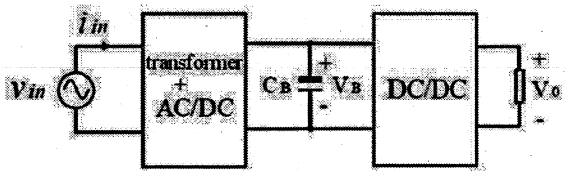

Fig. 1: Block diagram of two stage converter

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SOLAR PADDY DRYER WITH SOLAR PADDY COOKING SYSTEM

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Abstract: Paddy is a mandatory food crop in South India. Most of the Paddy farming is in rural areas. After harvesting, the paddy has to move through different stages. One of the important processes of paddy processing is paddy drying. In most of the rural farmers are using open space paddy drying method. It is not an efficient method, where space for open drying is decreasing, and this process is not hygienic one. Insects and dust particles may mix with paddy. Or otherwise, large machinery is using for paddy drying. It may not accessible for rural or small-scale farmers. Then solar paddy dryer is an alternative method that is useful for rural and small-scale farmers. Solar is renewable energy so; it is safe to process. Free of energy cost. The system is a hybrid one having a paddy dryer with a paddy cooking system. The harvested paddy has a two-stage process before milling for extracting rice, which is cooking partially first and drying. These two processes are satisfied with the system. The system has two chambers, one for cooking the paddy it is by the principle of solar cooker. Solar pressurized cooking is adapting for doing the cooking of paddy. And the suitable solar dryer is selected by software analysis. CFD analysis of solar indirect and mixed dryers is simulating in ANSYS software.

Keywords: CFD analysis, Indirect solar dryer, Mixed solar dryer, Solar cooking system

I. INTRODUCTION

As pollution increases, renewable energy systems usage is more, especially in the case of solar. Solar types of equipment are highly demanding in the market, for example, solar cookers, solar water heaters, solar lights, etc. [1]. In the agricultural field, solar energy is physically essential for plant growth and agriculture product drying. Traditionally drying is by exposing products under the sun, i.e., direct drying [2]. A solar dryer is a device that utilizes solar energy for drying different products such as vegetables, fruits, fish, grains, etc.

Rice is a staple food crop in many countries. After harvesting before milling paddy has to move through two processes that are cooking and drying the paddy [3-4]. The system "Paddy dryer with paddy cooking system" satisfies both the processes before milling. Now paddy cooking is done by using fuels, and open drying is doing. But space is decreasing for this way of drying. Framers having small areas are difficult to do this. And fuel for cooking is not renewable [5]. So, this system is very much useful for paddy farmers for safe and efficient paddy processing.

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DSTATCOM BASED ADDITIVE AND SUBTRACTIVE TOPOLOGY MULTILEVEL INVERTER FOR IMPROVING POWER QUALITY

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Abstract- This research proposes a DSTATCOM-based innovative multilevel inverter that uses additive and subtractive topologies to achieve larger output levels. In comparison to previous topologies, this strategy the active switches are dramatically decreased. The current multilevel inverter can only generate five voltage levels. The multilevel inverter can be converted to a nine-level inverter using the proposed architecture. Furthermore, the new multilevel inverter can employ a modified hybrid multicarrier Pulse Width Modulation (PWM) approach to provide continuous switch utilization and lower THD. An appropriate modulation technique is proposed, and the proposed concept is tested with simulation studies and a hardware model. The results show that the proposed DSTATCOM based multilevel inverter has successfully improved the power quality.

Keywords: DSTATCOM, THD Reduction, PWM Scheme, Multicarrier PWM Scheme, Additive and Subtractive Topologies.

1. INTRODUCTION

Multi-stage voltage source inverters have become feasible solutions for conversion of high-power DC-AC applications over the last few decades [1]. A multi-level inverter (MLI) is a power semiconductor device with a multi-input dc level (obtained from a battery source or capacitor) and an interlocking structure that synthesizes a step waveform [2]. When compared to traditional inverters, the voltage strains the power switches have gone through in MLIs are more affordable. Furthermore, when compared to a two-level waveform generated by traditional inverters, the multilayer the harmonic profile of the waveform is improved. Other benefits of MLIs include lower dv/dt load stress ability to operate fault-tolerantly [3]. Researchers are also looking on ways to use MLIs in application with low power consumption [4].

Converter types include Neutral Point Clamped (NPC), Cascaded H-Bridge (CHB), and Flying Capacitor (FC)has all been extensively investigated and is commercially available for multilevel voltage output. However, increasing the number of output levels leads to an increase in active switches operating at the same time [5-6], increasing the system's overall cost. As a result, researchers are continuing to work on lowering the number of components in multilevel topologies using a variety of methods [7-8]. Topological changes, for example, are one of three sorts of techniques. Asymmetric sources, topological alterations, and asymmetric source configurations available for multilevel voltage output, converters have all been extensively explored and are commercially available [9-10].

The switched DC source topology, on the other hand, has a number of disadvantages [11]. As a result, we suggest a novel topology known as "Additive and Subtractive" to overcome these issues. It Principles of operation the topology is made up of 9-level single-phase inverters. A multi-carrier signal control approach is provided, along with simulation results [12]. Lastly the possible modifications that can be implemented to this newly developed MLI is addressed [13].

The output voltage waveform has a low Total Harmonic Distortion (THD) due to lower voltage stress across power switches; multilayer inverters have recently gained favors [14]. Multilevel converters have a high output power capability, Lower output harmonics and commutation losses are also advantages [15]. Their main disadvantage is their complexity, which needs a significant number of power devices and passive components, as well as complicated control circuitry. This paper establishes a novel MLI with additive and subtractive design for reduction in components counts.

This also contributes to lower manufacturing costs. The primary goal of this project is to create a single-phase, nine-level MLI with fewer components. The harmonic components level is reduced using this architecture. In comparison to traditional inverters, it requires less switches, gate drivers, and carrier signals. THD and switching stresses will be reduced using this topology and modulation approaches. For "$2n+1$" levels, standard cascaded MLI requires "n" number of DC sources.

Soft Switched Bi-directional Power Converter for Photo Voltaic System

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Abstract. This work proposes the implementation of a bidirectional current-fed soft switched converter for solar photo voltaic system is examined and covered with information. Effective function of the bi-directional buck-boost topology is guaranteed by continuous-duty buck-boost circuit under large voltage spectrum. In battery charger mode, phase shift modulation and pulse width modulation control are employed. In order to allow the MOSFETs to have zero voltage switching, a feedforward loop was applied to the charging mode of the battery. Compared with the conventional bidirectional soft switched converter, this one would definitely be better suitable for designing such magnetic components. This bi directional converter is implemented for a solar structure and experiment results are obtained.

Keywords: Bi Directional Converter, Solar Photo Voltaic, Soft Switching, Maximum Power Point Tracking.

1 Introduction

The application of solar photovoltaic is a modern concept and therefore must be applied by different method and technique. Electronic controls are used for the operation of thermal power plants. It is important to contain high performance transformer. Boost converters have lots of uses in high current, heavy loads settings. Solar photovoltaic power generation module is a strong choice for high voltage bus systems since it transforms sunlight into electricity. Since Converters that are actually feeding current are more powerful than conventional Converters that are actually feeding voltage, they have less limitations. Present limiting feature is important when interacting with very broad currents. This is that the former has more flaws than the latter. Transformer parasitic are very efficient in addressing Switching issues. and heavy switching losses of LCC. The earliest mechanical coupling between trains is a soft switched converter. There are different forms of soft switched series and parallel converters. This new breakthrough can be implemented by the researchers in many forms. The major categories of LC resonating converters are LCF-type, LC-type, LLC-type, LCC-type, CLLC-type, etc. The frequency varies to balance the rate of usage.

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Review on various image encryption schemes

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ABSTRACT

Image information security is a significant examination course in the field of data security. Images unreasonably add to correspondence in this time of interactive media. At the point when a client moves images over an unstable correspondence organization, at that point the total security is a moving matter to monitor the privacy of images. Encryption is the technique by which data is changed over into mystery code that shrouds the data's actual importance. This work contributes the review of various image encryption methods, unique image is changed to trivial irregular clamor signal which would draw consideration and consequently pull in assaults and examination of discrete image encoding procedures, at long last end with end and upcoming works.

1. Introduction

One of the common kinds of portrayal is an image. Image is a sight and sound part identified by human understanding. Image information security is a critical assessment course in the field of information security. These days, mystery images are moved over the web for political, clinical, military, social, and for a few significant business purposes. Accordingly, the fundamental objectives for image encryption are information secrecy, information respectability, validation, and non-disavowal. Every communicator needs to guarantee that the genuine recipient's soul ought to get the image with no snooping and intercession from an outsider for each correspondence. Image data security is a significant exploration heading in the field of data security [12,3]. Data security is the of correspondence networks in light of the fact that; there happens an issue during sharing data [2,4]. Two major classifications of the cryptographic protocol are symmetric key and asymmetric key protocols [7]. (See Table 1).

In symmetric-key cryptography, a similar key is utilized for enciphering and decoding. The sender and receiver should know the key for the proper decoding of data.. For the case of an asymmetric key cryptosystem, the key utilized for enciphering and that for unscrambling are different. The cryptographic methodology that chips away at the premise of mathematical calculation is called public-key cryptography [5]. The fundamental thought behind such a framework is that however it is computationally conceivable to create a couple of public and private keys it is considerably hard for an enemy to remove the private key from the public key [7].

2. Cryptography mechanisms

One method of securing the information is by applying cryptography systems. It is utilized to make sure about the information away and information on the way. It guarantees the privacy and honesty of the information [2]. (See Fig. 1).

2.1. Visual secret sharing scheme

In this paper [1], suggested Visual secret sharing plot is an engraving method to shroud mystery messages into at least two inane images, known as shares. Multi secret sharing plans are used routinely to share various favored bits of knowledge. The organization coordinator shares numerous mystery images utilizing this basic offer. The calculation charge is the significant downside of such a plan. The double number juggling-based plan uses particular worth choosing capacity while encoding and deciphering mystery images Particular worth choosing capacity improves irregularity property of offers and satisfies limit property. Hence, the proposed strategy gives a computationally productive technique while fulfilling limited security measures. The suggested

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Steer by Wire (SbW)

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***Abstract*—This project is focused on replacing the mechanical steering system with an algorithm, electronics and actuators. Steer by Wire opens up new possibilities for vehicle light-weighting and packaging flexibility. While the complete separation of the steering wheel from the road wheels provides exciting opportunities for vehicle dynamics control. The project includes an obstacle detection collision-free system using an ultrasonic sensor.**

Keywords---SbW, PWM, Atmega328, Obstacle, Potentiometer

I. INTRODUCTION

A steer-by-wire system aims to eliminate the physical connection between the steering wheel and the wheels of a car by using electrically controlled motors to change the direction of the wheels. Today's automobiles benefit more and more from the many uses of electronic systems. The integration of a steer-by-wire system can enhance these systems in many ways. In particular, the handling and the safety of the cars can be improved significantly. Since a Steer-by-wire system is easily modifiable, different drivers will be able to adjust the system to accommodate their styles and this will enhance handling. A steer-by-wire system is one that, in an ideal setup, does away with the mechanical connection between the vehicle's steering wheel and steering system. With a steer-by-wire system, the driver's inputs are instead monitored by sensors and electronically transmitted to the car's steering gear - doing away with the need for the mechanical link.

II. LITERATURE SURVEY

The steering system, in automobiles, steering wheel, gears, linkages, and other components are used to control the direction of a vehicle's motion. Because of friction between the front tires and the road, especially in parking, an effort is required to turn the steering wheel. To lessen the effort required, the wheel is connected through a system of gears to components that position the front tires. The gears give the driver a mechanical advantage, i.e., they multiply the force he/she applies, but they also increase the distance through which he must turn the wheel to turn the tires a given amount. Various types of gear assemblies, none with any decisive advantages over the others, are used, although some manufacturers prefer a rack-and-pinion system. In faster, heavier cars the amount of force required to turn the tires can be very great. Many of these cars use a power-steering system. The system contains a hydraulic booster, which operates when the engine is running and supplies most of the necessary force when the driver turns the wheel. When a vehicle turns at a

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UV based Currency Sterilizer and counting box with Fingerprint recognition (UVCF)

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Abstract— As we are living in a world where more and more lethal viruses and bacteria are being created, it's essential to keep humans safe. According to a recent study bacteria and viruses including the SARS-CoV-2 virus is able to survive for 28 days on smooth surfaces like currency notes. Here comes the use of Ultraviolet lights which, when emitted at certain wavelengths and for specific amounts of time, UVC light can damage the genetic material in bacteria and viruses, inhibiting their ability to replicate and, in turn, causing their normal cellular functions to break down. So we propose to create a currency handling/storage box inside which the currency will be treated to a UV light so as to sterilize the currency which would replace the traditional cash boxes used. The currency of each denomination would be automatically counted. In order to increase the safety, the box would be set up with a fingerprint lock. This type of boxes finds its application in various places like Malls, Hypermarkets, Supermarkets, and Other places where public and cash inflow are high.

Keywords— UV Sterilization, Corona virus, Currency counting, Currency safe box, Fingerprint

I. INTRODUCTION

The COVID-19 pandemic has led to a very large loss of human life all around the world and it creates a unprecedented barrier to public fitness, food systems and the sector of work. The economic and social disruption resulting from the pandemic is devastating: tens of tens of thousands and thousands of human beings are vulnerable to falling into intense poverty, while the number of undernourished human beings, presently expected at almost 690 million, ought to increase by up to 132 million. Millions of organizations face an existential threat. Nearly 1/2 of the world's three billion international staff are susceptible to losing their livelihoods. Informal economy employees are especially vulnerable due to the fact the majority lacks social safety and get right of entry to to excellent fitness care and have lost access to efficient assets. Without the way to earn earnings at some stage in lockdowns, many are not able to feed themselves and their families. The corona virus can be a present on numerous surfaces which can be in common use by human beings and can get transferred to others whilst they come in touch with the floor because the virus aren't seen to bare eyes. One of the maximum used generally shared surfaces will be the currency notes because it goes from one hand to another in no time. As it's one of the maximum generally used surfaces that movements from one man or woman to any other, the possibilities of the presence of the viruses are very excessive and it's far important to ensure the foreign money are nicely secure from the presence of viruses. This is wherein the usage of Ultraviolet primarily based totally foreign money sterilization is available in to picture. Our proposed system, with the aid of using the assist of Ultraviolet –C rays make sure that the foreign money surfaces are sterilized and are loose from the presence of viruses and germs.

II. HARDWARE USED

1.Arduino Microcontroller - Arduino is a microcontroller board primarily based totally on the ATmega328P.It has fourteen digital input/output pins, 6 analog inputs, a sixteen MHz ceramic resonator (CSTCE16M0V53- R0), a USB connection, a energy jack, an ICSP header, and a reset button. It consists of everything to support the microcontroller; just join it to a laptop with a USB cable or power it with an AC- to-DC adapter or battery to get started. We can tinker with the Uno without worrying too much about doing something wrong, the worst-case situation you could change the chip for some bucks and begin over again. It is featured through the Atmega16U2 (Atmega8U2 as much as model R2) programmed as a USB-to-serial converter. There are numerous varieties of Arduino forums wherein lots of them have been third-celebration likeminded model. Uno" manner one in Italian and changed into selected to mark the discharge of Arduino Software (IDE) 1.zero. The Uno board and model 1.zero of Arduino Software (IDE) have been the reference variations of Arduino, now developed to more recent releases.

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IOT BASED AIR QUALITY MONITORING SYSTEM

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Abstract- Air pollution affects day to day activities and quality of life. High levels of air pollution can cause an increased risk of heart attack, breathing problems, coughing and other lung complications. Researchers found that an increase in exposure to hazardous air pollutants is associated with a 9 percentage increase in death among patients with COVID-19. Existing monitoring systems required laboratory analysis. Here monitoring the parameters gases (ammonia, co, sulphide) and dusts in a particular local area. The pollution data will be available with individuals by using IOT based air pollution monitoring system.. Internet of things is nothing but a combination of sensor and software with the embedded electronics. The air monitoring system collects the data from the area where the sensors are deployed and the data can be displayed on the mobile or computer screen by using blynk app. Hence by using IOT, the air pollution level of the campus even cities can be monitored and necessary advisory can be issued if required.

Keywords— Internet of things, air pollution, sensors, monitoring system,aurduino

I. INTRODUCTION

Air pollution is one among the most important threats for the surroundings and affects everyone: humans, animals, crops, cities, forests, aquatic ecosystems. Air pollution refers to the discharge of pollutants into the air-pollutants that are prejudicial to human health and therefore the planet as a full. in line with the planet Health Organization (WHO), every year pollution is answerable for nearly seven million deaths round the globe. 9 out of 10 kith and kin presently breathe air that exceeds the WHO's guideline limits for pollutants, with those living in low- and middle-income countries suffering the foremost. Air pollution may be outlined as an alteration of air quality that may be characterized by measurements of chemical, biological or physical pollutants within the air. Therefore, pollution suggests that the undesirable presence of impurities or the abnormal rise within the proportion of some constituents of the atmosphere. It may be classified in a pair of sections: visible and invisible pollution. Visible pollution, as its name implies, may be visible. The smogginess over a town is an example of visible pollution. Invisible pollution is a smaller amount visible, however may be a lot of deadly. sensible samples of invisible air pollutants dust, carbon monoxide gas and atomic number 7 oxides.

II. EXISTING SYSTEM

The commercial meters available in the market are Fluke CO220 carbon monoxide meter for CO, Amprobe CO2 meter for CO2, ForbixSemicon LPG gas leakage sensor alarm for LPG leakage detection. The researchers in this field have proposed various air quality monitoring systems based on WSN, GSM and GIS. Now each technology has limited uses according to the intended function. as Zigbee is meant for users with Zigbee trans-receiver, Bluetooth. GIS based system is designed, implemented and tested to monitor the pinpoints of

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A Review on Agro-Voltage Technology-a Solution to the Farmers in India

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Abstract: ***Anxieties and loan relinquishments have fetched the finance of farming in attention. Most of the debate is related to minimum support price, farmer's average wages and loan repayment ability. But one of the main problems faced by the farmers is electric supply. Agriculture voltage technology can upsurge the income of farmers by generation of electricity and growing cash crops on the same land. This review paper discusses about different types of agro-voltaics, the KUSUM scheme and its different components in detail which is launched by the Central Government of India and how it can help the farmers with better profits.***

Keywords: **Agriculture voltage technology, KUSUM scheme, solar arrays, stilled solar arrays, green house solar arrays.**

I. INTRODUCTION

Agro-voltaic or agro-photovoltaic is the direct usage of land for solar energy and agriculture. The co-occurrence of solar panels and crops means dividing the light amongst these two types of production, so the plan objectives of the agro- voltaic necessitate trade-offs such as improving harvests, crop value and energy production. Currently, relevant practices and laws regarding solar energy production differ from country to country. In Europe and Asia, where the idea was first introduced, the term "agro-voltaic" is used to mention to distinct dual-use of technology. Usually the land is located on the roof of a greenhouse with installed agricultural equipment or solar panels. The shadows created by these systems can decrease the yield of some crops, but these losses can be compensated for by the energy produced. Although many pilot plants have been installed by administrations around the world, these systems are not known to be commercially feasible outside of China and Japan. The greatest significant factor in the profitability of agro-voltaic is the cost of installing solar modules. It is expected that the development of this project in Germany, the subsidy given for such projects by a bit extra than 300% can mark the scheme profitable for stockholders and therefore can be a portion of the upcoming combination of electricity generation.

In 2019, several authors began to use the term agro-voltaic in a broader sense to encompass all agricultural activity in the existing traditional solar system. For example, sheep can graze amongst prevailing solar panels deprived of major alterations. And in the United States, small scale schemes that abode hives on the edge of existing solar arrays are called agricultural

power grids. Similarly, agro-voltaic is widely accepted by some as it involves installing solar panels only on the rooftops of a barn or cattle shed.

II. METHODS

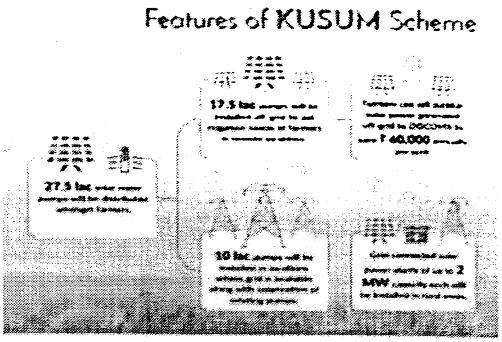
There are three fundamental kinds of agrivoltaics which might be being actively researched: sun arrays with area among for plants, stilted sun arrays above plants, and green house sun arrays. All 3 structures have numerous variables used to maximize sun electricity absorbed in each of the panels. The major variable taken into consideration for agrivoltaic structures is the lean attitude of the sun panels. Other variables taken under consideration for selecting the area of the agrivoltaic device are the plants chosen, panel heights, sun irradiance and weather of the area.

Some of the system designs are as follows:

- Orientation of sun panels within side the south for constant or east-west panels for panels rotating on an axis.
- Spacing among sun panels for enough mild transmission to floor crops.
- Elevation of the assisting shape of the sun panels to homogenize the quantities of radiation at the floor.

III. ABOUT KUSUM SCHEME

The scheme objectives to offer more earnings to farmers, via way of means of giving them a choice to promote extra energy to the grid via solar parks installed on their



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CASCADED MULTICELL TRANS Z-SOURCE INVERTER.

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Abstract- This thesis presents an impedance-source or power converter type and with it's control method. The Z-source converter presented here is for dc to ac converter, voltage source inverter. In fact; the Z-source inverter's concept can be applied to other conversion topologies such as dc-dc, acdc and ac-ac converters. Since it is invented, the Z-source inverter has shown great advantages over the classical voltage-source and current-source converters. The concept of shoot-through is utilized which allows the one-leg's switches to switch simultaneously in case of voltage source inverter; which was not allowed before. The shoot-though allows further improvement in the output voltage range, where it is used to increase the output level. Simulation using PSCAD are presented for single phase Z-source inverter controlled using pulse width modulation in order to show the basic operation of the converter.

Keywords: Converter; impedance-source inverter; pulse width modulation; voltage source inverter; current source inverter

I. INTRODUCTION

In this project, the proposed four-port dc/dc converter is derived by simply adding two switches and two diodes to the traditional half-bridge topology and makes operations much easier the other three port topologies. This reference paper tile and authors is attached.

Circuit analysis and design considerations are presented; the dynamic modeling and close-loop design guidance are given as well. Experimental results verify the proposed topology and confirm its ability to achieve tight independent control over three power-processing paths. This topology promises significant savings in component count and losses for renewable energy power-harvesting systems.

The idea of impedance-source converter (ZSI) was originally developed due to the limitation in VSIs and CSIs. The conceptual and theoretical limitations in the conventional converters types limited their application and complicate their control methods. While the ZSI great advantage can be seen as: it can operate as VSI inverter (buck type) or as CSI inverter (boost type) depending on the application. Where the output voltage can ideally ranges from zero to infinity. 2 Since the invention of the ZSI inverter, there are hundreds of research works on this interesting topology, and this thesis presents it's basic operation and control.

II. MODEL OF TZSI

The model of Z Source Inverter comprises DC voltage source (Vdc) to supply DC voltage to the circuit, X shaped impedance

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AUTO ACCIDENT PREVENTION AND DRIVER MONITORING

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Abstract- Driver sleep detection is a car safety technology which helps to prevent accidents when the driver gets drowsy. Various studies have suggested that around 20% of road accidents are fatigue related. A sleep alarm is used in a vehicle for detecting the condition indicative of the onset of sleepiness of a driver and for alerting the driver. An eye blink sensor is used to keep track of the driver's eyelid motion. If the predefined safety conditions are not met, then the driver is alerted by producing an alarming sound from the inbuilt car speakers primarily. Secondly, a vibrating device is incorporated within the driver's seat which activates when the conditions are not satisfied. Taking into account of the worst-case scenario, that is, if the driver does not respond to any of these alarms, then, using the proximity sensors, the obstacles around the vehicle is detected, and the brakes are automatically applied gradually

Keywords— eyeblink sensor, microcontroller

I. INTRODUCTION

As most of the accidents in highways occur when a driver falls asleep during night. These are also dangerous for vehicles near to it. So as the prevent accident drivers eye movement is sensed using eye blinking sensors and a beep sound is produced along with water is prayed to face of driver. If he still cannot awake or cannot become active the control circuit activates and stop the vehicle. Before stopping the vehicle, it is not stopped suddenly, before stopping some alert signals are provided to the near vehicles for a period in seconds so they become alert. Here arduino(microcontroller) is the major part which interacts with sensors and actuators. Sensors are the eye blink sensors and actuators are vehicle braking and water spraying. LCD displays are used for displaying warning signals for nearby vehicles. The ultrasonic sensor detects the obstacles and sends the signal to the Arduino board in order to actuate the pneumatic circuit for applying the break.

II. PROPOSED SYSTEM

The proposed system contains monitoring drivers face by detecting the eye ball movements of the driver. The components we are using here are mainly eyeblink sensor, a microcontroller, a ultrasonic sensor and a display. The software for loading program in the microcontroller is done by the Arduino IDE software. The program is typed and checked for errors and is compiled. The eyeblink sensor is fixed in wearable spectacles which suits in the drivers face. The ultrasonic sensor for measuring distance between vehicles is fixed at the back of the vehicle. A display is also fixed at the back of vehicle to provide warning signals and alert nearby vehicles. The circuit is given power from vehicle battery itself. The total circuit function with respect to the coded language loaded in the microcontroller. At mega 328p microcontroller is used here.

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Smart Energy Meter with Bill Prediction

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Abstract- The amount of electricity consumption is rising day by day and simultaneously the amount of electricity wasted is also rising. This paper aims to introduce a smart prepaid energy metering solution for domestic loads, which mainly tries to solve two main issues - One being the wastage or over usage of electricity in houses and the other to solve the problem of manually reading the meter for billing which contains microcontroller and GSM module. In this system a prepaid energy meter is installed in the house, which enables the system to communicate with the user through SMS. The user can monitor their real time energy usage through a web interface. The data like line voltage, current, power consumption, available balance, individual current usage are uploaded to the web. So the users can monitor and reduce their consumption and also the errors while acquiring the meter reading is also solved.

Keywords— Smart prepaid energy meter, Bill prediction, Load control, Web interface.

I. INTRODUCTION

Smart Meters have modernized the way of metering the energy usage by consumers. The main purpose of SEM is to create the necessary infrastructure for collecting information on energy consumption of household appliances and monitor the environmental parameters and provide the necessary services to home users. Using the proposed SEM, the following capabilities will be realized: - Monitoring and calculating the instantaneous power consumption, line voltage. Providing timely information to the customers about their current power consumption and the cost of consuming electricity up to now. Processing the power consumption data to provide useful information for both customers and the utility companies. The proposed system encompasses a program that predicts the monthly bill which the user might have to pay at the end of the month. The consumers can cut the desired loads when they exceed their usage and also can cut the whole load whenever necessary. All these information will be displayed and can be controlled with the help of a webpage.

II. PROPOSED SYSTEM

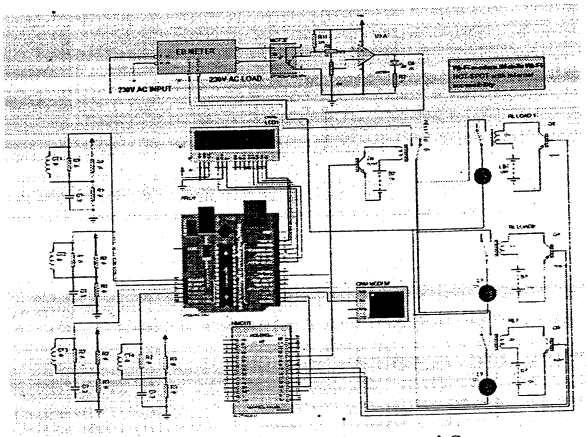

Figure 1: Circuit Diagram of Proposed System

The power supply to the design is given from a 230V ac supply. This is directly given to the energy meter. In prepaid technology the units consumed is obtained from the number of pulses generated by the CAL LED of the energy meter.

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DUAL AXIS SOLAR TRACKING WITH REDUCED ALGORITHM AND WEATHER DETECTION

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Abstract- As the population is peaking in a drastic manner, it is increasing the need for electricity. The various ways of electricity generation includes Hydro power plant, Nuclear power plant, Windmill plants and also Solar power plants. The former two are Non-Renewable source of energy; hence we cannot depend only on such technology. Also Depending continuously on energy from Hydro and Nuclear is equally difficult. The others left with are Renewable source of Energy; nowadays we have lots of power plants established on Solar and Wind Technology. Our project aims at Dual axis or Dual direction with reduced algorithm and weather sensing. The Solar panel used in this system can adjust its direction both in X-Y co-ordinates. This helps better directivity with Sun rays, thus increasing the efficiency of the solar system. Also it's reduced algorithm structure helps in better functioning.

I. INTRODUCTION

Electrical energy from solar panels is derived by converting energy from the sun rays into electrical current. The main challenge is to maximize the capture of the sun rays upon the solar panels, which in turn maximizes the output of electricity. There are two possible ways to enhance output power from solar energy based systems. Either one can use an efficient material in the manufacturing of the photo voltaic cell or use a solar tracker to follow the sun.

Why is it practically possible to install solar panel in India? The Earth is an obligated sphere, meaning that it is a sphere that is flattened at the poles and bulges around the equator. For solar power calculations it is sufficient to consider the Earth as a simple sphere with a diameter of approximately 12800km.Points on the Earths surface are defined in terms of longitude and latitude. The Earth rotates around its axis every 24 hours and orbits the sun every 365.25 days (Approximately).The axis of rotation is tilted at an angle of 23.45Â° with respect to the plane of the orbit around the Sun. The axis is orientated so that it always points towards the Pole Star .This accounts for the seasons and changes in the length of day throughout the year. The angle between a linejoining the centers of the Sun and the Earth and the equatorial plane is called the declination angle. Because the axis of the Earths rotation is always pointing to the Pole Star the declination angle changes as the Earth orbits the Sun

India lies in the Tropic of cancer region .This makes it practically possible for implementing solar panel in our country compared to the countries located

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SMART CHARGER FOR V2V CHARGING OF ELECTRIC VEHICLES

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Abstract- Battery-powered Electric Vehicles (EVs) are a green and clean mode of transportation. In an EV, the battery can be charged by either on-board or off-board chargers. On-board chargers have been developed for EVs to be charged by an AC source; they enable charging of EVs from the very popular AC sockets but, in return, take up space and volume inside the vehicle. In turn, off-board chargers do not need any charging circuit inside the vehicle but require the deployment of proper equipment behaving as a controllable DC source. Off-board chargers are the mainstream in EV charging as they enable the arrangement of high-power equipment, thus making very fast the charging process. If an Internal Combustion Engine (ICE) vehicle stops due to lack of fuel, it can be refueled from a fuel station or the fuel can be carried in a container. In case of EV, if it stops due to lack of charging, it can only be charged from a charging station. In the present infrastructure scenario, the fuel stations are much more available compared to charging stations. This gives rise to the so-called range anxiety that is one of the main issues hindering the wide acceptance of EVs. To cope with such an issue, the increase of the flexibility in charging an EV is a way to go.Vehicleto-vehicle (V2V) charging represents an effective Solution as it allows EVs to be charged from other vehicles whether they are EVs or ICE vehicles. If the other vehicle is of ICE type, the battery charging would occur by drawing energy from its starter battery.

I. INTRODUCTION

If an IC engine stops due to lack of fuel, it can be refueled at a fuel station. In the same way, EV can be charged at the charging stations. In the present scenario fuel stations are more than the charging stations. Vehicle-To-Vehicle charging represents an effective solution as it allows EVs to be charged from other Electric Vehicles.

Electric Vehicles (EVs) powered with Battery are a green and clean mode of transportation. However, the slow development of efficient battery storage technology is the main issue. The charge capacity of battery in electric vehicle is complex problem design in battery making.

Now a days the charging station and battery capacity of electric vehicle are less so to overcome this problem we introduce the vehicle to vehicle charging facility.

II. WORKING

The vehicles that connect through ev2ev

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