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SYSTEMS**

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ST. JOSEPH

COLLEGE OF ENGINEERING

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PRINCIPAL MESSAGE



It gives me immense pleasure to welcome all the students, Staff and Reasearch Scholars from various colleges to our First International Conference on Information, Embedded and Communication Systems, ICIECS 2018 to our St. Joseph College of Engineering. This fest aim is to develop knowledge, awareness of social implications of their respective disciplines, communications and Research skills.

I hope that this International Conference would be much informative and fruitful to all participants, since which give opportunities for students, Staff and Reasearch Scholars to develop their level of confidence to work in any kind of environment. This Conference will definitely enhance basic fundamentals of subject and latest developments in the technology of their subjects. I am also particularly happy to observe that organizers have taken care to invite judges for different section of broad theme of Conference. Undoubted, it will be a great benefit to the participants and will enhance and strengthen their skills. It needs to be ICIECS 2018 said that will add feathers to the cap of our Institution.

I wish all grand success for ICIECS 2018.

ADMINISTRATOR MESSAGE



In this competitive world it has become the utmost necessity for students to get acquainted with the recent innovations and acquire an extremely good skill set in addition to their academic excellence. ICIECS 2018 is the perfect platform for the students, staff and Research scholars to prove their agility and bag their rewards. The main objective of this International Conference is to kindle the talents of the Engineering students, Research Scholars, Staff and to provide opportunities for them to know the technological developments in their field of specialization and share it with others.

Also, by organizing such Conference, students and scholars realize the worth of teamwork, which not only gives them a memorable experience but also will help them once they enter the corporate world. Hats off to the staff members and students, whose precious efforts have made ICIECS 2018 a success story. ICIECS 2018 will surely reveal new openings.

I wish all grand success for ICIECS 2018

CONVENOR MESSAGE



I welcome the participants of ICIECS 2018. The main goal of organizing this Conference is to share and enhance the knowledge of each and every participants. We have given a good opportunity for those who have a thirst in knowing the present technological developments and also share their ideas. Furthermore, this conference will also facilitate the participants to expose and share various novel ideas.

The International Conference aims to bridge the students and staff working in academia and other professionals through presentations in current technological trends. You will get opportunities to widen your knowledge and network.

I thank the conference committee for extending their valuable time in organizing the program and all the authors, reviewers, and other contributors for their sparkling efforts and their belief in the excellence of ICIECS 2018

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COUNTING FRUITS WITH DEEP LEARNING

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ABSTRACT: Our project provides the way to count number of fruits of a garden by using computerized methods. In manual counting that requires lots of human efforts. In this method view of a tree with fruits should be taken as an input to this application. It follows two steps of computations step one is identifying the fruits, second step is to count number of fruits. First step is to make the fruits should be visible by marking them. The areas other than fruits should be darkening. After this separation Counting algorithm easily counts the number of fruits of a photo. To check accuracy ground truth will be compared with the original results. In earlier methods of computerized applications that used techniques like fusion of colour and texture for fruit recognition and minimum Euclidean distance based segmentation technique for segment the fruit region from the input image. In this method colour and texture of a fruit may vary according to the surrounding. In our application we used blob detection to segment fruits of an image instead of using Euclidean distance. This one of the efficient ways of counting here numbers of workers should be reduced in compared to the ancient method of manual counting. It reduces the time to count fruits of a garden.

Keywords: Ground truth, blob detection, segmentation, automation.

FACTOR DATA SECURITY MECHANISM FOR CLOUD STORAGE SYSTEM

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ABSTRACT: In Bi-Factor Data Security Mechanism for Cloud Storage System, there is a two part data security protection instrument with component revocability for Cloud Storage System. By the cloud storage, the sender can send a mixed message to the receiver. The sender should know only the details of the receiver ie. mail-id, but not more than that. The authority needs two things in order to decrypt the cipher text. The first one is riddle key which is set in the PC. The second thing is an unique individual security contraption which connects with the PC. It is hard to decipher the ciphertext without either of these. Once the security contraption is stolen or lost, this device is repudiated. It can't be used to unscramble any ciphertext. This can be done by the cloud server, in which some algorithms are used immediately to change the existing ciphertext to be undecryptable form. This process is completely transparent to the sender. The cloud server cannot decrypt further. The security and efficiency analysis show that the system is not only secure but also practical.

Keywords: android, video, alice, bob, cloud.

ARMOURING THE INTERNET OF THINGS VIA BULWARK SECURITY

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ABSTRACT:The Internet of Things is the concept of connecting devices and integrating the sensors placed all over the place and collecting the information and processing the data collected form the sensors and monitoring through it. The Internet of things is a developing industry with its blooming applications like health care, agriculture, industry automation, smart city, and smart transportation...etc. On the other side of this we have many security breaches in this IOT. The security attacks include network attacks, wsn attacks...etc. this makes the IOT vulnerable. My proposed work to deal with security to fulfil to make the IOT successful. In this paper we propose a model to provide security to the IOT by combining the application and perception layer security solutions in the IOT architecture. By add security to it by doing so we can create an additional layer of security to our IOT devices to make it safer and secured. We consider the main scenario as smart home in this paper. The security solution consists of RFID and mac authentication security
Keywords: IOT, Security Solutions, smart city, fusion security, key management, IOT architecture, Perception layer, application layer.

AN ENHANCED APPROACH OF PHASE AND RESOURCE INFORMATION-AWARE SCHEDULER FOR MAPREDUCE

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ABSTRACT:MapReduce has become a popular model for data-intensive computation in recent years. Phase and Resource Information-aware Scheduler that improve execution parallelism and resource utilization without introducing stragglers. PRISM, a fine-grained resource aware scheduler that coordinates task execution at the level of phases. Where each phase has a constant resource usage profile, and performs scheduling at the phase level. HDFS holds very large amount of data and provides easier access. To store such huge data, the files are stored across multiple machines. The framework sorts the outputs of the maps, which are then input to the reduce tasks. Both the input and the output of the job are stored in file-system. Framework takes care of scheduling tasks, monitoring them and re- executes the failed tasks. Typically, the compute nodes and the storage nodes are the same that is, the MapReduce framework and Distributed File System are running on the same set of nodes.

A SURVEY OF SECURING CLOUD DATA USING DATA AUDITING SCHEMES

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ABSTRACT:Cloud computing is associate inclusive new approach on however computing services square measure made and utilized. Cloud computing is associate accomplishment of assorted styles of services that has attracted several users in today's state of affairs. The foremost enticing service of cloud computing is information outsourcing, because of this the information homeowners will host any size of information on the cloud server and users will access the information from cloud server once needed. A dynamic outsourced auditing theme that cannot solely defend against any dishonest entity and collision, however conjointly support verifiable dynamic updates to outsourced information. The new epitome of information outsourcing conjointly faces the new security challenges. However, users might not totally trust the cloud service suppliers (CSPs) as a result of typically they may be dishonest. It's tough to work out whether or not the CSPs meet the customer's expectations for information security. Therefore, to with success maintain the integrity of cloud information, several auditing schemes are projected. Some existing integrity ways will solely serve for statically archived information and a few auditing techniques is used for the dynamically updated information. The analyzed numerous existing information integrity auditing schemes together with their consequences

Keywords - Cloud computing, dynamic auditing, Multi-threading model, Data integrity

DESIGN AND IMPLEMENTATION OF ENVIRONMENTAL MONITORING IN SMART CITIES USING IOT WITH MACHINE LEARNING ALGORITHMS

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ABSTRACT-Smart City aim to make use of the public resources, increasing the quality of the services offered to the citizens, while reducing the operational costs of the public administrations. The urban IoT or Smart City may bring a number of benefits in the management and optimization of traditional public services, such as transport and parking, lighting. The Existing system, Padova Smart city project only concentrated on smart lighting system with deployed more than 300 nodes and periodically tested the environmental parameter in university of padova, Italy. The proposed system provides the efficient environmental monitoring system for citizens. This system mainly concentrates the environmental factor such as air quality, Noise level, light illumination, temperature and etc. The proposed system consists of four modules such as perception layer, network layer, service layer, application layer. In perception layer, the sensors are embedded with physical object present in our environment and it generates the sensor data. In network layer, sensor data to be stored in local database server or cloud storage through internet. In service layer, monthly or yearly data are taken into account for environmental data analysis. The machine learning algorithm is introduced to analyze the environmental factor and take the decision making accurately. The application layer gets the environmental information from service layer and public administrative officers take the decision based better living environment.

Key Words: Internet of Things, Smart City, Urban IoT.

PERFORMANCE MANAGEMENT SYSTEM

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ABSTRACT:Performance management is one of the most important Human Resource (HR) Development practices and is crucial for every organization. In the existing system they manually calculate the employee performance documentation in paper format. So we are proposing Performance Management System. Here, to improve the performance of the employees, it is necessary to evaluate their performance at regular intervals to understand where they stand, what is being expected from them and what they are actually contributing. The purpose of this project is to examine the relationship between Performance Management System (PMS), employee's job satisfaction and thus, their commitment to the organization by working. Employees with high quality performance appraisal experiences were more likely to be satisfied with their job. If the various characteristics of PMS that build commitment and satisfaction could be identified, then HR may be more capable of using PMS so as to yield positive results. The project deals with a detailed company profile. It includes the company's history, its activities and operations, organizational structure, etc. It attempts to give detailed information about the company and the nature of its functioning. HR will collect the information from the employee about his current project, previous project and non-project activities. HR will share this details to the reviewer. Reviewer will assign rating to the employee for performance appraisal. There will be annual performance evaluation leading to salary increase recommendation and promotions.

Keywords: Organization, Human Resources (HR), Employees, Reviewer, & Performance Appraisal

FPGA BASED RETINAL IMAGE SEGMENTATION USING MORPHIC TECHNIQUE

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ABSTRACT:Retinal image FPGA based segmentation is important for diagnosing various issues happens in eye. Retinal image segment is one among the crucial problems as a result of this image contains terribly little nerves and a few artifacts gift in it. This paper proposes associate automatic morphological FPGA based segmentation technique to vary the illustration of a picture into one thing that's additional significant and easier to research the interested object. There are many ways that shall perform FPGA based segmentation, however it's tough to adapt simply and observe the terribly little nerves accurately. To resolve this drawback, this paper aims to gift associate flexible automatic morphological FPGA based segmentation technique that may be applied to any form of retinal pictures that is strictly diagnosed even with the little changes that occur within the image. This projected technique is predicated in a very model of morph perform that applies the morphological watershed operator to a grey scale image. Morphological phase technique is employed to phase the image and choosing the particular image objects, cutting the article to found the basis nerves. Once employing a morphological operation to show the fundamental components among a picture, it's typically helpful to extract and analyze specific info regarding those image components. This proposed FPGA based segmentation performs region growing for agiven image region among the array that are connected to neighboring region pixels which fall among provided constraints.

Keywords: Binary, FPGA, Morphological, segmentation

VOICE BASED EMAIL FOR VISUALLY CHALLENGED PEOPLE

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ABSTRACT:The proposed system is based on a completely novel idea. The most important aspect is accessibility. It can be used efficiently by all types of people whether able or disable. The system includes the speech recognizes, Speech to Text(STT), Text to Speech(TTS), Context interpreter, Dialog Manager, Language generator, Interactive voice response(IVR), Automatic speech recognizer(ASR). The user can login and access email without the mouse click event. The user can login using command. The system focuses more on user friendliness of all types of people including normal people visually impaired people, removes the mouse click event and No need to remember keyboard shortcuts.

Keyword: Speech to text (STT), Text to speech (TTS), Interactive voice response (IVR), Automatic speech recognizer(ASR), Application program interface(API).

AN ENHANCED APPROACH FOR REDUCING ROAD ACCIDENTS USING IOT AND DATA MINING

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ABSTRACT—The road accidents are emerging as an increasing threat around the world. These are due to insufficient attention and unsafe state. The continuous increase in vehicula population leads to enormous growth of accidents which molds the safety measures. The major cause of road accidents is based on two issues, (i.e.) excessive speed and drunken driving. This paper deals with an accidents reduction system using IoT and Data Mining Techniques. Drunk and drive can be dealt with gas sensor which is installed at the middle of the steering to detect the alcohol consumption of the driver. The next important cause for more number of fatalities is rash driving which can be reduced by collecting the data with the speed and location and thereby analyzing them using Data Mining Techniques. Further the notification is given to the RTO or traffic authority. In case of repeated violation of speed limit, results in blocking of his or her license.

keywords—Drunk and Drive, Rash Driving, IoT, Data Mining Techniques, RTO, GPRS, Gas Sensor.

AN ULTRASONIC NAVIGATION AID FOR THE VISUALLY IMPAIRED IN THEIR OWN LANGUAGE

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ABSTRACT-Visually impaired people are at a hindrance, as they lack information on the obstacles and hazards in their paths. The essential information on their travel such as speed, direction of the objects ahead which is to be known is less. The advanced existing methods use robotic assistance, RFID's which are more complex and costly. Hence this paper proposes a cost effective system where a mobile application is created which connects with a sensing device. Ultrasonic is the main concept used for sensing the objects or obstacles at their path. The direction in which the user has to move once the object at the path is sensed is provided as a voice instruction in their native language by the mobile application.

Keywords-Cost Effective, mobile application, native language, ultrasonic, visually impaired

REMOVAL OF BOTS IN SOCIAL MEDIA USING FACIAL RECOGNITION TECHNIQUE

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ABSTRACT— The presence of bots has been a long standing problem in the field of computer science and that too particularly in social media which includes the likes of Facebook, Instagram, Twitter etc and also various mail including Gmail, Yahoo, Rediff etc. . The various statistics released by numerous sources have been quite astonishing. The number of bots present has been increasing year by year and there have been many methods to prevent this. The quite familiar topic would be of captcha but captcha can be easily breached. So, in this manuscript we propose an new model in the form of facial recognition system which will eliminate the use of bots to a certain extent. This model already has been used in many models including Apple which in his new model Iphone x implemented this model. So, we use the more favorable technique like a facial recognition system to try to eliminate the bots in social media and in mail

Keywords Bots, facial recognition, social media

A SURVEY ON DATA CONFIDENTIALITY AND ACCESS CONTROL USING JAR PROGRAMMABLE IN CLOUD COMPUTING

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ABSTRACT: Cloud computing is a new computing style which provides IT infrastructure and software as dynamic, scalable, and pay-per-use services. One of its characteristics is that enterprise data are hosted by storage service providers in the cloud. Hence strong data security must be taken into account for planning migration of business applications into the cloud. One of cloud's characteristics is that data storage or data centers are, outsourced to specialized storage services where multi-tenancy may take place. To address this problem, we use a novel highly decentralized information accountability framework to keep track of the actual usage of the users' data in the cloud. In particular, an object-centered approach that enables enclosing our logging mechanism together with users' data and policies in from of encryption using some technique. We leverage the JAR programmable capabilities to both create a dynamic and traveling object, and to ensure that any access to users' data will trigger authentication and automated logging local to the JARs. To strengthen user's control, we also provide distributed auditing mechanisms.

Keywords: Cloud computing, accountability, framework, data sharing.

CON-TEXT TECHNIQUE FOR TEXT INVESTIGATION FOR FINE-GRAINED TARGET GRADING

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ABSTRACT—Text characters in natural scenes and surroundings provide us with valuable information about the place and even provide us with some legal information. Hence, it's very important for us to detect such text and recognize them which helps a lot. But, it's not really easy to recognize that text information because of the diverse backgrounds and fonts used for the text. At present, state-of-the-art text detection method performs an explicit character detection. It focuses only on character detection with no spatial constraint which leads to missing of characters. This leads to increase in computational time for character localization and textual cue encoding. In this paper, fine-grained classification approach is proposed for combining textual and visual cue encoding. This work focuses on eliminating background which reduces false text detection. Text saliency have been processed by two methods to perform text recognition using ABBYY commercial OCR machine and character recognition algorithm. The proposed spatial encoding is used to form bi-grams and tri-grams from the recognized characters. This results in retrieving text from images and further the logo embedded with text is also retrieved. At last the retrieved text is translated into different languages. This work improves accuracy level in detecting and recognizing characters and reduces the search space of characters.

Keywords—fine-grained classification; text saliency; text detection; Spatial constraints.

THE PREDICTING SOFTWARE PERFORMING SOFTWARE PERFORMING ANALYSIS ON BIG DATA USING MACHINE LEARNING ALGORITHM

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ABSTRACT: Big Data is a huge amount of data which can be used for various applications including medical field. Data Analysis is an ever more basic activity that is done in almost all research fields including medical circumstances. The prediction software explained in this paper performs analysis on a medical dataset and predicts the health condition of people based on given specification. The front end developed using the C# .NET platform in Visual Studio IDE provides an interactive interface which enables even the novice people to interact with the application and perform data analysis. The database connection used here is the Microsoft SQL Server Database File (SqlClient) with Local machine database for storage. The data analysis using various machine learning algorithms is done with the data analysis platform provided by the Visual Studio. The interface created is very efficient by making common people other than data analyst interact with it. The software can be altered to be used in any kinds of application and fields based on the user requirement.

ROBOTIC GUIDING VEHICLE CONTROLLED BY A DEVELOPMENT BOARD WITH VOICE ENABLED ANDROID APPLICATION INTERFACE

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ABSTRACT: Smartphones are widely used devices for the purpose of communication and networking. Differently abled people can also use these smartphones easily either through voice control or its touch and vibrating sense. In this paper, a robotic vehicle controlled by android smartphones is used for guiding these people for movement and reading images in front of them. It provides directions to the user and it can also identify individual things by reading its name in the label using Android application. The development board integrated with HC05 Bluetooth module is used for movement with the help of AT89S52 microcontroller and motor driver. DroidBot is the android application developed for this purpose to control movement and read the images to the user.

SOS SAFETY APPLICATION WITH REAL-TIME DATABASE AND DATA- STREAM NETWORK

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ABSTRACT: The application incorporates all the unique features such as real-time location tracking and integrates all the features offered by the existing system such as GPS tracking, SOS. The application requires an initial registration along with emergency contacts. When the SOS button is pressed then an alert message which contains the name of the user, GPS Location and a help message is sent via SMS. The user has access to first-aid information and toll free helpline phonenumber. All the information and data is integrated with Firebase.

Keywords: SOS-Save Our Souls, GPS-Global Positioning System, Pub Nub: DataStream network and Firebase: No SQL Real- time Database, Analytics SMS-Short Message Service.

STRONG CIPHER TEXT FORCLOUD DATA BY PARTITION OF FILES

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ABSTRACT: Recent news reveal a powerful attacker which breaks data confidentiality by acquiring cryptographic keys, by means of coercion or backdoors in cryptographic software. Once the encryption key is exposed, the only viable measure to preserve data confidentiality is to limit the attacker's access to the cipher text. Spreading cipher text blocks across servers in multiple administrative. Nevertheless, if data is encrypted with existing schemes, an adversary equipped with the encryption key, can still compromise a single server and decrypt the ciphertext blocks stored therein. In this paper, we study data confidentiality against an adversary which knows the encryption key and has access to a large fraction of the cipher text blocks. We propose Blowfish, efficient scheme that guarantees data confidentiality even if the encryption key is leaked and the adversary has access to almost all cipher text blocks. Evaluate its performance by means of a prototype implementation. Incurs less than 5% overhead compared to existing semantically secure encryption modes.

Keywords: coercion, data confidentiality, Blowfish, cipher text

ADVANCED STUDENT IDENTIFICATION SYSTEM USING RFID

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ABSTRACT: In this paper describes the design of RFID based security and access control student identification system was build using open source software and it will reduce the cost of development process. The system can be easily accessed by students and staff or faculties. When the RFID reader installed at the entrance of schools and colleges detects a register number, the system captures the user image and scans the database for a match. If both the id card and captured image belong to a registered user, access is granted otherwise the system turns on the alarm and makes an emergency call to the security van through GSM modem .In this way ,the suspicious persons can be caught .Nowadays, asset security is an important which plays a vital role in planning and construction of buildings. Usually we use lock and key based open for homes and offices. But, our aim was to come up with a cost-efficient RFID reader and lock that could be installed at the entrances of various offices of the workplace. These locks would also be the nodes of a local network with a central server that would facilitate two-way communication between the central server and each of the locks.

Keywords: security and access control, RFID Reader, PINS, GSM modem, database, antenna, transponder, wifi.

ANALYZING THE USER NAVIGATION PATTERN FROM WEBLOGS USING DATA PRE-PROCESSING TECHNIQUES

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Abstract: Web Usage Mining (WUM) is a kind of data mining method that can be used to discover user access patterns from Web log data. A lot of research has been done already about this area and the obtained results are used in different applications such as recommending the Web usage patterns, personalization, system improvement and business intelligence. WUM includes three phases that are called preprocessing, pattern discovery and pattern analysis. There are different techniques for WUM that have their own advantages and disadvantages. This paper presents a survey on some of the existing WUM techniques and it is shown that how WUM can be applied to Web server logs

Keywords: web usage mining, web log mining, pattern discovery, preprocessing, sequence mining.

JOINT RATE CONTROL AND SCHEDULING IN MULTI HOP WIRELESS NETWORKS

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ABSTRACT: Backpressure plans are known to balance out stochastic systems using clog slopes in directing and asset assignment choices. In any case, these plans share a noteworthy disadvantage, to be specific, the postpone ensures are gotten just as far as normal esteems. Accordingly, discretionary bundles may never achieve their goal because of both the starvation and last-parcel issues. These issues happen since in backpressure plans, parcel booking needs a resulting stream of bundles to deliver the required blockage slope for planning. To tackle these issues, we characterize a sans starvation soundness model that guarantees a rehashed departure of all system lines. At that point, we present SF-BP, the to start with backpressure directing and asset portion calculation that is sans starvation stable. We additionally introduce more grounded per-line benefit ensures and give apparatuses to upgrade feeble streams. We formally demonstrate that our calculation guarantees that all bundles achieve their goal for wide groups of systems. At last, we confirm our outcomes by broad recreations utilizing testing topologies and in addition arbitrary static and dynamic topologies.

Keywords: Incremental Frequent Pattern Mining (IFPM), Model View and Controller (MVC), JSP, Servlet, Java Script, Bean Classes, Java Database Connectivity Technology

CLOUD STORAGE DATA PROTECTION USING MULTI FACTOR MECHANISM

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Abstract: Data security plays an important role in cloud data storage and information retrieval. We enhance the Data security protection mechanism for cloud using two components. During this system sender sends an encrypted message to a receiver with the assistance of cloud system. The sender needs knowing identity of receiver however no would like of different data like certificate or public key. To decode the cipher text, receiver desires two components. The primary issue may be a unique personal security device or some hardware device connected to the computer system. Second one is personal key or secretes key hold on within the computer. While not having these two factors cipher text ne'er decrypted the necessary thing is that the security device lost or stolen, then cipher text cannot be decoded and hardware device is revoked or cancelled to decoded the cipher text.

Keywords: Attribute Based Encryption, Identity based Encryption, proxy re-encryption, revocability, two-factor, cloud storage.

SMART ASSISTANT FOR VIRTUAL IMPAIRED PEOPLES BY USING RASPBERRY PI 3

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ABSTRACT: The feasibility of an electromagnetic sensor to assist the autonomous walking of visually impaired and blind users is demonstrated in this paper. It is known that people affected by visual diseases usually walk assisted by some supports, among which the white cane is the most common. Our idea consists in applying microwave radar on the traditional white cane making aware the user about the presence of an obstacle in a wider and safer range. Compared to the already existing Electronic Travel Aids devices, the proposed system exhibits better performance, noise tolerance and reduced dimensions. In the following, the latest developments of this research activity are presented, with special concern for the miniaturization of circuit board and antennas. A laboratory prototype has been designed and realized and the first test results of obstacle detection are hereby shown to demonstrate the effectiveness of the system.

Keywords: Electronic travel aids, visually impaired assistance, autonomous walking, short-range radar, pulse compression technique.

SECURE DATA TRANSMISSIONS IN WIRELESS NETWORK AGAINST STEALTHY USING DIFFIE HELLMAN

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ABSTRACT: Physical-layer secure transmissions require that the legitimate parties Alice and Bob have certain signal advantages over the eavesdropper Eve. Unfortunately, it is still unknown what advantages can be guaranteed realistically in practice. This letter shows that hybrid massive MIMO can be exploited to the advantage of Alice for this purpose. Specifically, it allows Alice to use large antenna arrays that stealthy eavesdroppers cannot afford in many practical situations. To realize this advantage, an efficient transmission scheme is developed with hybrid massive MIMO, random dumb antenna selection and channel reciprocity-based signal randomization techniques. It can secure the transmission against multiple stealthy eavesdroppers. Transmission security is analyzed assuming eavesdroppers with sufficient side knowledge and channel estimation capabilities. Simulations are conducted to verify the superior performance.

Keywords: Burrows–Abadi–Needham (BAN) logic, Non zero knowledge (NZK), Java Script, SQLDatabase.

SPAMMER ACCOUNT DETECTION IN ONLINE NETWORK USING VIRTUAL CURRENCY

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ABSTRACT: Online social networks gradually integrate financial capabilities by enabling the usage of real and virtual currency. They serve as new platforms to host a variety of business activities such as online promotion events, where users can possibly get virtual currency as rewards by participating such events. Both OSNs and business partners are significantly concerned when attackers instrument a set of accounts to collect virtual currency from these events, which make these events ineffective and result in significant financial loss. It becomes of great importance to proactively detecting these malicious accounts before the online promotion activities and subsequently decreases their priority to be rewarded. In this paper, we propose a novel system, namely ProGuard, to accomplish this objective by systematically integrating features that characterize accounts from three perspectives including their general behaviors, their recharging patterns, and the usage of their currency. We have performed extensive experiments based on data collected from Tencent QQ, a global leading OSN with built-in financial management activities. Experimental results have demonstrated that our system can accomplish a high detection rate of 96.67% at a very low false positive rate of 0.3%.

COMPLEX CYBER-PHYSICAL NETWORKS FROM CYBER SECURITY TO SECURITY CONTROL

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ABSTRACT: Distributed tracking problem for complex Dynamical Networks with Lipschitz-type nonlinear dynamics under the framework of cyber-physical systems is investigated. Due to practical limitations in some circumstances, the states of the agents are usually unavailable for controllers, so distributed observers used to reconstruct the states of nodes are needed, which will be first designed. Differing from other studies of observer-based control problems for complex Dynamical Networks and multi-agent systems, it considers here the scenario that the communication channels for controllers and observers may be subjected to frequently malicious attacks, which will destroy the communication links and result in disconnected topologies of the communication networks.. By utilizing the Lyapunov stability theory, sufficient conditions are derived to check whether final consensus tracking can be achieved against such attacks. Finally, a simulation example comparing the security control and uncontrolled scenarios is demonstrated to show the effectiveness of the theoretical results.

Keywords: Open Systems Interconnection (OSI), Network attached-disks (NADs), Authenticated Key Exchange (AKE), Encrypted Key Exchange (EKE), Key Management Server (KMS), Data Encryption Standard (DES), Secret Key Cryptography (SKC), and Public Key Cryptography (PKC).

SECURED ELIMINATION OF DUPLICATION AND REGENERATION OF ENCRYPTED DATA IN CLOUD SERVER

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ABSTRACT: In this paper Attribute Based Encryption (ABE) method is used in cloud to encrypt the data in cloud and can share the data with users. It supports secured elimination of duplication in the cloud to reduce the unwanted storage by using the method of ABE. It allows one-to-many encryption in which the server encrypts the plaintext; all clients can decrypt the cipher text using respective private keys. We present an attribute-based storage system with secure de- duplication in a hybrid cloud setting, where a private cloud is responsible for duplicate detection and a public cloud manages the storage.

Keywords: Anti-duplication, Data Integrity Protection (DIP), Functional Minimum-Storage Regenerating (FMSR) codes, Encryption, Decryption, Cipher text-Policy Attribute Based Encryption (CP-ABE).

ENHANCED GAME TECHNOLOGY [EnGaTek]

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ABSTRACT: In this paper, we propose a game that is created using Unity 5.5.1f1 (64-bit) a UNITY 3D game creating software which aims at reducing manpower, consumption of less time and requires less amount of resources along with scope to introduce you to a logical progression of design decisions and problem solving that will be of value well beyond the scope of the adventure game genre. It provides a framework and a methodology for creating and, more important, finishing your own game. In this model, we will approach game creation and design decisions from a 3D artist's view, taking the logic and scripting in small pieces, with use of standard assets introducing real-time game engine concepts. This game of UNITY supports 27 platforms like iOS, Android, Tizen, Windows, Universal Windows Platform, Mac, Linux, etc.

Keywords: Compression, Resolution, Screen Space Ambient occlusion (SSAO), Scene, Game object, FixedUpdate, OnGUI.

QUANTITATIVE MODELLING AND ANALYTICAL CALCULATION OF ELASTICITY IN CLOUD COMPUTING

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ABSTRACT: Cloud computing is a paradigm for enabling ubiquitous, convenient, and on-demand network accesses to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction. The unique and essential characteristics of cloud computing include on-demand self-service, broad and variety of network access, resource pooling and sharing, rapid elasticity, measured and metered service. In this paper, we present a new, quantitative, and formal definition of elasticity in cloud computing, i.e., the probability that the computing resources provided by a cloud platform match the current workload. Our definition is applicable to any cloud platform and can be easily measured and monitored. We formally define auto-scaling schemes and point out that our model and method can be easily extended to handle arbitrarily sophisticated scaling schemes. Second, we apply our model and method to predict many other important properties of an elastic cloud computing system, such as average task response time, throughput, quality of service, average number of VMs, average number of busy VMs, utilization, cost, cost-performance ratio, productivity, and scalability. To the best of our knowledge, this is the first paper that analytically and comprehensively studies elasticity, performance, and cost in cloud computing. Our model and method significantly contribute to the understanding of cloud elasticity and management of elastic cloud computing systems.

INCREMENTALLY MINING USAGE CORRELATION AMONG APPLIANCES IN SMART HOMES

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ABSTRACT: In this paper, we propose a model that utilizes smart home big data as a means of learning and discovering human activity patterns for health care applications. We propose the use of frequent pattern mining, cluster analysis and prediction to measure and analyze energy usage changes sparked by occupants' behavior. Since people's habits are mostly identified by everyday routines, discovering these routines allows us to recognize anomalous activities that may indicate people's difficulties in taking care for themselves, such as not preparing food or not using shower/bath. Our work addresses the need to analyze temporal energy consumption patterns at the appliance level, which is directly related to human activities. For the evaluation of the proposed mechanism, this research uses the UK Domestic Appliance Level Electricity dataset (UK-Dale) - time series data of power consumption collected from 2012 to 2015 with time resolution of six seconds for five houses with 109 appliances from Southern England. The data from smart meters are recursively mined in the quantum/data slice of 24 hours, and the results are maintained across successive mining exercises. The results of identifying human activity patterns from appliance usage are presented in details in this paper along with accuracy of short and long term predictions.

Keywords: Incremental Frequent Pattern Mining (IFPM), Model View and Controller (MVC), JSP, Servlet, Java Script, Bean Classes, Java Database Connectivity Technology

PROGRESSIVE VISUAL ANALYSIS USING MINING SEQUENTIAL PATTERN BY CLICKSTREAM

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ABSTRACT: *In this paper, we propose a* Modern web Click stream data consists of long, high-dimensional sequences of multivariate events, making it difficult to analyze. Following the overarching principle that the visual interface should provide information about the dataset at multiple levels of granularity and allow users to easily navigate across these levels, we identify four levels of granularity in Click stream analysis: patterns, segments, sequences and events. We present an analytic pipeline consisting of three stages: pattern mining, pattern pruning and coordinated exploration between patterns and sequences. Based on this approach, we discuss properties of maximal sequential patterns, propose methods to reduce the number of patterns and describe design considerations for visualizing the extracted sequential patterns and the corresponding raw sequences. We demonstrate the viability of our approach through an analysis scenario and discuss the strengths and limitations of the methods based on user feedback.

Keywords: Granularity, Pattern and Sequences, JSP, Servlet, Java Script, Bean Classes, Java Database Connectivity Technology

UNDERSTAND SHORT TEXTS BY HARVESTING AND ANALYZING SEMANTIC KNOWLEDGE

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ABSTRACT: Understanding short texts is crucial to many applications, but challenges abound. First, short texts do not always observe the syntax of a written language. As a result, traditional natural language processing tools, ranging from part-of-speech tagging to dependency parsing, cannot be easily applied. Second, short texts usually do not contain sufficient statistical signals to support many state-of-the-art approaches for text mining such as topic modelling. Third, short texts are more ambiguous and noisy, and are generated in an enormous volume, which further increases the difficulty to handle them. We argue that semantic knowledge is required in order to better understand short texts. In this work, we build a prototype system for short text understanding which exploits semantic knowledge provided by a well-known knowledgebase and automatically harvested from a web corpus. Our knowledge-intensive approaches disrupt traditional methods for tasks such as text segmentation, part-of-speech tagging, and concept labelling, in the sense that we focus on semantics in all these tasks. We conduct a comprehensive performance evaluation on real-life data. The results show that semantic knowledge is indispensable for short text understanding, and our knowledge-intensive approaches are both effective and efficient in discovering semantics of short texts.

Keywords: Incremental Frequent Pattern Mining (IFPM), Model View and Controller (MVC), JSP, Servlet, Java Script, Bean Classes, Java Database Connectivity Technology

DISCOVERY OF INTERNAL ATTACKS - DETECTION AND PROTECTION SYSTEM BY USING DATA MINING AND FORENSIC TECHNIQUE

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ABSTRACT: In this paper, we propose a model that utilizes a security system named Internal Intrusion Detection and Protection System (IIDPS), which detects malicious behaviours launched toward system at SC level. The IIDPS uses data mining and forensic profiling techniques to mine system call sequence (SC patterns) defined as the longest system call sequence (SC sequence) that has repeatedly appeared several times in a user's log file for the user.

Keywords: IIDPS - Internal Intrusion Detection and Protection system, ERM - Entity Relationship Model Java Database Connectivity Technology

USING DATA MINING TECHNIQUE TO DISCOVER THE TERRORISM SPREADING ON SOCIAL NETWORK

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ABSTRACT: The study demonstrates the convergence between social, behavioural and trends aspects for communication through Social Networking Online (SNO). The work consolidates the methodology, data analysis and results of the two surveys that worked with social networks Facebook and Twitter respectively. The optimal web data mining analysis of web page structure acts as a key factor in social network domain which provides the systematic way of novel implementation towards real-time data with different level of implications. This paper perform a detailed study of web structure retrieval schema towards variant effect of periodic web pages in the field of social network domain which can be carried out with expected optimal output strategies.the social network database are helps to store the user details and activities of user data which is helps to detect the activities of user through the keyword. This research is derived from the works "Comportamento das Hashtags Durante Grandes Eventos (2016)" and "Enriquecimento Semântico de Imagens Divulgadas em Redes Sociais On-line (2016)", both presented in VII WAIHCWS

Keywords: .Social networking like Face book, Twitter, data mining

DRIVE NOW,TEXT LATER:NONINTRUSIVE TEXTING WHILE DRIVING DETECTION USING SMARTPHONES

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ABSTRACT: *In this paper, we propose a model that utilizes Texting-while-driving (T&D) is one of the top dangerous behaviours for drivers. Many interesting systems and mobile phone applications have been designed to help to detect or combat T&D.However, for a T&D detection system to be practical, a key property is its capability to distinguish driver's mobile phone from passengers'. Existing solutions to this problem generally rely on user's manual input, or utilize specific localization devices to determine whether a mobile phone is at driver's location. In this paper,we propose a method which is able to detect T&D automatically without using any extra devices. The idea is very simple: when a user is composing messages, the Smartphone embedded sensors (i.e. gyroscopes, accelerometers, and GPS) collect the associated information such as touch strokes, holding orientation and vehicle speed. Extensive experiments have been conducted by different persons and in different driving scenarios.*

Keywords: Dailed Number Identification Service (DNIS), Automatic Number Identification (ANI), Simulation, Meta analysis, Driving Mode.

E-Government System and Services

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ABSTRACT: Many e-Government services till date have been created based on the existing services and own understandings, rather than based on citizen's need and interests. Very little data is available about local government officials and citizens want and need. The proposed study will analyze the use of IT and e-Governance practices develop & document the conceptual model of E-Governance, define components, component attributes, and the component relationships for each model. The model will be based on the citizen's viewpoint which is expected to be quite different from a model based on a government agency's viewpoint.

Keywords— e-Government System, use of IT, Privacy and Security, Database Connectivity, Servlet.

EFFICIENT PRIVACY-PRESERVING LOCATION-BASED QUERY OVER OUTSOURCED ENCRYPTED DATA

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ABSTRACT: Mobile devices equipped with positioning capabilities (e.g., GPS) can ask location-dependent queries to Location Based Services (LBS). To protect privacy, the user location must not be disclosed. Existing solutions utilize a trusted anonymizer between the users and the LBS. This approach has several drawbacks. First of All, Every user must trust the third party anonymizer, which is a single point of attack. Next, A large number of cooperating, trustworthy users is needed. Finally, Privacy is guaranteed only for a single snapshot of user locations; users are not protected against correlation attacks (e.g., history of user movement). The main aim of this paper is to achieve privacy preserving spatial range query. It can be used to detect whether a position is within a given circular area in a privacy-preserving way. Detailed security analysis confirms the security properties of EPLQ. Publicly accessible databases are an indispensable resource for retrieving up-to-date information. But they also pose a significant risk to the privacy of the user, since a curious database operator can follow the user's queries and infer what the user is after. Indeed, in cases where the users' intentions are to be kept secret, users are often cautious about accessing the database. It can be shown that when accessing a single database, to completely guarantee the privacy of the user, the whole database should be down-loaded; namely n bits should be communicated (where n is the number of bits in the database).

SECURE AND VERIFIABLE ACCESS CONTROL SCHEME FOR BIG DATA STORAGE IN CLOUDS

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ABSTRACT: In this paper, we propose a secure and verifiable scheme to protect the big data stored in a cloud. The scheme can verify a users access legitimacy and validate the information provided by other users for correct plaintext recovery. we propose a secure and verifiable access control scheme based on the AES algorithm for big data storage in clouds. It provides more security using re-encryption techniques.

Keywords: Big Data Storage, Access Control, AES Algorithm, Secret Sharing, Access Policy Update, Cloud Computing.

ACQUISITION OF RESERVED CLOUD DATA BY USING OPERATION RECORDTABLE

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ABSTRACT: As an important application in cloud computing, cloud storage offers user scalable, flexible and high quality data storage and computation services. A growing number of data owners choose to outsource data files to the cloud. Because cloud storage servers are not fully trustworthy, data owners need dependable means to check the possession for their files outsourced to remote cloud servers. To address this crucial problem, some remote data possession checking (RDPC) protocols have been presented. But many existing schemes have vulnerabilities in efficiency or data dynamics. In this paper, we provide a new efficient RDPC protocol based on homomorphic hash function. The new scheme is provably secure against forgery attack, replace attack and replay attack based on a typical security model. To support data dynamics, an operation record table (ORT) is introduced to track operations on file blocks. We further give a new optimized implementation for the ORT which makes the cost of accessing ORT nearly constant. Moreover, we make the comprehensive performance analysis which shows that our scheme has advantages in computation and communication costs. Prototype implementation and experiments exhibit that the scheme is feasible for real applications.

ID CARD MANAGEMENT SYSTEM USING DATA MINING

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ABSTRACT: In this paper, we propose a Modern web Click stream data consists of long, high-dimensional sequences of multivariate events, making it difficult to analyse. Following the overarching principle that the visual interface should provide information about the dataset at multiple levels of granularity and allow users to easily navigate across these levels, we identify four levels of granularity in Click stream analysis: patterns, segments, sequences and events. We present an analytic pipeline consisting of three stages: pattern mining, pattern pruning and coordinated exploration between patterns and sequences. Based on this approach, we discuss properties of maximal sequential patterns, propose methods to reduce the number of patterns and describe design considerations for visualizing the extracted sequential patterns and the corresponding raw sequences. We demonstrate the viability of our approach through an analysis scenario and discuss the strengths and limitations of the methods based on user feedback.

Keywords: Big Data Storage, Access Control, AES Algorithm, Secret Sharing, Access Policy Update, Cloud Computing.

QUANTIFYING THE EFFECTIVENESS OF MOBILE PHONE VIRUS RESPONSE MECHANISMS USING AUTONOMY OF COMPUTING

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ABSTRACT: The rapid growth of smart phone users have led viruses and malwares spread from computer networks into mobile networks. Viruses and malwares can cause privacy data leakage, extra charges and remote listening in a mobile network. They can send thousands of spam messages and jam wireless servers or track user positions through GPS. A deep understanding of the propagation mechanisms of mobile viruses is important for us because of the potential damages caused by them. In this paper, we propose a model for propagation and restriction of virus through Bluetooth and SMS(Short Message Service). Our work addresses the impact of human behaviour, i.e, Operational behaviour and mobile behaviour, on virus propagation. We examine a strategy for restraining mobile virus propagation, i.e, pre-immunization. This strategy draw upon the methodology of Autonomy of Computing(AOC). The experimental results show that our strategy can effectively protect large-scale and/or highly dynamic mobile networks.

Key terms- pre-immunization, operational behavior, two-layer network.

PROTECTING PRIVACY IN CONTINUOUS LOCATION-TRACKING APPLICATIONS IN HUMAN ALERT SECURITY SYSTEM

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Abstract-This paper proposes a novel system to track the nearest police station number using GPS and send an alert using a geomessage. Location based services are on a high and this approach focuses on safety of the user. It starts by tracking the user's own geolocation using GPS, then dynamically tracks the nearest police station number using a centralized database and processes an emergency message to the retrieved number. This paper has an advantage that tracking and alerting is done simultaneously.

Keywords: location, geomessage, geotracking, security.

REFORMED TIME SLOT DYNAMIC CONFLICT-FREE QUERY SCHEDULING FOR GRID BASED WIRELESS SENSOR NETWORKS

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Abstract: Sensor network is a special kind of wireless ad-hoc network with distributed sensing and processing capability, which is predominantly used in critical monitoring applications, where the clustering nodes may desire to transmit huge volumes of collected information to the base station through the cluster heads. This sort of data intensive networks produces excessive communication collision and introduces significant deficiencies caused by data loss, retransmission, and latency. Further, a defined, appropriate scheduling schema for data transmission is desirable for mitigating and reforming the scarcity of such networks. With this allege, we derive a method for allocating conflict free time slots for transmitting the data in clustered sensor networks securing it from collision. This is alleviated by partitioning the monitoring cluster regions into equal sized virtual grids and Latin Square characteristics support scheduling in individual grids. This decentralized protocol follows an AODV routing and thereby each sensor is aware of the neighboring nodes location and accepts the inherent topology changes. Moreover, the nodes that are participating in transmission remains in active state and the others become idle, thus conserving less energy. This distributed MAC scheduling method is particularly helpful in spatial usage of the communication channel for achieving scalability and efficiency and hence performance.

Keywords: MAC Scheduling, Performance enhancement, Virtual Grid, Channel Assignment

SECURITY ANALYSIS AND IMPLEMENTATION THREE LEVEL SECURITY SYSTEMS USING KERBEROS PROTOCOL

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Abstract: In this project paper, a 3 level security system as been proposed to enhance the security features of the existing systems which require a certain advanced security and authentication. The proposed system comprises of 3 levels of security. The user has to traverse through these three levels to be authenticated and gain the permission to access the secured system. The three levels of security are text based password, image based authentication and automated generated onetime password. This security system is time consuming since the user has to traverse across the three levels of security and also has to access the email to get the automated generated one time password. This security system protects the system and thwarts shoulder attack, tempest attack, brute-force attack at the client side.

DETECTING SPAMMERS AND CONTENT PROMOTERS IN VIDEO SHARING SYSTEM USING SVM

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Abstract—A number of online video sharing systems, out of which YouTube is the most popular, provide features that allow users to post a video as a response to a discussion topic. These features open opportunities for users to introduce polluted content, or simply pollution, into the system. For instance, spammers may post an unrelated video as response to a popular one, aiming at increasing the likelihood of the response being viewed by a larger number of users. Moreover, content promoters may try to gain visibility to a specific video by posting a large number of (potentially unrelated) responses to boost the rank of the responded video, making it appear in the top lists maintained by the system. Content pollution may jeopardize the trust of users on the system, thus compromising its success in promoting social interactions. In spite of that, the available literature is very limited in providing a deep understanding of this problem. In this paper, we address the issue of detecting video spammers and promoters. Towards that end, we first manually build a test collection of real YouTube users, classifying them as spammers, promoters, and legitimate users. Using our test collection, we provide a characterization of content, individual, and social attributes that help distinguish each user class. We then investigate the feasibility of using supervised classification algorithms to automatically detect spammers and promoters, and assess their effectiveness in our test collection.

Index Terms—Promoter, social media, social networks, spammer, video promotion, video response, video spam

A NOVEL BASED APPROACH FOR EFFICIENT PACKET FORWARDING USING MANET

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Abstract— Intrusion Detection Systems (IDS) in Mobile Ad hoc Networks (MANETs) are required to develop a strong security scheme it is therefore necessary to understand how malicious nodes can attack the MANETs. A mobile Adhoc network which is an autonomous system where mobile hosts are connected with each other using multihop wireless link. Nodes can change position quite frequently, which mean the mobility of the network. For quick data transmission, we need a routing protocol that adapts to topology changes. We use merkle tree algorithm to find out the geographical leases, location information and loosely synchronized clocks together verify the neighbor relation. The SECTOR mechanism is based primarily on distance-bounding techniques, one-way hash chains, and the Merkle hash tree. Eliminating misbehaviour node allows the source to select another trusted path to its destination. The simulation results show that the proposed mechanism is able to detect any number of attackers while keeping a reasonably low overhead in terms of network traffic.

Keywords— IDS, Adoc, Manet, Merkle tree. SECTOR.

SURVEY ON DATA MINING MODELING ALGORITHM FOR PASSION PREDICTION

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ABSTRACT— The passion prediction model (PPM) is constructed by the predictive model using the analysis methods and techniques of data mining. The several attributes are processed for the passion predicting system to predict the passion of one individual. In this research, the paper's focal point is to enhance the various methods of classification techniques to find out the passion using various masteries of an individual human.

Keywords— data mining, passion prediction, classification techniques

WIRELESS BLACK BOX

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ABSTRACT: Accident threatens human lives more and mainly road accident is common today. During accident many people lose their life because medical services and family member not getting accidental information on time. In this paper, an efficient vehicle wireless system is designed and implemented for vehicle accident detection. According to this project when a vehicle met with an accident immediately the vehicle number and persons contact number will be transferred to police control room or a rescue team. So the police can immediately trace the location from where the message came. Then after conforming the location necessary action will be taken.

Keywords: Efficient vehicle, wireless systems, accident detection.

PROJECT MANAGEMENT AND REPOSITORY

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ABSTRACT: Final year project has long been known as one of the courses that provide engineering degree students the opportunity to apply theoretical knowledge to any engineering problems that require analytical and/or design and/or experimental effort. This paper presents an online management of projects and their requirement aspects of students' final year project work using simple software.

Keywords: project, engineering problem, online management

COMMUNICATION OVER SECURE TRANSMISSION AGAINST EAVESDROPPING

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ABSTRACT-This paper studies the problem of eavesdropping attack is a serious security threat to a wireless communication over a network since the eavesdropping attack is a prerequisite for other attacks. The traditional security solution based on cryptography and authentication is not sufficient for wireless communication. Due to the broadcast nature wireless transmissions can be overheard by any receiver within the transmission range. Sufficient conditions, in terms of communication rates and network parameters, are found for provable secure communication ,along with an intuitive and efficient coding scheme. It is performed efficiently by using homomorphic hash function and sign technique.It can take place over wired networks as over wireless networks. In wireless network, the Eavesdropping can be detect by the IP address when the hacker to access the data and files.

KEYWORDS: *secure* communication, provable security, homomorphism hash function

DUAL BAND SLOTTED PATCH ANTENNA FOR LTE APPLICATIONS

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ABSTRACT- A dual-band slotted microstrip patch antenna is designed for Long Term Evolution –Time Division Duplexing bands (1.447-1.467) GHz and (2.496-2.690) GHz. Rectangular patch antenna with an inset feed is designed to resonate at 1.45GHz. A rectangular slot is inserted on the conducting patch to achieve multiple resonances at 1.45 GHz and 2.59 GHz. 20MHz -10dB Bandwidth (1.447- 1.467) GHz and 194MHz -10dB Bandwidth (2.496-2.690) GHz is achieved by defected ground structure. The gain of the proposed antenna at 1.45 GHz and 2.54 GHz are 3.62 dB_i and 3.55 dB_i respectively. The VSWR of the proposed antenna at 1.45 GHz and 2.54 GHz are 1.75 and 1.11 respectively. The proposed model is simulated using Microwave CST EM simulation tool. The equivalent circuit of the proposed antenna is presented and simulated using ADS.

Keywords- Microstrip patch antenna, Inset feed, rectangular slot, Defected Ground Structure, bandwidth, VSWR, gain, CST

AN HUMAN GESTURE RECOGNITION FOR IOT BASED APPLICATION

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ABSTRACT- The gesture recognition is used to create a system which can identify specific hand gestures and use them to convey information. The real time hand images were captured by web camera and that capture images were converted into equivalent gray images. The binary images were estimated from the gray images and also segmented into two regions. In this proposed work, the crop function is used for better recognition of the hand from the desired region and increase the accuracy of the hand recognition.

Keywords: Gray Images Accuracy.

PERFORMANCE EVALUATION OF AREA-EFFICIENT 64-BIT MULTIPLIER USING NOVEL DOUBLE MODULUS NTT ALGORITHM

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ABSTRACT: To design million bit integer multiplier to enlarge the permitted word length of NTT from 32 bits to 64 bits. This brief proposes a double modulus Number Theoretical Transform (NTT) method for million-bit integer multiplication in fully homomorphic encryption. By this proposed method, each NTT point is processed simultaneously under two moduli, and the final result is generated through the Chinese Remainder Theorem. The employment of double modulus enlarges the permitted NTT sample size from 32 to 64 bits and thus improves the transform efficiency. Based on the proposed double modulus method, VLSI design of million-bit integer multiplier with the Schönhage–Strassen algorithm can be attained. The proposed architecture designs the million bit integer multiplier, where the large multiplication size at the same number of digit samples.

FUZZY COMPLEMENT INERTIA WEIGHT APPROACH IN PSO ALGORITHM FOR ADAPTIVE EQUALIZATION

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ABSTRACT— Adaptive Equalization is important to reduce the undesirable effect of inter symbol interference (ISI) and channel noise in a communication channel. Basically an equalizer is an inverse filter which is placed at the front end of the receiver. Its transfer function is inverse to the transfer function of the associated channel. The need of faster convergence rate to track rapid changes of the time varying channels require a better algorithm for channel Equalization. Particle swarm optimization (PSO) is a simple and fast algorithm which provides a performance superior to any similar technique in adaptive equalization. In this work PSO based modified algorithms are studied for the design of adaptive channel equalizer and a new method is proposed with superior performance. To validate the proposed algorithm, the performance of the various PSO based adaptive channel equalizers is analysed. Further the simulation work shows the enhanced performance characteristics of the proposed algorithms.

Keywords— Adaptive Channel Equalization, Modified Particle Swarm Optimization, Variable Constriction Factor and Inertia, Mean Square Error

VIDEO STABILIZATION BASED ON LBP FEATURE DESCRIPTOR

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ABSTRACT— Video captured from the handheld camera while moving or capturing moving object, will have distortion and shaking effect. To recover video from this problem, video stabilization is carried out. In our paper, the stabilization is carried out by matching feature points detected from adjacent frames. During the detection of feature points and description, illumination changes and translation occur due to movement of camera. Hence, there is a problem in matching the correct feature point. To overcome this issue, we have used Local binary pattern to describe the detected feature points. The performance of the proposed method is analyzed and it gives better performance compared to Scale Invariant Feature Transform.

Keywords—Video stabilization; feature detection; feature descriptor; feature matching

PERFORMANCE ANALYSIS OF CONSTRAINT BASED ROUTING FOR AERONAUTICAL AD HOC NETWORKS

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ABSTRACT - Aeronautical ad hoc network (AANET) is emerging multi hop ad hoc networking between the aircrafts. Routing is one of the main challenge that Aeronautical Ad-hoc Network is facing, mostly because of the high mobility of the nodes, frequent changes in the network topology, the geographic size of the network and variation in number of nodes. We propose a routing protocol which integrates path availability period, residual path capacity and path latency in route selection to improve the network performance. The protocol maintains long link durations, achieves path load balancing and reduces end-to-end delay. The proposed protocol selects reliable route with reduced overhead and delay and increased packet delivery ratio.

Keywords: AANET, path availability period, residual path capacity, packet delivery ratio, route selection

A CRT BASED APPROACH FOR DATA HIDING IN IMAGES USING COMBINED CRYPTOGRAPHY AND STEGANOGRAPHY TECHNIQUES

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ABSTRACT: Image steganography systems use either the spatial domain or the frequency domain of images to hide the secret information. The proposed technique uses spatial domain technique to hide secret information in the frequency domain. For hiding the secret text the spatial domain image is converted into frequency domain using Discrete Wavelet Transform (DWT). The cover image is transformed using integer wavelet transform to obtain four sub bands: LL, LH, HL, and HH. Then the text information to be secret is hidden in the wavelet coefficients where the coefficients are replaced by the pseudo random numbers. The inverse wavelet transform is taken to the segno image. In the existing method the secret message is embedded in the image pixel hence the crypt analysis and security attacks of existing image steganography technique is easier. To increase the level of security the existing method is changed into random pixel embedding by CRT with permuted ordered binary. A novel image hiding method based on Chinese Remainder Theorem (CRT) is proposed. This method not only is but also has the least distortion in cover image.

Keywords: Chinese Remainder Theorem, security, steganography, cryptography, image hiding..

IMPROVING SPECTRAL EFFICIENCY IN COGNITIVE RADIO NETWORK USING MDP FRAMEWORK

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ABSTRACT - Cognitive radio is a promising technology for the next-generation wireless networks. It gets more attention in recent times due to most promising solution for the efficient utilization of spectrum. The goal of cognitive radio is to improve the spectrum efficiency of the communication networks while protecting the Primary User transmissions from harmful interference. Therefore, spectrum sensing is very important in CR. In order to improve the Spectrum Efficiency, Markov Decision Process framework is used to determine the optimal spectrum sensing interval where Secondary user (SU) senses the Primary User (PU) channel once in consecutive slots. Markov Decision Process (MDP) maintains the tradeoff between throughputs of the secondary user (SU) and reduces the interference caused to the primary user (PU).

Keywords: Spectrum sensing interval, MDP, Interference, Throughput.

A MODIFIED BOOTH RECODING FOR COMPLEX ARITHMETIC OPERATIONS IN SIGNAL PROCESSING APPLICATIONS

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ABSTRACT: Complex arithmetic operations are widely used in Digital Signal Processing (DSP) applications. Building low-power, high speed systems have been in demand, in recent years, because of the fast growing technologies in mobile communication and computation. Arithmetic and Logic Unit is a core component of almost all computing machines and processors. In this work, we focus on optimizing the design of the fused Add-Multiply (FAM) operator for increasing performance. We investigate techniques to implement the direct recoding of the sum of two numbers in its Modified Booth (MB) form. We introduce a structured and efficient recoding technique and explore three different schemes by incorporating them in FAM designs. Comparing them with the FAM designs which use existing recoding schemes, the proposed technique yields considerable reductions in terms of critical delay, hardware complexity and power consumption of the FAM unit.

Keywords: ALU, RISC Processor, Pipeline Breakage, Vedic Multiplier, Convolution.

AI HOME AUTOMATION SYSTEM USING RASPBERRY PI AND FIREBASE

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ABSTRACT : This paper proposes the design of Internet of Things(IoT) for Home Automation using Raspberry Pi 3. In a fast-paced contemporary environment that we are living in today, our lifestyle demands for advanced devices to improve it and a network of these devices to enable exchange of data between them. This is where IoT plays a major role in improving lifestyles. IoT devices range from robot-like units to tiny chips that hook into industrial or office machines allowing the user to fully control the device, or merely collect specific data from it. There have been several home automation models proposed previously, but they do not fulfil the requirements of an ordinary millennial who looks for a centralized system. Thus, we make use of Raspberry Pi 3 to centralize all our device networks. For a generation whose world is at their fingertips, we are aiming for a design where people can control their environment at their fingertips by Efficient Energy utilization, analysing activity of the environment, controlling regularly used devices by voice AI, control tasks such as watering garden and regulation of room temperature, security system by alert mechanism with minimum human effort. This design of home automation ultimately aims at providing a safe and high quality of life that everyone can enjoy.

Keywords-Home automation, Internet of Things, Raspberry Pi , voice AI, Device Control.

AUTOMATIC MOBILE RAILWAY PLATFORM USING ELECTROMAGNETICS

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ABSTRACT: The objective of this project is to automate the railway platform without using staircase. In the Indian Railway framework, passengers use trams and flyovers to cross the platforms. Now a days train accidents are occurring frequently in India due to train rushing on the passengers walking on the tracks. In order to avoid the accidents due to above reason we have designed this project. This project utilizes a microcontroller based technique using electromagnetic signal and Dc motor which is employed to operate the platform bridge.

Keywords: Electromagnet, Magnetic Coil,PIC Controller,DC Motor,Automated Platform Bridge

IOT BASED IRRIGATION SYSTEM

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ABSTRACT: Agriculture plays a vital role in developing countries . In India, most of population depend on agricultural farming. Hence the project aims at making agriculture smart using automation and IOT technology . The highlighting feature of this project includes smart irrigation with smart control and intelligent decision making based on accurate real time field data . Secondly monitoring the operation via android application in any smartphone. In this project we are using three sensor such as soil moisture sensor, temperature and humidity sensor ,level sensor. The moisture sensors measure the moisture level (water content) of the different plants. If the moisture level is found to be below the desired level the moisture sensor sends the signal to the Microcontroller board which triggers the Water Pump to turn ON and supply the water to the plant. When the desiredmoisture level is reached the system halts on its own and the Water Pump isturned OFF. The another main aspect of this project is water level sensor. It senses the water level in the tank and it send the information to the microcontroller. If the water level is low water pump1 will operate and pump water to the tank.

Keywords: Agriculture, technology, temperature, humidity, moisture sensor.

INTELLIGENT TRANSPORT SYSTEM USING BRAIN COMPUTER INTERFACE (DRIVER DROWSINESS DETECTION USING BRAIN WAVE SENSOR)

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ABSTRACT: We propose a real-time wireless EEG-based brain-computer interface (BCI) system for drowsiness detection. The proposed BCI system consists of a wireless physiological signal-acquisition module and an embedded signal-processing module. Here, the wireless physiological signal-acquisition module is used to collect EEG signals and transmit them to the embedded signal-processing module wirelessly. The embedded signal processing supports various peripheral interfaces, is used to real-time detect drowsiness and trigger a warning tone to prevent traffic accidents when drowsy state occurs.

Keywords: Brain Computer Interface System(BCI)¹, Brain wave sensor², Arduino³, Universal Asynchronous Receiver Transmitter (UART)⁴, General purpose input output (GPIO)⁵, LCD Display ⁷, DC Motor ⁸, Zigbee Module ⁹

SMART ASSIST FOR BLIND PEOPLE USING RASPBERRY PI

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ABSTRACT: This paper presents a smart assist to support blind people using Raspberry Pi. It uses an OCR (Optical Character Recognition) system which is a branch of computer vision and a sub class of Artificial Intelligence. Optical Character Recognition is the translation of optically scanned bitmaps of printed into audio output by using Raspberry Pi. OCR extracts moving object region by a mixture of Gaussians based background subtraction method. A text localization and recognition are conducted to acquire text information. The recognized text codes are output to blind users as speech signal. The recognition process and the character codes in the text file are processed using Raspberry Pi device which recognize character using Tesseract algorithm and Python programming.

Keywords: Optical Character Recognition, Tesseract algorithm, Espeak algorithm and Raspberry Pi.

AN ELECTROMAGNETIC BASED INTELLIGENT VEHICLE FOR CONTROLLING SPEED

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ABSTRACT: This paper presents an electromagnetic based intelligent technique to reduce the speed of the vehicle at important zones. Also an approach to detect that the driver correctly wear the seatbelt and did consume any alcohol or not. This reduces the accidents by carelessly. This paper proposes a new defect inspection method which uses Electromagnetic Tomography (EMT) technique. The method uses the tomographic approach to measure the alternating magnetic signal modulated by the magnetic switch and then slow down the vehicle on the road. The sensor and signal processing hardware of the EMT vehicle defect inspection system can be installed on the roads before a distance of accident zone.

Keywords: Electromagnetic Tomography, Alcohol Sensor, Driver L293D and Arduino.

TELE PRESENCE ROBOT FOR ANATOMICAL SURVEILLANCE WITH MOBILE MEDICAL ASSISTANCE

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ABSTRACT: This paper presents a lightweight telepresence robot with mobile communication. This is designed to monitor the patient. Telepresence envisages the robot's mobility as an added value to enable the visitor to freely move within the remote environment. The remote control web server has been implemented. Telepresence system of today uses two way audio and video transmission to transmit this non-verbal information such as hand gesture. Hand gesture recognition pertains to recognize meaningful motion of hands. The application of handgesture recognition are manifold through medical rehabilitation to virtual reality.

Keywords: telepresence robots, medical robotics, control stability.

FUSION OF CT AND MRI IMAGE BASED ON HAAR WAVELET TRANSFORMATION

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ABSTRACT: The objective of Image fusion is to combine information from multiple images of the same scene into a single image retaining the important and required features from each of the original image. Nowadays, with the rapid development in high-technology and modern instrumentations, medical imaging has become a vital component of a large number of applications, including diagnosis, research, and treatment. Medical image fusion is the idea to improve the image content by fusing images taken from different imaging tools like Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET) and single photon emission computed tomography (SPECT). This paper presents a method of image fusion based on Haar wavelet transform. The fusion performance is evaluated on the basis of the root mean square error (RMSE) and peak signal to noise ratio (PSNR).

Keywords: Medical Image Fusion, Computed Tomography(CT), Magnetic Resonance Image(MRI), Root mean square error (RMSE), Peak signal to noise ratio (PSNR), Haar wavelet Transform(HWT).

INTEGRATION OF OPTIMIZED GUI WITH BIOMETRIC ACCESS FOR BANKING DOMAIN USING SOC DEVELOPMENT BOARD

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ABSTRACT: The ability to verify the identity of the specific individual is of critical importance in reducing acts of fraud and increasing security. Traditional automated verification methods of ATMs such as ATM cards cannot provide positive identification, they may be lost or stolen, while PINs, passwords and account numbers may be steal or intercepted by unauthorized users through electronic means and other ways. A concerted effort to stop this crime requires a more reliable method of identification that is persons identity. This paper proposes a newsystem for ATM using aadhar number linked with fingerprint of the person for better access.

Keywords: Biometric sensor, Raspberry pi 3, Arduino nano, Graphical User Interface (GUI), Universal Asynchronous Receiver Transmitter (UART)

TWO STAGE RERANKING FOR REMOTE SENSING IMAGE RETRIEVAL AND IMAGE ENHANCEMENT

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ABSTRACT: Image reranking is a popular post-processing method for remote sensing image retrieval (RSIR), which aims at enhancing the initial retrieval performance. we propose an image reranking method named two-stage reranking (TSR) to improve the performance of the RSIR. An editing scheme is developed in the first stage to eliminate as many dissimilar images (compared to the query) as possible from those RS images with the help of the users. The rest of the RS images are reranked by our proposed reranking scheme, i.e., multi-similarity fusion reranking (MSFR). Not only the users' opinions but also the images' relationships are considered in our TSR method. Here degradation model is used to develop efficient methods for minimizing the visual impact of degradation. Here we use image enhancement model to enhance the image of certain information in accordance with specific needs and in order to be better than the original image ora more useful image.

Keywords: Remote sensing image retrieval (RSIR), Reranking, Multi-similarity fusion reranking (MSFR), Enhancement.

MONITORING SELF ORGANIZING INDUSTRIAL SYSTEM USING LI-FI TECHNOLOGY

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ABSTRACT: This paper focuses on the worker monitoring in the industry using the Li-Fi technology. Li-Fi stands for Light Fidelity. Li-Fi technology, proposed by German physicist Harald Haas , provides transmission of data through an LED light bulb that varies in intensity faster than the human eye can follow. Li-Fi is a bidirectional, high speed and fully networked wireless optical communication and is a form of visible light communication. The proposed system helps in the worker monitoring on the industry and can be done by using the concept of Li-Fi instead of Wi-Fi technology to avoid the frequency interference sensors such as gas, fire and MEMS used in the model to perform. The can control the device using the PC device. VLC have been used in long range communication. Arduino uno RISC mechanism is used. This is basically to avoid the harmful gas or high temperature attacking the workers.

Keywords: Li-Fi, Gas sensor, Fire sensor, MEMS sensor, Arduino uno, GSM

DUAL SENSE ADAPTIVE LIVE IMAGE PROCESSING FOR DEFENSE APPLICATIONS

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ABSTRACT: In this paper, an effective tool for defense using image processing is implemented that helps us to achieve targets at certain distances with precised vision in many weather conditions. The main aim of this project is to make a tool that can reduce the work of armed forces in guarding the border areas. It can be used in both soil and water, when kept in water it will swim by tilt mechanism. It is a live image processing. Using raspberry pi, it detects the presence of human in the surrounding area. It matches with the face and then with the colour. The gun shoots if the face and colour does not match with the reference image.

Keywords: setting target¹, processing image²,shooting³,swim⁴

EMG BASED PROSTHETIC ARM TO SELF ASSIST

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Abstract: In the field of Robotics, prosthesis hand amputees are highly benefited for various active hand movement s based on wrist-hand mobility. The development of an advanced human machine interface has been an interesting research topic in the field of rehabilitation, in which biomedical signals such as electromyography (EMG) signals, plays a significant role. Sensing of EMG signals concerns with the signal capturing, conditioning, feature extraction and classification of different active hand movements for controlled humanassisting robots or prosthetic applications. In this system we collect EMG signals to train a prosthesis arm to help people to recover fast instead of going to any physiotherapist.

Keywords: Robotics, prosthesis, rehabilitation ,prosthetic

OPTICAL UNDERWATER COMMUNICATION MODEM USING LIFI

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ABSTRACT: Our project reveals the use of Li-fi for communication purpose under the water via optical modem. The term Li-fi refers to the VLC technology that uses light as a medium for delivering high speed communication and complies with the IEEE standard 802.15.7 which is bidirectional. This project of optical communication aims at demonstrating the potential at physical level with target performance of 10Mbps transmission rate at 15 meters range in shallow/high turbidity waters. It consists of three modules developed and experimentally demonstrated: one for direct integration with the LOON infrastructures, one battery powered to be potentially installed on buoys, remotely operated vehicles (ROV's) and final one to be installed as autonomous under water vehicles (AUV's). The module is based on white LED units and common photo diodes.

Keywords: Visible Light Communication (Vlc), Pic16f877a, Lifi Transceiver Unit, Pir Sensor, Proximity Sensor, Uart Lcd , Embedded C, Pic Ccs Compiler

IMPLEMENTATION OF DISTRIBUTED CONTROL SYSTEM LINK FROM ELECTROSTATIC PRECIPITATOR MONITORING SYSTEM

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ABSTRACT: This project is aimed at developing an industrial oriented link between ESP and DCS for monitoring the ESP system. At present, many industrial establishments face the problem of protocol compatibility with the external monitoring devices. This problem has been solved by this project. The electrostatic precipitator controllers are using dedicated protocol for communicating with centralized IOS which has to be linked with DCS for monitoring and controlling of ESP. It developed RS-485 interface between IOS and DCS. In order to test the functionality, it used software simulator to act as Modbus master. The functionality used by the simulator that results as expected.

Keyword: Electrostatic precipitator, Dedicated protocol, Modbus protocol, RS-485.

AUTOMATIC CAR PARKING SYSTEM TO MINIMIZE THE HUMAN SUPERVISION

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ABSTRACT: Automatic car parking system is based on controlling the vehicle automatically whenever needed, to avoid problem of traffic congestion in commercial areas that unnecessarily consume time. Analyzing a parking space in most metropolitan areas, especially during the rush hours is difficult for the drivers. The difficulty arises from not knowing where the available spaces is limited for the car. It senses the available space, analyze and navigate to suitable place to park. It is held without the supervision of man power. These make the system modernized and even a time-saving one.

Keywords: mobile robot, path planning, Arduino , infrared detectors, LM3S811

HEALTH MONITORING BASED ON IOT RASPBERRY PI

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ABSTRACT: In this paper we propose a smart home model based on VLC. This model is based on the fact that nearly all the facilities at home can easily be controlled using light and visible light has negligible harm to human as well as nature. Presently, three main smart school technologies, Insteon, ZigBee, and Z- Wave, are vying for market share in the wireless industry automation space. All these technologies work in radio frequency spectrum that is expeditiously congested with increasing number of users or devices to support and also highly susceptible to hacking. As an alternative technology to congesting RF bands for a short range communication, Visible Light Communication (VLC) has been introduced. VLC technology is one of the advanced optical wireless communication technologies, in which light in the visible region (375 780 nm in wavelength) is used as a medium for data transmission. VLC is more secure against hacking, as light cannot penetrate through walls and also offers high data rates, as compared with conventional RF based wireless technologies, such as Wi-Fi and Bluetooth.

Keywords: frequency, congesting, wireless communication

EFFICIENT ADVANCE ENCRYPTION STANDARD IMPLEMENTATION ON FIELD PROGRAMMABLE GATE ARRAY

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ABSTRACT: The purpose of information security is to protect an organization's valuable resources, such as information, computer hardware and software. In the early days of the internet, possibly because network access was very limited and highly controlled, network security was not yet viewed as a primary concern of computer users and system administrators. The study of lightweight symmetric ciphers has gained interest due to the increasing demand for security services in constrained computing environments, such as in the internet of things.

Keywords: organization, internet, authentication

IOT BASED HEALTH CARE MONITORING SYSTEM USING RASPBERRY PI

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ABSTRACT: This paper is concerned about the health monitoring of patient using raspberry pi. IOT can play a major role in monitoring of health care of patient in hospitals. The patient pulse rate, blood pressure, body temperature, CO2 sensor of the patient are monitored continuously the help of appropriate sensors and raspberry pi, the data is retrieved by the doctor for diagnosing and analyzing the patient health condition. Thanks to the concept of IOT, which provides necessary help in emergency situation. So, getting together the concept of IOT and nano materials will restructure the field of health care, promising economic, technological and social benefits.

Keywords: raspberry, diagnosing, nano material

CLASSIFICATION OF MAGNETIC RESONANCE IMAGES USING CONVOLUTIONAL NEURAL NETWORKS TECHNIQUE FOR BRAIN TUMOUR DETECTION

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ABSTRACT: Brain tumor is one of the severe disease in the field of medicine. Magnetic resonance imaging is used to view the internal structure of body in detail. We purpose an efficient brain tumor detection method, which can detect tumor and locate it in the brain MRI images. Our work presents a convolutional neural network method for tumor segmentation and extreme learning machine that is employed to cluster brain tumor. The patients stage is determined by this process, whether it can be cured with medicine or not.

Keywords: Brain tumor, detection, segmentation.

UTILIZATION OF WSN MODULES FOR RSSI LOCALIZATION USING SMART TOLLGATE AUTOMATION

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Abstract: In this project we proposed an improved form of tollgate billing system. An efficient utilization of communication link between wireless channel to facilitate vehicle monitoring, In our project, once the end user (motorist) comes to chargeable zone; the Zigbee transceiver receives the signal that the vehicle has entered the chargeable zone particular LANE, then automatically the unique id of the motorist (Vehicle ID) has been read via on-board unit, which has been attached to every vehicle and collects the daily road pricing charge. Vehicle authentication and automated toll collection on the highways is proposed. The system is implemented to automatically register vehicles getting on or off a motorway or highway, cutting the amount of time for paying toll in large queues. Initially the motorist enters to toll booth with the wireless transceivers attached with vehicle. The wireless transceivers read the signal from the on-board wireless device and check the database for the motorist record exists if yes it will display the motorist and vehicle information to the screen.

AIR TRAFFIC CONTROL USING SINGLE BOARD COMPUTER

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ABSTRACT: In last few decades there has been many problems related the safe landing of Aeroplane and their accidents due to various reasons like bursting of tire, poor visibility, lack of synchronization between the plane and the base station. This results into the accident of the Aeroplane and loss of life of passengers. This could be avoided and safety can be assured to the passengers by synchronization between the base station and Aeroplane. In our project we have developed Aeroplane Landing Control System to solve these problems and ensure safety to the lives of passengers. Using this system various collision and problem related to air traffic control has been minimized. Also in future we can develop a system which will help in automatic landing of planes including safety of passengers and air traffic control.

Keywords: Landing Control System, Zigbee Module, Accident, Aerospace Control, Aeroplane Parameters, Automatic control, Computer simulation.

RESONANT CONTROLLER BASED PV STATCOM SYSTEM USING MULTILEVEL INVERTER

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Abstract :STATCOM is a popular device to improve voltage of weak buses in two bus systems. This work will be dealing with modeling and simulation of closed loop controlled voltage source inverter based STATCOM in two bus system. Closed loop PI & PR controlled STATCOM systems are going to be investigated and their results will be compared. The comparison will be done in term of time domain response parameters like steady state error & settling time. The STATCOM with PR will be observed to be faster than PI controlled system.

Keywords—D-Statcom, Multilevel Inverter, PR controller, PI Controller

A MODIFIED BOOST CONVERTER FOR HIGH POWER APPLICATIONS

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ABSTRACT: An asymmetrical three state switching boost (TSSB) converter combining the benefits of magnetic coupling and voltage multiplier techniques is presented in this paper. The derivation procedure for the proposed topology is depicted. The new converter can achieve very high voltage gain and very low voltage stress on the power devices without high turn ratio and extreme duty cycles. Moreover, the usage of voltage multiplier technique not only raises the voltage gain but also offers lossless passive clamp performance, so the voltage spikes across the main switches are alleviated and the leakage-inductor energy of the coupled-inductors can be recycled ;Also, the interleaved structure is employed in the input side, which not only reduces the current stress through each power switch ,but also constraints the input current ripple .In addition, the reverse-recovery problem of the diodes is alleviated, and the efficiency can be further improved. The operating principles and the steady-state analysis of the presented converter are discussed in detail.

Keywords: Three state switching, magnetic coupling, voltage multiplier techniques.

DESIGN OF ROBUST MODEL PREDICTIVE CONTROL BASED MPPT CONTROLLER FOR SOLAR BOOST CONVERTER

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ABSTRACT: This paper presents a Model Predictive control (MPC) based Maximum Power Point Tracking (MPPT) boost converter for solar PV application. The solar power varies with different irradiation level and the maximum power point tracking techniques was used to track the maximum power from the panel. The maximum power point algorithm samples the output of the cell and by applying proper load resistance the maximum power for varying environmental conditions was obtained. In this paper, initially incremental conductance (IC), perturb and observe (P&O) algorithm was used to track the maximum power from the boost converter without controller and the simulation was carried out in MATLAB / Simulink. In order to improve the efficiency, a robust controller namely model predictive control (MPC) was used to speed up the closed loop performance and to minimize the error. The proffered controller predicts the error before the switching signal was applied to the boost converter and maximizes the output of the solar PV system. Finally, the comparison was made with and without controller and the results reveal that the solar panel performance was improved with robust controller.

Keywords: Model Predictive Control (MPC), Maximum Power Point Tracking (MPPT), Perturb and Observe (P&O), Incremental Conductance (IC).

IMPROVEMENT ON POWER SHARING OF WIND-DIESEL MICROGRID

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ABSTRACT- This paper proposes a power sharing between the wind and diesel generator based micro grid. The aggravated increase in energy demand has posed a serious problem for the power system's stability and reliability, and hence has become of major concern. Wind diesel hybrid systems (WDHS) obtain maximum contribution by the wind resource while providing continuous high quality electric power. An active power control strategy has been developed such that when the wind alone is not able to meet the energy demand, without compromising the frequency, a transition occurs to wind diesel mode so that the energy demand is met. The idea proposed in this paper is to maximize the wind energy and minimize the amount of fuel consumed by the diesel generator. The simulation results confirm the smooth operation of the proposed concept for disturbances from main grid as well as due to the intermittent wind and diesel power plants.

Keywords- Wind-diesel system, controlled bus, grid connected and islanded operation.

A LOW POWER ADDRESS TRANSITION DECODER CIRCUIT USING CONDITIONAL DATA MAPPING FLIP FLOP APPROACH

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ABSTRACT: In recent years, there are discussions about the address transition decoder (ATD) circuit used with delay blocks in CMOS technology. This is mainly used in Read only Memory (ROM). And the power consumption and dissipation are always challenges in VLSI designs. This paper presents the ATD circuit using Conditional Data Mapping Flip Flop (CDMFF) for generating the pulses in decoder. This flip flop reduces the redundant events and reduces the power consumption and dissipation by avoiding unnecessary switching or triggering the decoder while the outputs are expected to remain constant. So transient analysis and slew rate are also calculated for validating its application in low power devices. The power dissipation for 32 bits is 137 nW with a slew rate of 24.5×10^{-6} V/ms and 50% duty cycle.

Keywords: CMOS, ROM, Flip flop, CDMFF, Slew Rate

COMPARATIVE TRANSIENT ANALYSIS OF CONDITIONAL FLIP-FLOPS FOR LOW POWER VLSI APPLICATIONS

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ABSTRACT: The transistors are used as the main component used to reduce the power dissipation and consumption in Information and Communication Technology (ICT) devices at nano-scale CMOS technology. The power dissipation increases accordingly when the switching function increases in the sequential devices used in various blocks of a circuit. Switching activities depend on the clock network and clock transitions of the flip-flops used. This paper presents the comparative transient analysis of data selective flip-flops: Conditional Data Mapping Flip Flop (CDMFF), Cross Charge Control Flip Flop (XCFF) and Dual Dynamic Flip Flop (DDFF). This analysis will give the voltage changes with respect to time. Taking into account on the number of transistors used, the slew rate is calculated and compared for validating their applications in low power VLSI designs. In ICT devices, flip-flops play significant role in reducing the power consumption by reducing the unwanted switching activities. This investigation intends to solve the issues of power consumption in ICT devices.

Keywords: CT, CMOS, CDMFF, XCFF, DDFF, VLSI

COMPARISON OF LOW POWER 2-STAGE DELAY BUFFERS WITH VARIOUS BASE CELLS

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ABSTRACT: In the past few decades, recent studies have demonstrated that the power dissipation in the Information and Communication Technology (ICT) devices is a big challenge while designing. The memory storage elements, the logic elements and the clocking distribution are the main sources of power dissipation and the consumption. This paper presents a dual dynamic node pulsed hybrid buffer (DDB). The development, implementation and the testing of this low power buffer are described in this paper. Buffers are accessed in the form of ring counter. Buffer controls the data transfer between the chips in the computer internal circuits. The slew rate is controlled by the C-Element. There is an improvement of 44.08% and 14.20% for the 2-stage buffer with fixed biased and SRAM cells in the power dissipation respectively.

Keywords: ICT, DDB, buffer, C-Element, Slew Rate

SOLAR WATER PUMP WITH SOLAR TRACKING SYSTEM AND SHADOW TECHNIQUE

Mr. Ngangbam Phalguni Singh^{1*}, Member of IEEE, Mr. A. Ranjith¹, Paulina D Bangi², Anneth B Michael², Denis K Nsigalila² - Assistant Lecturer 2 - Final year Bachelor students

ABSTRACT: Supply of commercial energy like electricity is a big challenge in most of the African countries. There are alternative energy sources like solar energy. But many people either cannot pay the electricity bill or cannot afford the cost of the solar energy devices. In Tanzania also due to poor economic status and lack of awareness of solar energy, the solar energy applications still cannot find a proper market. This paper presents the low power solar water pump with solar tracking system. This study focuses on the utilities of the water in the basic household activities. Awareness and education about the applications of the solar energy can be imparted to the common people by providing the water and helping them with their basic activities in house. The solar tracking system is realized by using Light Dependent Resistor (LDR) and shading device.

Keywords: Electricity, Tanzania, Solar energy, LDR, Shading device

HARMONIC REDUCTION USING STATCOM WITH FUZZY TECHNIQUE

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ABSTRACT: In distribution systems, sudden change in load draws non-sinusoidal currents and causes the load harmonics, excessive neutral currents create disturbance and changes in Power factor. Static Synchronous Compensator (STATCOM) is used to provide reactive power to the transmission line. In this paper proposes with Fuzzy Logic Controller (FLC) to tune PI controller gain values under different operating condition. Tuned values operate with PI controller and provides gate signal to voltage source converter which decides amount of reactive power to be injected into bus. Power factor value also improved. This method not affected by the initial gain settings, changes of system conditions and produces better and desired response. By providing reactive power and power factor correction system performance increased and also it reduces the harmonics in system.

PV BASED BLDC MOTOR DRIVE CONTROL USING CUK CONVERTER

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ABSTRACT: This paper focuses on wide input range and voltage applications with a boost ratio Cuk converter utilizing the Brushless DC Motor (BLDC). Due to higher efficiency and easy control strategies of Brushless DC Motor (BLDC), the controller leads to improve the behaviour of the motor. By the cooperation of Cuk converter with a hybrid transformer, the energy transfers continuously which lead to achieve a high boost ratio. This converter transfers the capacitive and inductive energy simultaneously to increase the total power delivery reducing losses in the system. The conduction losses in the transformer and MOSFET are reduced as a result of low-input RMS current and switching loss is reduced with a lower turn-off current. The Proportional and integral (PI) Controller used is functioning based on the technique known as Pulse Width Modulation (PWM). Finally, the simulation has been carried out using MATLAB/Simulink and the performance has been studied.

Keywords: Brushless DC Motor (BLDC), Cuk converter, hybrid transformer, Proportional and integral (PI) Controller, high efficiency, photovoltaic (PV) module.

IMPLEMENTATION OF CONTROL ROOM ENVIRONMENT IN IOT PLATFORM FOR INDUSTRIAL APPLICATIONS

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ABSTRACT: The proposed system describes the development of wireless industrial environment by measuring the parameter. The objective is to acquire both temperature and level sensor values with help of IOT and WI-FI. Data of temperature, water level and light detection are transferred using wireless connection. This data are connected with internet for further process. Here the IOT is the ability to transfer data over a network without acquiring the human to human or computer interaction. Due to the static method for control room environment, the customer should constantly be static to screen the technique. The whole control room environment is moreover executed in the Controller-IOT organize and the same is passed on to the system through Bluetooth. In a matter of seconds the customer in control room can be versatile at whatever time, wherever to screen and control the whole plant. ESP8266 basic – An open source basic interpreter specifically tailored for the internet of things. Many ESP-xx modules include a small on-board LED which can be programmed to blink and thereby indicate activity. There are several antenna options for ESP-xx boards including a trace antenna, an on-board ceramic antenna, and an external connector which allows you to attach an external Wi-Fi antenna.

Keywords: ESP8266, OLED, DHT, PCB, PC Screen, Bluetooth Module.

AUTOMATIC POWER SUPPLY CONTROL

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ABSTRACT: The main purpose of this project is to provide continuous power supply to a load, by selecting the supply from any of the four sources namely solar, inverter, main and generator automatically in case if one the source is absent. The need of electricity is increasing day by day and the frequent power cuts of electricity are causing many problems in different areas like banks, colleges/schools, hospitals, houses and industries. Thus there is requirement for an alternate arrangement of power supply. This arrangement can be designed by using ARM7 microcontroller and relays. When a source, say mains fails the supply automatically shifts to next priority source generator and so on. LEDs (Light emitting diodes) can be used to show that which source is used to provide the supply.

Key Words—ARM7, GSM, Relay Driver IC, LCD.

AN INTELLIGENT TRAFFIC CLEARANCE AND CONTROL SYSTEM FOR ELECTRIC VEHICLES

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ABSTRACT : In India most of the accidents are occurring due to the human errors. It is very difficult to avoid such accidents because of the speeding of vehicles and it requires some time to control it. In this paper the effective solution is found to avoid the accidents by using RFID systems in Electric Vehicles which is going to rule this world. The primary goal of proposed system is to identify possible collision ahead of time and to send the report to the main control room or driver before collision happens. We propose a system for monitoring, tracking, and automating the Vehicle. In contrast to the existing methods, we employ a GPS and Wi-Fi instead of GSM by which each vehicle is individually monitored and necessary information is passed on proactively. The proposed system has advantages in terms of communication range and accuracy with respect to Wi-Fi, RFID based vehicle tracking method. The work has potential applications in bad weather and emergency situations like collision.

Keywords: Wi-Fi – Wireless fidelity, GPS – Global Position System, RFID – Radio Frequency Identification

ENHANCED EFFECTIVE METERING FOR NON-SINUSOIDAL LOADS

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ABSTRACT : In the growing modern world, most of the consumable appliances are made using modern power electronic devices. These devices naturally use (process through) non-sinusoidal currents. In the past two decades measuring apparatus used, have not effectively computed the exact instantaneous current flow. Hence these meters failed to give the exact reading i.e., the conventional meter gives a valid reading and response only for the linear loads. In contrast, it does not give a valid reading and response for the non-linear loads. In order to overcome this problem, revenue metering which is an enhanced effective metering for non-sinusoidal loads which also accounts for the influence of supply deterioration and computation of instantaneous effective impedance calculation can be used. This project can be modelled by using a mathematical derivation and it is analysed through MATLAB-simulink software package and can be experimentally evaluated through embedded coded ARDUINO based hardware implementation.

MOTION CONTROLLED ROBOT USING MULTI SENSORS POWERED BY AI ENGINE

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ABSTRACT: Introducing speech recognition is a natural goal in robotics as it is one of the most common forms of communication for humans. In human language, this is referred to as natural language. This is very advanced as it depends on the context, the person, the moment, etc. Although a great deal of progress has been made in robotics in recent years, it has not yet mastered this. Leaving aside highly advanced robots in laboratories such as ICub, or the very impressive progress made in the military sector, the problems encountered in personal robotics are more mundane. Speech recognition with a mobile robot depends not only on the quality of the components but also on the environment (as always with robotics), which can be noisy or cause an echo, or modify the perception of the sound due to its shape (the robot could perceive a sound differently if it is going along a wall for example). As you will see later, controlling a robot using your voice is more complicated than sitting in front of your desk dictating to your computer using a microphone. Automatic speech recognition together with speech synthesis is part of what is known as speech processing. The aim of speech recognition is to analyse a word or phrase picked up by a microphone and transcribe it in text form onto a computer (or equivalent) so that it can be used.

DESIGN AND ANALYSIS OF FOUR PORT DC -DC CONVERTER

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ABSTRACT: Due to the intermittent feature of renewable energy sources, energy storage units are needed in order to balance the electricity generation and consumption. Interface circuit is an important component of the energy storage system. This paper presents a non-isolated four-port dc-dc converter for the electric vehicle system. The proposed four-port dc-dc convert is used to interface four power ports. These are photovoltaic cells (PV) port, battery port, super capacitor port and load port separately. The circuit topology is derived by integrating several parallel Boost converters. The operation principles and the performance are analyzed in detail. The mathematical model of the proposed converter is built. The four-port dc-dc converter can realize energy bidirectional flow among PV, energy storage medium and load. It can also realize the DC bus voltage stable and ensure balance of system power. Finally, simulation results are given to verify the validity and feasibility of the Design and analysis of four-port dc-dc converter .

Keywords: four-port dc-dc converter; hybrid energy storage system; energy bidirectional flow; converter mathematical model.

POWER QUALITY IMPROVEMENT IN MULTILINE DISTIBUTED SYSTEM USING MLI BASED INTERLINE DYNAMIC VOLTAGE RESTORER

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ABSTRACT: In this paper deals with Power Quality Improvement in Multiline Distributed System Using MLI Based Interline Dynamic Voltage Restorer. The IDVR is combination of two DVRs which can improve the voltage of weaker line . A paper proposed a novel H-bridge multilevel inverter based IDVR, with compared an existing cascaded multilevel inverter. The Objectives of the proposed method to improve the higher output power from the medium voltage source by employing MLI based IDVR are simulated then the results of voltage sag compensation, real power, reactive power, voltage and THD are compared and tabulated using MatLab/Simulink and the simulation results are presented.

Keywords: Dynamic Voltage Restorer (DVR), Flexible AC Transmission System (FACTS), Multilevel Inverter (MLI), Interline Dynamic Voltage Restorer (IDVR), Power Quality.

POWER QUALITY IMPROVEMENT IN IEEE 30 BUS SYSTEM USING INTERLINE DYNAMIC VOLTAGE RESTORER

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ABSTRACT: In this paper deals with Power Quality Improvement in IEEE 30 Bus System Using Interline Dynamic Voltage Restorer. Closed loop control technique (PI, PID, FOPID and FUZZY) is implemented to analysis the dynamic perform of the system. Measurable parameters such as steady state error, peak time, and rise time, settling time and voltage profile of above controllers are simulated and compared using MATLAB/SIMULINK. Findings: The comparison results reveal that, a time domain specification is improved and steady state error is decreased. Novelty/Improvements: FUZZY logic based IDVR system has been implemented to improve the dynamic performance of the system.

Keywords: Dynamic Voltage Restorer (DVR), Flexible AC Transmission System (FACTS), Multilevel Inverter (MLI), Interline Dynamic Voltage Restorer (IDVR), Power Quality

HIGH EFFICIENCY, HIGH GAIN DC/DC CONVERTER TOPOLOGY USING RENEWABLE ENERGY SOURCES.

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ABSTRACT: This paper introduce new technology of high gain DC-DC converter topology which can be used for photovoltaic (PV) application. The proposed dc-DC converter contains 3 interleaved boost converter which is in the combination of parallel along with the two voltage multiplier cell having inductor and capacitor connected in series. The operating principles, characteristics waveform design details along with the simulation results prove the validity of the design and superiority over existing converter topology in terms of the ability to obtain high efficiency reduce the ripple current with high power handling capacity. The proposed converter is able to yield a voltage gain of 10 and distribute output power of 3kW with an efficiency of 88%.

Keywords: Interleaved boost converter, High gain High power, Voltage multiplier circuit, PV panel.

A NOVEL METHODOLOGY OF CONTROL DRIVES IN MICRO GRID

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ABSTRACT: The AC Micro Grid is proposed, of which structure is derived from the conventional Micro Grid technology and hybrid transformer less inverters is used, in this inverter the lower number of switching devices is required, thus the cost is reduced and the renewable energies are integrated using the MPPT technology and the load is shared with higher efficiency Improved intelligent Fuzzy Particle Swarm Optimization (FPSO) MPPT algorithm with In MPPT algorithm for renewable energy systems. In addition the synchronizing process is developed for the bus is developed. Simulation and experiment have been verified for the validity of the proposed technology.

Keywords: Transformer less inverter, High Gain dc-dc converter, Power Quality, RL load, Synchronization, Micro grid.

FUZZY CONTROLLER BASED APF WITH DG INTEGRATION FOR POWER QUALITY IMPROVEMENT

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ABSTRACT: Power quality is the major problem in the electrical distribution network, out of various power quality problems; harmonics problem is major in distribution network. Various FACTS controllers are proposed for mitigation of power quality problem in the distribution network for harmonic compensation Active power filter is proposed. Another major problem in the power system network is increasing load demand day by day to meet the increasing in load demands renewable energy sources (RES's) are inter connected to the distribution network. For integrating any type of renewable energy sources (RES's) we need a voltage source converter (VSC) one for power quality improvement, another for integration of DG. This work proposes a fuzzy controlled SRF theory based APF with DG integration in the proposed system the fuzzy control circuit will perform the function of harmonic elimination, so that the need for an APF (Active Power Filter). Implementation of a fuzzy logic controller by using voltage as feedback for significantly improving the dynamic performance of proposed APF module with good stability factor is to be achieved. The system of DG integration with APF controlled by Fuzzy is modelled using MATLAB\Simulink. The operating conditions are demonstrated to improve the power quality is simulated using MATLAB/SIMULINK

KEYWORDS; Active power filter (APF), Distributed generation (DG), Fuzzy logic controller and Power quality

A SOLAR POWERED CAR USING AUDRINO COTROLLER

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ABSTRACT: This paper examines an integrated path planning and power management problem for a solar-powered unmanned ground vehicle (UGV). The proposed method seeks to minimize the travel time of the UGV through an area of known energy density by designing a smooth, heuristically optimized path and allocating the vehicle's power among its electrical components, while the UGV harvests ambient energy along the designed path to satisfy with the mission's strict energy constraints. A scalar field is first established to evaluate the solar radiation density at discrete locations. A modified particle swarm optimization method is applied to search for a minimal time path wherein the energy gathered is equal to or greater than the energy expended. The proposed modelling and optimization strategy is verified through computer simulation and experimental demonstration.

Keywords: Solar power, Arduino, ultrasonic sensor

ENERGY AUDITING IN OUR COLLEGE CAMPUS

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ABSTRACT: An energy audit is an inspection, survey and analysis of energy flow for energy conservation in a building, process or system to reduce the amount of energy input into the system without negatively affecting the output. By identifying the sources of energy use in the college campus such as wastage of energy that can be found out and can be neglected or reduced. Also by replacing the old inefficient items. It is an effective and concrete method to achieve rapid improvement in energy efficiency in buildings and industrial process. First step in identifying opportunities is to reduce energy expense. It is a systematic procedure includes some steps. Energy auditing is also called as energy assessment, energy survey.

A NEW MULTILEVEL INVERTER TOPOLOGY WITH REDUCED NUMBER OF SWITCHES

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ABSTRACT: Multilevel inverters are generally used in medium-voltage and high-power applications. The new structure of multilevel inverter proposed in this paper uses less number of switches compared to conventional topologies. Hence provides lower switching losses and economically advantageous unit than conventional cascaded H-bridge inverter. The new multilevel inverter topology suggested here is simulated using level shifted carrier pulse width modulation technique for gate signals for switches. This structure allows reduction of the system cost and size. Effectiveness of the proposed topology has been demonstrated by comparative analysis and simulation. Matlab/Simulink based model is developed and simulation results are presented.

REMOTE ACCESS OF SUBSTATION TO AUTOMATE & PROTECT USING RASPBERRY PI 3 B+

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ABSTRACT: Substation automation is done by using PLCs and SCADA systems, but for a small substation automation system, this system is considerably expensive. This project adopts low cost automation solutions based on recent IOT technology using embedded processors like raspberry pi 3B+ for automation of all substations. Analog and digital parameters from field are monitored and controlled using GPIOs pin's, WIFI, Wireless Lane, Bluetooth, interfacing relays and communication ports available in raspberry pi3 B+.

ROAD TERRAIN DETECTION FOR VISUALLY IMPAIRED PEOPLE

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ABSTRACT: The project is to design a self-driving vehicle for visually impaired people using ultra sonic, IR &PIR sensors for obstacle detection. Several approaches have been presented in the literature in the last years. However, most of them are limited to specific scenarios and restricted conditions. In this paper we propose a self-driving vehicle that has an artificial intelligence such that it directs itself whenever an obstacle comes in its path. By using AT mega 328 micro- controller. Sensors are used to detect any obstacle ahead of it and send a command to the microcontroller the microcontroller redirects the vehicle to move in an alternate direction by actuating the motors which are interfaced to it through a motor driver.

Keywords: At mega 328 microcontroller, Ultrasonic sensors, Motor drivers, GSM, Motors

PHOTOVOLTAIC FED MAXIMUM POWER POINT TRACKING USING A NEW HYBRID BOOSTING CONVERTER (HBC)

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ABSTARCT:A Hybrid Boosting Converter (HBC) with collective advantages of regulation capability from its boost structure and gain enhancement functionality from its voltage multiplier structure is proposed in this paper. The new converter incorporates a Bipolar Voltage Multiplier (BVM), featuring in symmetrical configuration, single inductor and single switch, high gain capability with a wide regulation range, low component stress, small output ripple and flexible extension, which makes it suitable for front-end PV system and some other renewable energy applications. The operation principal, component stress, and voltage ripple are analyzed in this paper. Performance comparison and evaluation with a number of previous single-switch single-inductor converters are provided.

IMPLEMENTATION OF DIGITAL HARMONIC CONTROLLER IN SMART GRID

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ABSTRACT This paper shows the reduction in the switches simultaneously increasing the levels of the voltage using multi-level inverter here the system is proposed his seven level pulse width modulation (PWM) inverter with H-Bridge cell by the theoretical approach the simulation and experiments were verified. In series connected capacitors voltage unbalancing is solved.

Keywords: Inverters, Multi-level systems, alternate phase, opposition disposition (APOD), Phase disposition (PD), Carrier overlapping (COL), pulse width modulation (PWM), Total harmonic distortion (THD).

AUTOMATED LIBRARY MANAGEMENT SYSTEM SOFTWARE

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ABSTRACT: Asvoria is a computerized software to maintain the functions of the library. In some college, they use manual system for book transaction which was complex. so, we are renovating it to a computerized software for storing the details through this project. In this project, we use Visual Studio as a platform to develop the whole system with C Sharp (C#) as a programming language. Our main objective is to provide all the functions of the library along with the support of barcode reader which gives speed, accuracy and reliability. The contemporary system stores the database (using MySQL) on a local computer which cannot be updated and accessed on a remote computer. Overall this project of ours is being developed to help the library curator to maintain the library in a secured manner and also reduce the human efforts.

Keywords: Visual Studio 2010, C Sharp (C#), Barcode Reader, MySQL.

REAL TIME TRANSFORMER HEALTH MONITORING USING GSM AND IOT TECHNOLOGY

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ABSTRACT: This project is about design and implementation of a mobile embedded system to monitor and record key parameters of a distribution transformer like load currents and ambient temperature. The idea of on-line monitoring system integrates a Global Service Mobile (GSM) Modem, with a standalone Arduino and different sensors. It is installed at the distribution transformer site and the above parameters are recorded using the analog to digital converter (ADC) of the embedded system. The obtained parameters are processed and recorded in the system memory and uploaded to a cloud server. If any abnormality or an emergency situation occurs the system sends SMS (short message service) messages to the mobile phones containing information about the abnormality according to some predefined instructions programmed in the microcontroller. This mobile system will help the transformers to operate smoothly and identify problems before any catastrophic failure.

Keywords. Transformers, Liquid Crystal Display, Current Transformer, Relays, Wi-Fi Module, GSM

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