Online International Conference on "Intelligent Systems, Electrical and Communication Technology-2021" (ICISECT-21)

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Departments of Computer Science, Electronics, Information Technology and Electrical Engineering

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Sri. M. LAXMAN REDDY
CHAIRMAN

MESSAGE

I am extremely pleased to know that the Departments of Computer Science, Electronics, Information Technology and Electrical Engineering of SMEC is organizing Online International Conference on **"Intelligent Systems, Electrical and Communication Technology-2021" (ICISECT–21)** on 9th and 10th of April 2021. I understand that the large number of researchers has submitted their research papers for presentation in the conference and for publication. The response to this conference from all over India and Foreign countries is most encouraging. I am sure all the participants will be benefitted by their interaction with their fellow researchers and engineers which will help for their research work and subsequently to the society at large.

I wish the conference meets its objective and confident that it will be a grand success.

M. Laxman Reddy
M.LAXMAN REDDY
Chairman

Sri. G. CHANDRA SEKHAR YADAV
EXECUTIVE DIRECTOR

MESSAGE

I am pleased to state that the Departments of Computer Science, Electronics, Information Technology and Electrical Engineering of SMEC is organizing Online International Conference on **"Intelligent Systems, Electrical and Communication Technology-2021" (ICISECT–21)** on 9th and 10th of April 2021. For strengthening the "MAKE IN INDIA" concept many innovations need to be translated into workable product. Concept to commissioning is a long route. The academicians can play a major role in bringing out new products through innovations.

I am delighted to know that there are large number of researchers have submitted the papers on Interdisciplinary streams. I wish all the best to the participants of the conference additional insight to their subjects of interest.

I wish the organizers of the conference to have great success.

G. CHANDRA SEKHAR YADAV
Executive Director

Dr P. SANTOSH KUMAR PATRA
PRINCIPAL

I am delighted to be the Patron & Program Chair for the **Online International Conference** on **"Intelligent Systems, Electrical and Communication Technology-2021" (ICISECT–21)** organized by the Departments of Computer Science, Electronics, Information Technology and Electrical Engineering on 9th and 10th of April 2021. I have strong desire that the conference to unfold new domains of research among the Computer Science, Electronics, Information Technology and Electrical Engineering fraternity and will boost the knowledge level of many participating budding scholars throughout the world by opening a plethora of future developments in the field of Computer Science, Electronics, Information Technology and Electrical Engineering.

The Conference aims to bring different ideologies under one roof and provide opportunities to exchange ideas, to establish research relations and to find many more global partners for future collaboration. About 500 research papers have been submitted to this conference, this itself is a great achievement and I wish the conference a grand success.

I appreciate the faculties, coordinators and Department Heads of Computer Science, Electronics, Information Technology and Electrical Engineering for their continuous untiring contribution inmaking the conference a reality.

(Dr.P. Santosh Kumar Patra)
Principal

CONVENERS

The world is always poised to move towards new and progressive engineering solutions that results in cleaner, safer and sustainable products for the use of mankind. India too is emerging as a big production center for world class quality. Computer Science, Electronics, Information Technology and Electrical Engineering play a vital role in this endeavor.

The aim of the online International Conference on **"Intelligent Systems, Electrical and Communication Technology-2021" (ICISECT–21)** being conducted by the Departments of Computer Science, Electronics, Information Technology and Electrical Engineering of SMEC, is to create a platform for academicians and researchers to exchange their innovative ideas and interact with researchers of the same field of interest. This will enable to accelerate the work to progress faster to achieve the individuals end goals, which will ultimately benefit the larger society of India.

We, the organizers of the conference are glad to note that more than 500 papers have been received for presentation during the online conference. After scrutiny by specialist 161 papers have been selected, and the authors have been informed to be there at the online platform for presentations. Steps have been to publish these papers with ISBN number in the Conference Proceedings and all the selected papers will be published in Scopus / UGC recognized reputed journals.

The editorial Committee and the organizers express their sincere to all authors who have shown interest and contributed their knowledge in the form of technical papers. We are delighted and happy to state that the conference is moving towards a grand success with the untiring effort of the faculties of Department Heads of Computer Science, Electronics, Information Technology and Electrical Engineering of SMEC and with the blessing of the Principal and Management of SMEC.

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PAPER ID: ICISECT21-EC0001

Low Power Multiplier Design Using Dynamic Voltage and Frequency Scaling

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Abstract-In recent years, the primary concern of VLSI engineers has been power reduction technologies. In this paper, DVFS offers enormous potential for design trade-offs that include power, energy, temperature and performance of computing systems. In our work, we propose DVFS technology with the goal of reducing overall power consumption. In this work, a dynamic voltage and frequency scaling technique (DVFS) is used to reduce power with the Xilinx ISE 14.5 in conjunction with the Xpower analyzer tool. In the traditional method, we are multiply two numbers, a clever multiplication of bits takes place and then the partial product is added. Both processes took place with the same frequency and in this proposed DVFS technology, multiplication and addition are performed at different frequencies. Practical analysis was performed using a 64-bit multiplier while simulation with DVFS takes place in the proposed manner. When this result was analyzed, it was found that the power is significantly reduced. All design is done in Verliog HDL and is powered by the Xilinx ISE 14.5 tool along with the XPower Analyzer Tool.

Keywords- DVFS, Low Power, VLSI, XPower Analyzer, Xilinx ISE.

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PAPER ID: ICISECT21-EC0005

Bit Error Attentive Losess Color Image Solidity

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Abstract- Advanced Image Compression has various applications that extend from picture pressure for individual use to compacting progressively critical pictures like clinical pictures, sight and sound applications, a web of things, and biomedical applications, transmitting an enormous volume of picture and video data which are altogether popular. The goal of this exploration is to consider different strategies for advanced picture pressure and actualize a picture pressure procedure. Two of the basic Digital Image Compression Techniques are lossless pressure and lossy pressure. In this proposition work, we propose bit-blunder mindful lossless pressure calculations for shading picture pressure subject to the bit-mistake rate during transmission. Every one of the proposed calculations incorporates three phases. The main stage is to change over the RGB pictures to YCrCb pictures and the subsequent stage predicts the changed pictures to produce the buildup arrangements. Improvement calculations are utilized to scan for the best mix of picture change and expectation. At the last stage, the created buildup arrangements are encoded by a few buildup coding calculations, which are 2-D and 1-D bi-level square coding, span Huffman coding, and standard Huffman coding calculations. Key boundaries, for example, shading change data, indicator boundaries, and buildup coding boundaries, are ensured by utilizing Hamming code during picture transmission. The pressure proportion (CR) and pinnacle sign to clamor proportion (PSNR) are two huge execution pointers which are utilized to assess the trial results.

Keywords: Compression ratio, Huffman Code, Peak signal to noise ratio, Bit-error rate

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Water Trash Collector Using Solar Power

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Abstract-The population of India increasing day by day and due to this the pollution also gets increase. The garbage with are produce by the peoples are the main cause of pollution. The most of the garbage are dumped or just thrown in the lake, river of other water resources. The garbage which are thrown in the water such as lakes, rivers and other water resources due to which the water get polluted because of which we cannot use that water for our daily use and the water will also get wasted. In many of cities of India this is the major problem. We are making the garbage collection equipment that is working on solar. The main aim is to introduce the use of nonconventional energy source to run the mechanical machines crane is well known to all for its application & need. It is a material handling equipment basically used to wheel, move, rotate & place the material, from dust bin we know that except some rear cases any mechanical machines needs some power or drive through any type of energy. It can clearly indicate that the proposed system is superior to handle task conveniently, control capability, and environmentally friendly.

Keywords— Battery, solar energy, wireless communication, garbage collector, water impurities, conveyer belt, PMDC motor.

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Voice Controlled Elderly Assistive Device

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Abstract- As the years pass, there is a rapid growth in elderly population. It is clear that they would be unable to do some domestic activities at a certain age when others are not at home. Since children of elderly parents are busy with their daily life, they may not assist their parents, who can't even move from the bed. Monitoring health of elderly parents every day is a troublesome task for children while they are out of home. This paper discusses a voice controlled device which monitors the health just by touching over it. Our main objective is to provide complete assistance to elders through this device. It is placed beside elder's bed. The device performs certain activities when pre-installed voice instructions are given. If they want to call/message to their dear one's, they are supposed to say few commands to device. When someone sends message to elder, it is displayed on LCD screen. If he/she feels like listening songs, it plays some music. They can operate electrical components just by commanding device, not by leaving bed and turning on the switch.

Keywords— LCD, IoT, GSM, SMS and GPIO

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PAPER ID: ICISECT21-EC0009

Evaluation of 16-Bit, 32-Bit Multiply-Accumulate Units Using Vedic Multiplier

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Abstract-Most complex operations in digital signal processing involve a multiply-accumulate operation. MAC Unit performs multiplication of two numbers and stores it in a register. Almost every Processor has a MAC unit. MAC units are also used in FPGA and Certain PLCs along with other processors. But MAC Unit is one of the slowest modules present in the processors. So, there is a non-negotiable need for improving the speed of MAC Unit, which apparently enhances the performance of the processor. This thesis presents the implementation of low area, high speed Multiply-Accumulate Unit. The main objective of this project is Multiply and Accumulate (MAC) unit design using Vedic multiplier, based on Urdhva-Tiryagbhyam Sutra. An efficient 16-bit, 32-bit Multiply-Accumulate (MAC) architecture and performance results are presented in comparison with Booth and Conventional multiplier architectures and also compared with respect to different adders. The 32-bit Multiply and Accumulate (MAC) unit reduces the area by reducing the number of multiplication and addition in the multiplier unit. Increase in the speed of operation is achieved by the hierarchical nature of the Vedic multiplier unit. The Multiply-Accumulate unit designed with Vedic multiplier and Carry skip adder has less delay of 26.102 ns. The modules have been designed in VHDL, simulated and synthesized using Xilinx 14.7.

Keywords—Multiply and Accumulate units, Vedic Multiplier, Carry Skip Adder, VHDL,Xilinx

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Security Assistance System for Women with GPS Tracking and Messaging System

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Abstract- The Project presents "Security assistance system for women with GPS tracking and messaging system" using PIC16F877A microcontroller which is used to find the position of the person or vehicle where the user located on the earth. This information is provided by the GPS with the help of the data it receives from the satellites. The Microcontroller processes this information and the processed information is sent to a predefined phone number using GSM modem and position values displayed on LCD. The recordable camera helps to record everything which is happening at the surroundings.

Keywords: GPS Receiver, GSM Modem, Microcontroller (PIC16F877A), Recordable Camera with a memory card, LCD.

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Gas Detection Robot in Mines

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Abstract-It takes the problem of Atomic mine accidents which results in the death of several people per year. It is found out that the rate of fatality in the mine industry is nearly six times the rate for all private industry. And most of these accidents are due to toxic gasses, fines and lack of rescue System. By implementing an Atomic Mine Gas Detection robot, which can move around unmanned in the mine and detect the level of different toxic gases and report them live to the control room, this level of fatality can be considerable reduced. The objective of this project is to accomplish this task. From a technical aspect this project is software and hardware-oriented project, it requires very specific types of sensors, and innovative methods in transmitting and receiving data. Because a conventional approach will not do much good from an industrial aspect. This can be considered valid if it can detect different sorts of gases, and give a warning to the miners inside the mine in case of a danger at the same time transmitting all the data to the control panel. The data send to the control panel can make a lot of difference, setting up and giving strategies to a rescue team for rescue will make the rescue very efficient.

Keywords: Safety, MQ2 Sensor, Coal Mine, Wi-Fi, Thing Speak, Node MCU 2007

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Autonomous Vehicles by using Image Processing Techniques

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Abstract- As the technology updates new things in every day. The Automobile industry also updates gradually by looking forward to the busy schedule of everyone. The invention of an incredible thing in the field of the automobile industry is the Autonomous vehicles. It uses the concept of deep learning. Deep learning is the type of supervised machine learning. It is the concept of image processing where the image can be compared with the stored examples. The example with which that image matches the output of that example is considered as result of the situation. This technology is used in the invention of driverless vehicles. Deep learning is basically a multi-layer in which each layer helps in identifying and recognizing the exact solution of the problem. In this paper we will discuss how we can use deep learning behind the driverless vehicles and the various image processing techniques.

Keywords— Machine learning, Deep Learning, Automotive industry, Industrial sector etc.

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Proposal Simulation and Execution of Embedded Scheme centered Dual Horn by Wireless Technology

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Abstract-Noise effluence outstanding to extreme honking on superhighways scheduled a growth owed to the thoughtless and at stretches delinquent performance of teamsters. Similarly it is problematic at periods owing to numerous influences to totally evade honking in the no honking zones. These issues donate to the noise-pollution and at a phase today it is practical and vital of the instant to save the noise levels well underneath patterned. Attractive improvement of the developments in the wireless field, the usage of dual-horn aims to transport down the noise levels effectually not only on superhighways and highways free of walkers but also in the no honking zones as healthy. The scheme customs short variety RF MODULE [T5/R5] for the determination of announcement between the vehicles. The main object of this scheme is the low cost and moderately less hardware.

Keywords*:* LCD, Microcontroller, Relay, RF Module UART, WI-FI, Zig Bee

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Monitoring and Controlling the Intensity of Light Using Embedded System

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Abstract-Each and every part of our life is somehow linked with the embedded products. Embedded systems are the product of hardware and software co-design. Embedded system is becoming an integral part of engineering design process for efficient analysis and effective operation. From data analysis to hardware work, every where embedded products are the main interest, because of its reliability and time bound perfection. There is not much time with anyone now a day to give enough in all aspects, so demand of embedded products which serve as we want is high on demand. The present paper describes the design of an embedded system for continuous monitoring the intensity of light in a single system using sensors, microcontroller and LCD. It describes the controlling action incorporated in the hardware to control any device connected when specific conditions are met. Further, the set up is designed in such a way that the data can be stored for future offline analysis.

Keywords: Embedded System, Microcontroller 8051, Data-Logger, Sensor.

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A Review on GPU Implementation using CUDA Parallel Programming

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Abstract- Image Segmentation is an essential part in most of the Image Pre-Processing phases for any applications like Real time Object Classifications, Image Feature Extractions etc. As the resolution size of present images are increasing day by day the time to complete the pre-processing phase is also increasing. A method which is recently came in to limelight is parallel processing using GPU which uses CUDA techniques. This technique is implemented on different signal processing algorithms like K-means, Convolution, FCM, CE-Net, CNN algorithms. In this paper, a review of all the techniques is presented and evaluated the performance difference between all the techniques. A discussion on conceptual details is focused in this paper on each algorithm and compared the performance increase in the each algorithm when parallel method is used.

Keyword-Parallel Programming, Deep learning, K-means

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Recognition of Obstacle by Using Robot

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Abstract- Today's technologies Robots are used in the Industries for high level of performance and dependability. In this project we are using the ultrasonic sensor is attached in front of the robot and the system is made to detect the obstacle .This robot will be just like an electronic car that keeps on moving in straight line until something comes in its path that's when it decides to turns into some other direction so it successfully avoids the obstacle.

Keywords— Microcontroller, ultrasonic sensor

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Modified Gate Replacement Technique for CMOS VLSI Circuit Using Leakage Current Reduction

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Abstract- As of late, spillage power rules the dynamic force in nano scale CMOS VLSI circuits. This exploration paper depicts diverse spillage components that incorporate sub threshold and entryway spillage current. A tale approach of decrease in spillage current is proposed which is principally founded on the ordinary door substitution method. This methodology is progressively viable in circuits with higher rationale profundity. A near examination is performed between the regular and changed door substitution instruments. Utilizing the changed method, the general spillage current and number of substitutions are decreased by 13.5% and 33.5% separately when contrasted with the traditional one.

Keywords— benchmark circuits, gate replacement, leakage current, sub threshold and gate leakage, VLSI.

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Image Segmentation by using Adaptive Algorithm

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Abstract- Image division is a significant preprocessing activity in image acknowledgment and PC vision. This paper proposes a versatile K-implies picture division strategy, which produces precise division results with basic activity and evades the intuitive contribution of K worth. This strategy changes the shading space of pictures into LAB shading space right off the bat. Also, the estimation of luminance segments is set to a specific worth, to decrease the impact of light on picture division. At that point, the same connection between K qualities and the quantity of associated areas subsequent to setting limit is utilized to fragment the picture adaptively. After morphological preparing, most extreme associated space extraction and coordinating with the first picture, the last division results are acquired. Analyses verification that the strategy proposed in this paper isn't just basic yet in addition precise and successful.

Keywords- Image division, Versatile K-implies, Grouping analysis

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Smart Plug Boards

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Abstract- The main aim of this project is to create a modular plug-board which can be used to remotely control electronics connected through it. The plug board also measures the power consumption of all the appliances connected to it. Instead of using traditional mechanical switches we use a touch screen and audio commands to control the appliances. Because of the use of touch display we can have any number of appliances connected to it. This project falls under IOT and home automation and energy saving. As this is a modular system it's easily upgradeable for any further developments in technology. The paper has three main modules. The Central System, the Switch-board module, Individual relay and current measurement module

Keywords- Smart Plug Board, Switch Module.

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Grating Lobes Phase Array Antenna with High Gain

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Abstract-Now a day to increase the directivity and gain of the antenna becomes a vital research. An antenna Array is a configuration of individual radiating elements that are arranged in space and can be used to produce a directional radiation pattern. Single element antennas have radiation patterns that are broad and hence have a low directivity and wide beam width compared to when the number of element of antennas are increasing, that is not suitable for long distance communications with more directive radiation. A high directivity can still be achieved with single element antennas by increasing the electrical dimensions (in terms of wavelength) and hence the physical size of the antenna. Generally, this paper focuses on uniform linear phased array, an array which consists of equal-spaced elements (d), which are fed with current of equal magnitude (i.e. with uniform weighting) and can have progressive phase-shift (theta) along the array. The existence of grating lobes and the mechanisms that can be implemented to reduce these grating lobes are also the main points of interest in this paper. The impact of variation of phase angle, number of elements and inter element spacing are also described with supportive simulation using MATLAB software.

Keywords-Phased array antenna, gain, directivity, grating lobes

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IOT Based Fall Detection System in Military Application Using Wearable Technology

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Abstract-Falls can cause genuine injuries, for example, cerebrum wounds and bone breaks, particularly among older individuals. Dread of falling may decrease proactive tasks bringing about declining social cooperations and in the end causing wretchedness. To reduce the impacts of a fall, convenient conveyance of clinical treatment can assume an essential part. In a comparable situation, an IoT-based wearable framework can clear the most encouraging approach to moderate genuine outcomes of a fall while giving the comfort of use. In traditional IoT frameworks, wearable gadgets assemble and communicate information to portable entryways where the majority of calculations are performed. Notwithstanding, the improvement of wearable gadgets, lately, has diminished the hole as far as calculation capacity with portable passages. Therefore, some new works present offloading plans to use wearable gadgets and henceforth decreasing the weight of portable entryways for explicit applications. Notwithstanding, to convey adequate level of observing and unwavering quality, wearable gadgets working at the center of fall identification frameworks are needed to work for a drawn out timeframe. The older individuals have restricted actual capacities and are more defenseless against genuine actual harms even with little mishaps, for example fall. The falls are eccentric and unavoidable. If there should be an occurrence of a fall, early recognition and brief warning to crisis administrations is fundamental for brisk recuperation. In any case, the current fall discovery gadgets are massive and awkward to wear.In this work, we center around energy proficiency of a wearable sensor hub in an Internet-of-Things (IoT) based fall recognition framework in military field.

Keywords- IOT, Wearable Technology, sensor node, fall detection.

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Programmed Fire Extinguishing Robot

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Abstract-Programmed Fire Extinguisher Robot is a Hardware based model used to naturally stifle the fire during fire mishaps. A Robot has been created which highlights to move toward the path regarding the fire force. The temperature detecting ability of the robot is differed by warming the Thermocouple finishes to a cut-off temperature, above which the robot lights reacting to the fire. The Robot discovers its applications in Rescue tasks during fire mishaps where the opportunities for administration men to enter the fire inclined zones is exceptionally less and furthermore during battles to perform salvage capacities. The most added favorable position of this Robot is that it turns ON naturally as it recognizes the fire around its environmental factors, utilizing Thermocouple and attempts to smother it by moving toward the path as for the fire and it additionally gives a message that fire has been distinguished and furthermore shows live pictures to the client.

Keywords-Robot, IOT, Thermocouple, Arduino, Bluetooth

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Evaluating MPPT Converter Topologies using a Matlab PV Model

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Abstract-An accurate PV module electrical model is presented based on the Shockley diode equation. The simple model has a photo-current current source, a single diode junction and a series resistance, and includes temperature dependences. The method of parameter extraction and model evaluation in Matlab is demonstrated for a typical 60W solar panel. This model is used to investigate the variation of maximum power point with temperature and insolation levels. A comparison of buck versus boost maximum power point tracker (MPPT) topologies is made, and compared with a direct connection to a constant voltage (battery) load. The boost converter is shown to have a slight advantage over the buck, since it can always track the maximum power point.

Keywords- MATLAB, PV Module, Solar Panel, MPPT

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Wavelet Based Image Compression to Gray Scale Images using SPIHT, EZW and SOFM

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Abstract-A digital image is a representation of a two-dimensional image using ones and zeros. Depending on whether or not the image resolution is fixed, it may be of vector or raster type. Without qualifications, the term "digital image" usually refers to raster images also called bitmap images. The raster images will have a finite set of digital values, called picture elements or pixels. The digital image contains a fixed number of rows and columns of pixels. Pixels are the smallest individual element in an image, holding quantized values that represent the brightness of a given color at any specific point. Typically, the pixels are stored in computer memory as a raster image or raster map, a two-dimensional array of small integers. These values are often transmitted or stored in a compressed form. They can also be synthesized from arbitrary non-image data, such as mathematical functions or three-dimensional geometric models; the latter being a major sub-area of computer graphics. The field of digital image processing is the study of algorithms for their transformation. Each pixel of a raster image is typically associated to a specific 'position' in some 2D region, and has a value consisting of one or more quantities related to that position. Digital images can be classified according to the number and nature of those samples such as binary, gray scale, color, false color, multi-spectral, thematic, picture function. The term digital image is also applied to data associated to points scattered over a three-dimensional region. Vector images resulted from mathematical geometry. In mathematical term, a vector often, both raster and vector elements will be combined in one image, for example, in the case of a billboard with text (vector) and photographs (raster).

Keywords-Image resolution, Raster images, Computer graphics, Digital Image Processing

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Medical Image Segmentation: An Multi-Agent Systems Initiative

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Abstract: Image segmentation still requires improvementsalthough there have been research works since the last few decades. This is coming due to some issues. Firstly, most image segmentation solutions are problem-based. Secondly, medical image segmentation methods generally have restrictions because medical images have very similar gray level and texture among the interested objects. The goal of this work is to design a framework to extract simultaneously several objects of interest from Computed Tomography (CT) images by using some priori-knowledge. Our method used properties of agent in a multi-agent environment. The input image is divided into several sub-images, and each agent works on a sub-image and tries to mark each pixel as a specific region by means of given priori-knowledge. During this time the local agent marks each cell of sub-image individually. Moderator agent checks the outcome of all agents' work to produce final segmented image. The experimental results for cranial CT images demonstrated segmentation accuracy around 90%.

Keywords-Medical Image Segmentation; Agent; Multi-Agentsystem

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Reduced Mutual Coupling MIMO Antenna

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Abstract-In communication systems multipath wave propagation is considered. To exploit multipath spread various transmitter and receiving antennas is put at the transmitting and accepting finishes. The higher information rates and mutual coupling enhanced significantly improved proficiency are accomplished by the utilization of MIMO antennas. So Multiple Input Multiple Output receiving antennas are the new research zone for the correspondence engineers. In compact or handheld equipment, for example, cell phones, remote modems, there is the prerequisite of compact antennas. This prerequisite is fulfilled by the microstrip antennas and other small components. A microstrip antenna comprises of a metallic patch which is mounted on a dielectric material. The opposite side of the dielectric material is additionally a metallic layer with bigger measurement.

In this work, a compact, planar, and simple meander line based EBG structure is incorporated between two co-planar waveguide (CPW) feed rectangular patch antennas to suppress the mutual coupling. The isolation between antennas is analysed for both common ground plane and separate ground planes including EBG. The band rejection capability of the proposed EBG structure is demonstrated using scattering parameter inversions method and it is shown that the EBG integrated substrate behaves like a double negative (DNG) material. The proposed EBG integrated closely placed antenna shows excellent isolation over existing solutions and swastika type EBG integrated antennas give good isolation between closely coupled antennas. Finally, the prototype of the antennas is fabricated and good agreement between simulated.

Keywords-EBG, Microstrip Antenna

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Culprit Identifying using Facial Perception

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Abstract-The principle idea of this paper is to explore different avenues regarding utilizing profound learning neural systems to recognize and rapidly react to wrongdoings in progress with compelling Criminal Recognition to lessen the crime percentage. Additionally, physically doing following can be exceptionally troublesome. This is finished with the assistance of face acknowledgment in addition to video handling. Flow framework in this field intends to look for an element in video by removing its face and coordinating (or running) it against a database of human faces that is in the intrigue. In this way, none of the frameworks settle the undertaking on the off chance that they don't have a predefined database against whom the coordinating is finished. Our, Smart AI will do this in a savvy route by first producing datasets from human countenances taken from CCTV video and useit in a Face Recognition model we are utilizing. The utilization of profound learning libraries like keras ,tensorflow alongside some picture handling instruments like openCV with a cloud-based arrangement is done to accomplish this undertaking.

Keywords-Convolution Neural Network(CNN), ONEIROS (Open- ended Neuro-Electronic Intelligent Robot Operating System).

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Gesture Controlled Wheel Chair Using Arduino Controller

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Abstract-This paper describes the design of a smart, motorized, gesture controlled wireless wheelchair using ARDUINO. People with physical disabilities and partial paralysis always find it difficult to navigate through their habitat or their home without the assistance of someone. Often after paralysis or physical disability the wheelchair is the most common means of locomotion for such people. But to navigate through one's own house without help of someone every time can be demoralizing for the person as well. This project introduces a wheelchair, which operates on some easy hand gesture. As it works on hand gestures this wheelchair does not requires help of any other person for pushing it, hence handicapped or physically disabled person feel independent. This wheelchair will also be helpful for increasing the self-confidence of handicapped or physically disabled persons.

The controller then follows a control algorithm and sends the commands to the motor driver L293D circuit to drive the motors accordingly. Old homes, hospitals and bed ridden soldiers are the application of this type of wheelchair.

Keywords-ARDUINO, Motor driver L293D, wheelchair,

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IOT Based Water Metering System with Theft Penalty (Every drop counts)

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Abstract-In urban areas, the water supply to residence and commercial establishment are provided at a fixed flow rate. There are incidents of excess water drawing by certain customers/users by connecting motor-pump sets to the water lines which is considered as water theft. In this project it is proposed to develop an IoT based water metering system and theft prevention systems by recording the flow rates at the customer/user end. The main aim of the project is to design a smart water metering system using IoT and flow sensor. The water bill and the amount of water consumed by user in liters are displayed on LCD; Wi-Fi module is used to send the data to Thing Speak IoT website.

Keywords-Flow Rate, Motor Pump, Flow Sensor, Thing Speak IoT.

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The different Pre-Processing Techniques used in Handwritten Telugu Character Recognition system

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Abstract-In India there are many popular and oldest languages, in that Telugu is one which is used by Telangana, Andhra Pradesh and neighbouring people of the state, in abroad also so many people speak and write Telugu language. There is lot of research required in this area(i.e., offline handwritten character recognition of Telugu).In OCR, pre-processing Technique play very important role for segmenting, Feature selecting, Feature extraction, classification and post processing of characters. The accuracy of the system depends on these processes. So, at pre-processing level much concentration required. This article gives the overview of pre-processing techniques which are useful for researchers and we are discussing in detail about pre-processing techniques. Handwriting character recognition is a popular area in patent recognition. As compared to the online character recognition, offline character recognition is now also demanding job due to following reasons, writing of styles individual people, writing speed, letters size, and letters over lapping and wrier physical and mental conditions. So this article gives the basic methods used in pre-processing level for researchers.

Keywords: Pre-processing technique, offline Telugu Hand-writer characters.

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Women Security Robot Using Raspberry Pi

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Abstract- In current scenario, women security is the burning issue in many parts of the world. Every time the police may not be available to rescue from the problems. So here we proposed a model 'Night vision patrolling robot using raspberry pi' so that we can overcome the problems. Here the robot is mounted with the night vision camera and mice to capture and detect the sound. If the sound sensor detects any sound it sends an alert to the end user and the robot stops automatically. So that the user can control the robot by connecting it to the same WIFI as the robot has been connected. It establish a connection between robot and end user. The robot captures the details through camera and it provides the live streaming video by capturing image by images and form into a video by the use of MPEG streamer which is inbuilt in raspberry pi. The clear image is processed by image enhancement algorithm and it will transmit to the nearest police station. Here we can track the location of the robot by placing the latitude and longitude values in the goggle maps.

Keywords-Raspberry pi, Night vision camera, Sound sensor, Image enhancement GPS(Global Positing System), Electric motors, Battery.

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Automatic Gain Control System for High Frequency Low IF Receivers

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Abstract-Automatic Gain Control circuits are employed in many systems where the amplitude of the incoming signal can vary over a wide range. The role of the AGC circuit is to provide relatively constant output amplitude so that circuits following the AGC circuit require less dynamic range.An Automatic gain control system intended for high frequency low IF receiver applications is designed and implemented. The specifications for the design are taken for a typical GSM 900 receiver, which usually belongs to the above class of receivers. The implemented AGC achieves 60dB dynamic range and the output settles within 75usec. The designed AGC is simulated under various process corners using Cadence tools (0.18um technology).

Keywords-Automatic Gain Controller (AGC), high frequency low IF receiver, Variable Gain Amplifier (VGA)

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Automated Evaluation of Covid-19 Risk Factors Using Raspberry Pi

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Abstract-The beginning of the current COVID-19 pandemic, more than five million people have been infected and the numbers are still on the rise. Early symptom detection and proper hygienic standards are thus of utmost importance, especially in venues where people are in random or opportunistic contact with each other. To this end, automated systems with medical-grade body temperature measurement, hygienic compliance evaluation and individualized, person-to-person tracking, are essential, not only for disease spread intervention and prevention, but also to assure economic stability. Herein, we present a system that encapsulates all of the mentioned functionality via readily-available components (both hardware and software) and is further enhanced with preliminary RTLS data acquisition, enabling post-symptom detected, person-to-person interaction identification to ass's potential infection vectors and mitigate further propagation thereof by means of smart quarantine. On the brink of New Year 2020, the world witnessed a new and deeply concerning situation that only a few have anticipated to have such serious impact on a world-wide scale. What started out as a local outbreak in Wuhan, China, quickly became an uncontrolled, world-wide pandemic, mainly due to slow precautionary measures taken by local governments and large underestimation of the emerging threat in the form of the COVID-19 disease. Since then, however, preventive measures have been implemented, in order to at least slow down the already devastating impacts – both social and economic, across the whole world. To this end, devices either for treatment (e.g., ventilators) or for automated, proactive detection and monitoring of possible virus carriers – have become essential tools of trade in the fight against the pandemic and further spread prevention. While reverse transcription polymerase chain reaction or antibody testing is still relatively time consuming and costly, a simple evaluation of the body temperature at various checkpoints using medical-grade infrared sensors and control of proper hygienic standards, coupled with personalized, indoor location data, could be a quick and effective way of identifying and controlling the spread of the disease within closed environments, such as workplaces or factories.

Keywords-Raspberry Pi, RTLS, RAC

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Reliable Low-Power Multiplier Design Using Fixed-Width Replica Redundancy Block

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Abstract- In this paper, we propose a reliable low-power multiplier design by adopting algorithmic noise tolerant (ANT) architecture with the fixed-width multiplier to build the reduced precision replica redundancy block (RPR). The proposed ANT architecture can meet the demand of high precision, low power consumption, and area efficiency. We design the fixed-width RPR with error compensation circuit via analyzing of probability and statistics. Using the partial product terms of input correction vector and minor input correction vector to lower the truncation errors, the hardware complexity of error compensation circuit can be simplified. In a 12×12 bit ANT multiplier, circuit area in our fixed-width RPR can be lowered by 44.55% and power consumption in our ANT design can be saved by 23% as compared with the state-of-art ANT design.

In this paper, we conclude that fixed width multiplier is designed with proposed error compensation function. Error compensation circuit uses outer partial products of Baugh Wooley array multiplier to generate correction value. The proposed error compensation mainly reduces mean square error of unsigned number multiplication. The proposed fixed-width multiplier performs with lower compensation error, with lower hardware complexity, especially as multiplier input bits increase. Hence the proposed method is simulated by using Xilinx vivado 2016.1. Future possibilities may include error compensation circuit to reduce maximum and mean error of fixed width multiplication of signed numbers.

As there are two existed systems namely reliable low-power multiplier using full-width RPR and fixed-width RPR is capable of operating multiplier through the binary adders. In order to overcome the drawback of full-width RPR in parameters like power consumption and area over-head up to some extent we are going for second existed system. In this, we performed a 12*12-bit multiplier and we can also extend our project to 16*16-bit multiplier and so on. Going for second existed system. In this, we performed a 12*12-bit multiplier and we can also extend our project to 16*16-bit multiplier and so on.

Tools used-Xilinx 13.2

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Gesture Control Robot Car

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Abstract-The paper Gesture Control Robot Car' is a prototype and a way to attain a control over a car without actually being connected with the mechanical functioning of it. The wave provided by your signal or movement helps the robot car to pave its way. The user just needs to wear a gesture device which is provided with a sensor (acceleratorADXL345). The sensor will record the movement of the hand in the specific direction which will result in the motion of the robot in the respective directions. The robot car and the gesture instrument are connected wirelessly through radio frequencies (RF).Movement of the car is controlled by a differential mechanism. This mechanism involves the movement of the forth and rear tires to left or right, along clockwise and anti- clockwise directions which helps to take sharp turns without any difficulty. The total work is laid on 'Raspberry Pi' which has a fastest-growing technology, Python, installed in it by default and is based on Internet of Things (IOT).

Keywords- Raspberry Pi, Python, accelerator, Internet of Things

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A Survey on Neuromorphic Computing with Beyond CMOS Technologies

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Abstract-The population of India increasing day by day and due to this the pollution also gets increase. The garbage with are produce by the peoples are the main cause of pollution. The most of the garbage are dumped or just thrown in the lake, river of other water resources. The garbage which are thrown in the water such as lakes, rivers and other water resources due to which the water get polluted because of which we cannot use that water for our daily use and the water will also get wasted. In many of cities of India this is the major problem. We are making the garbage collection equipment that is working on solar. The main aim is to introduce the use of nonconventional energy source to run the mechanical machines crane is well known to all for its application & need. It is a material handling equipment basically used to wheel, move, rotate & place the material, from dust bin we know that except some rear cases any mechanical machines needs some power or drive through any type of energy. It can clearly indicate that the proposed system is superior to handle task conveniently, control capability, and environmentally friendly.

Keywords-Battery, solar energy, wireless communication, garbage collector, water impurities, conveyer belt, PMDC motor.

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Wavelet Based Estimation of Images Using New Thresholding Function

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Abstract-An image is often corrupted by noise in its acquisition and transmission. Removing noise from the original image is still a challenging problem for researchers. In this work new approach of threshold function developed for image denoising algorithms. It uses wavelet transform in connection with threshold functions for removing noise. Visu Shrink, Bayes Shrink, are compared with our threshold function, it improves the PSNR efficiently

Keywords-Dual Tree Complex wavelet transform (DTCWT), Bivariate shrinkage, Bayes shrinkage, Peak signal to noise ratio (PSNR), Structural similarity index (SSIM).

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A Strategy for Cluster-Based Emergency Broadcasting in Vehicular Networks

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Abstract-Among other security features of Advanced Transportation Systems, vehicle-to-vehicle communication through VANET is intended to save the lives of mankind efficiently. It shares the accident alert message among the vehicles and roadside units to alert the hospitals immediately. In the proposed algorithm, the emergency information is broadcasted to the nodes by selecting the reliable transponder. The cluster-based routing is used to identify the reliable transponder based on stability. To address the scalability issues of VANET, the clustering concept is adopted, so that the accident alert message can be routed through the cluster heads. NS-2 is the simulator used to analyze the quality-assuring metrics such as network-delay, throughput, nodal-energy, and packet delivery ratio. It is observed that the end-to-end delay reduced by an average of 65%, residual energy increased by more than 44%, packet delivery ratio increased by 4% and the throughput increased by 5%.

Keywords-Accident alert message, Advanced transportation system, Clustering, Reliable transponder, VANET

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A Cluster based Scheduling Algorithm (CBSA) for Multiprocessor Systems

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Abstract- The dynamic tasks scheduling of parallel tasks in multiprocessor systems is a challenging problem that is being experimented by the researchers. In this paper a Cluster based tasks scheduling model and a scheduling algorithm CBSA (Cluster based Scheduling algorithm) has been proposed with a lower time complexity. Furthermore, the simulation experiments show that, the scheduling model and scheduling algorithm are flexible a higher scheduling successful ratio may be obtained by this algorithm-for-parallel-jobs-with-large-number-of-tasks.

Key words-DAG, Dynamic Scheduling, Task, Multiprocessor, Schedule length, Homogeneous.

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Design and ASIC Implementation of Four way Set-Associative Cache Memory

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Abstract-This paper presents design of a 4-way set associative cache memory for 32 bit address, the performance is analyzing in terms of cache-hit and cache-miss rates. The design has been done for Finite State Machine based cache controller for 4-way set-associative cache memory of 16KB bytes. Main memory of 4GB has been considered. Cache Controller for 4-way Set Associative cache memory for 32 bit Address to overcome the high conflicts miss in direct map and large Tag comparisons in case of fully associative mapping. ASIC Implementation of the designed cache controller has been done using Cadence tool. Nc-launch used for simulation, synthesis has been done using genus and physical design has been done using Innovus . The total power consumption of configured cache controller is 41.1mW.

Keywords-Cache controller, Miss, Hit, Dirty bit, CPU, Performance, FSM, ASIC, Cadence, Nc-launch, Genus, Innovus.

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Sanitization Walk-Through Disinfectant Tunnel During COVID-19 Pandemic

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Abstract-Given the grave situation of the ongoing pandemic, particularly in a vastly populated country like India, maintaining lockdown for extended periods of time is not a viable option without taking a severe hit in the economy. At some point, an important decision needs to be made regarding the status of removal of lockdown in a proper manner. When this is done, the people will be exposed directly not only to the virus but to people that might be infected with it. A proper system is required to maintain a COVID- free environment. So, in this paper, we are presenting a solution, to ensure that the commuting people are properly sanitized and are not carrying this or any other germs on them.

Keywords-Auto Desk Tinker Cad, Arduino Uno, COVID-19 Disinfectant Tunnel

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ModTree: Précised Line-of-Vision and Non-Line-of-Vision path identification design in RFID systems

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Abstract- latterly, ample research attention is captivated by RFID based motion identification. To project the position or motion status of a specified entity or device, they contingent on an error-free mensuration of signal properties like the angle of phase and strength of received signal in line-of-vision condition. Due to interferences between interrogator and transponder, the necessity of line-of-vision is often infringed in real-time RFID systems. The resulted non-line-of-vision signal minimizes the accuracy in localizing or recognizing activity of target significantly. So in the process of localizing/recognizing an object, it is important to filter out non-line-of-vision signals. The Indoor wireless system frequently works under non-line-of-vision conditions which can cause a range of errors in location-based applications. The identification and alleviation issues in non-line-of-vision using multiple strengths of received signal from wireless network systems is described in this work. To differentiate signals by line-of-vision path from non-line-of-vision, an algorithm is implemented using a modified tree based pattern. Firstly, to discriminate paths of line-of-vision and non-line-of-vision, a joint variance of phase angle and strength of received signals is generated as métrique. Secondly, to alleviate the pessimistic results of phase perturbation on accuracy of identification, a technique is adopted. Thirdly, channels of a chosen subgroup are fragmented and only few readings are utilized to recognize non-line-of-vision paths with stable precision. Due to these subsequent circumstances, the method is said to be précised one. This method is implemented in MATLAB and outcome shows that this technique achieved high recognition precision and F1-score.

Keywords-RFID systems, Modified Tree algorithm, Line-of-Vision and Non-Line-of-Vision signals, phase and RSS values

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A Patient's Health Care Monitoring System Based on Internet of Things (IOT): Related Challenges and Issues

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Abstract-Wireless sensor networks (WSNs) are widely used in the area of health informatics. Wireless and wearable sensors have become prevalent devices to monitor patients at risk for chronic diseases. This helps as certain that patients comply by the treatment plans and safeguard them during sudden attacks. The amount of data that are gathered from various sensors is numerous. Health monitoring systems are one of the most notable applications of IoT. Many types of designs and patterns have already been implemented to monitor a patient's health condition through IoT. In this paper, are view of IoT based smart health monitoring systems is presented. The latest innovative technologies developed for IoT based smart health monitoring system with their merits and demerits have been discussed. This review aims to highlight the common design and implementation patterns of intelligent IoT based smart health monitoring devices for patients. Also introduces the general outlines on opportunities and challenges of the patient's Internet-based patient health monitoring system

Keywords-Intelligent smart health monitoring, internet of things**.**

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ASIC Implementation of Viterbi Decoder with a Convolution Encoder

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Abstract- Viterbi decoding algorithm is an efficacious approach for forward error rectification. The interpreting set of rules introduced in 1967 is the most deciphering process of the convolutional bits. As a result, the focus of studies for this decoder has been on the overall performance of VLSI implementations to be used in communication medium and data storage units, and for decenniums, it is a vital subject of study. This interpreting algorithm is a powerful way to control a bit flip or errors slightly due to noise in a bit transfer. The intricacy of the hardware implementation of this algorithm will become vital because it consumes an immense area, power, and time. A particular technique is to gain optimum power in this decoder primarily predicated consummately on trellis survivor paths. The novel method exploits the floor planning, placement, and routing with clock tree synthesis without losing translation functionality. Following on from this evaluation sundry Viterbi decoders the use of this novel memory method has been well-developed. This paper mentioned the ASIC implementation entanglement encipher and Viterbi decipher in HDL Verilog the utilization of Xilinx ISE and Cadence implements like NCSim for simulation, the genus for the synthesis of modules, and Innovus physical design through the utilization of a forty-five nm technology. Simulated output waveforms and physical designed GDSII are withal presented.

Keywords-VLSI, Viterbi Decoder, ASIC, Cadence, Physical Design, Power, GDSII.

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Performance Analysis of Spectrum and Energy Efficiency in Millimeter-Wave Massive MIMO-NOMA and MIMO-OMA

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Abstract-Non-orthogonalmultipleaccess(NOMA)is multiple access technology that is employed in the fifth-generation (5G) wireless communication systems since, it serve multiple number of user at same time and frequency. Based on the power level users are differentiated. It offers high energy and spectral efficient communication for growing different quality of service (QoS) requirements. Non-orthogonal multiple access (NOMA) is considered in millimeter- wave (mm Wave) due to its massive connectivity. Massive MIMO systems use large number of antenna to improve both the spectrum and energy efficiency. In this paper , we consider mm Wave massive MIMO- NOMA system. As mmWave massive MIMO uses hybrid precoding (HP) for downlink to reduce the number of radio-frequency (RF) chains used and to improve the performance, where hybrid precoding (HP) is a combination of analog and digital precoding. The cluster-head selection algorithm is used to select one user for each beam at first, to reduce error and then the analog precoding is designed according to the selected cluster heads for all beams to improve the array gain . Then, the digital precoding is designed by selecting users with the high channel gain in each beamand to reduce interference. Finally, the maximum sum rate is obtained by optimizing power allocation for mmWave massive MIMO-NOMA. Simulation results show that for the proposed algorithm the HP-based MIMO-NOMA can achieve higher spectrum efficiency by increasing the number of users in each beam and high erenergy efficiency compared with other precoding technique in MIMO- OMA.

Keywords-mm wave, massive MIMO, NOMA, hybrid precoding, power allocation

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Rainfall Prediction Using Machine Learning Technique

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Abstract-Rainfall is one of the most paramount phenomena of climate system. It is prominent that the variability and intensity of rainfall act on natural, agricultural, human and even total biological system. So it is essential to be able to predict rainfall by ascertaining the congruous prognosticators. The utilization of logistic regression modelling has exploded during the past decennium for prognostication and forecasting. From its pristine acceptance in epidemiologic research, the method is now commonly employed in virtually all branches of cognizance. In this paper an endeavor has been made to utilize logistic regression for soothsaying rainfall. It is conspicuous that the climatic data are often subjected to gross recording errors though this quandary often goes unnoticed to the analysts. In this paper a very recent screening methods is utilized to check and rectify the climatic data that is utilized in this study. This project have utilized fourteen years' daily rainfall data to formulate our model. Then utilize two years' visually examined daily rainfall data treating them as future data for the cross validation of this model. This project findings pellucidly show that if this is able to optate congruous prognosticators for rainfall, logistic regression model can prognosticate the rainfall very efficiently.

Keywords-Climatic Variables, Spurious Observations, Outliers, Logistic Regression, Generalized Standardized Pearson Residuals, Cross Validation, Cohen's Kappa, Misclassification.

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Design Square Patch Microstrip Antenna with Dielectric Cover

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Abstract- In this paper square patch microstrip antenna is designed with and without dielectric cover. The thickness of the dielectric cover layer is remarkable effect on square patch antenna parameters is investigated expermentally. The antenna parameters such as resonant frequency, radiation patterns, gain, bandwidt, beamwidth and also VSWR and return loss is investigated experimentally with and without dielectric cover. The proposed patch antenna is designed at S-band frequency range that is 2.4 GHz and designed using antenna software such as High Frequency Structure Simulator (HFSS). The simulated results is compared with experimental results. It is observed the resonant frequency is decreased to 2.3GHz from 2.4GHz due to dielectric covereffect on square patch and other parameters also slightly degraded their performance due to dielectric cover thickness. The performance of single antenna without dielectric cover and antenna with dielectric cover is compared. The designed proposed antenna is suitable in wireless communication applications.

Keywords-Dielectric cover layer thickness, radiation patterns in VP and HP, resonant frequency and voltage standing wave ratio etc.

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Smart Security System for ATM Using Internet of Things

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Abstract--In the era of digitization, everyone needs money without interaction with the bank at any time. For that, ATM is installed everywhere in the localities. As the number of ATMs increased, prevention of larceny and security of customer becomes the prime objective. At present, security systems are not highly secured as they are only provided with alarm system and under the perception of CCTV. The aim of this project is to develop and implement an ATM security system based on a wireless sensor network. When a thief enters and tries to harm the machine, the door of the ATM room gets locked, and the sprinkler sprinkles the chloroform to make the thief unconscious. The buzzer will alert the nearby people of the ATM system. Simultaneously, the message will send to an authorized person of the bank and police station. This will prevent the robbery, and the person involving in the robbery can be easily caught on the spot.

Keywords-Internet of Things (IOT), Controller, ATM, Buzzer, Wireless Sensors…

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3D Localization of Sound Source Using Microphone Array

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Abstract-Speaker identification is found to be an important feature of modern-day contactless communication establishment. This presents a unique and urgent need to create an accurate and efficient localizer. This work aims to demonstrate a 3D localization procedure with the help of a GPS/GSM module enabled with a set of mics. A mathematical analysis is performed to find elevation and azimuth angle for the sound source. The integrated GPS system computes the latitude and longitude of the mics and GPS system receive the coordinates of the mic and transmits this value with azimuth and elevation angle to the smartphone interface.

Keywords-Interaural level difference (ILD), Interaural time difference (ITD), Head related transfer function (HRTF), Generalized cross-correlation (GCC), and Time differences of arrival (TDoA).

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Analysis of 5G – 28 GHz Signal Transmission Over FSO Link in Dusty Weather Conditions Using BPSK Modulation.

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Abstract-FSO may be a communication system wherever free area acts as medium between transceivers which they need to be in LOS for triple-crown transmission of optical signal. Medium may be air, outer space , or vacuum. The modulation of BPSK is finished employing a balance modulator, which multiplies the 2 signals applied at the input. The output sine wave of the modulator will be the direct input carrier or the inverted 180 degree phase shifted input carrier, Which is a function of the data signal. In existing method, the visibility range is up to 50m by using Quadrature Amplitude Modulation. Here we will give visibility range from 100 to 200m by using BPSK modulation. The results calculated are SNR, BER, Eye diagram.

Keywords-FSO,BPSK, SNR, BER, Eye diagram.

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A Comprehensive Analysis of Peak to Average Power Ratio in OFDM using Companding Transform

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Abstract-Due to its ability to deal with frequency-selective networks, orthogonal frequency division multiplexing (OFDM) is used in high data rate applications. However, OFDM has an issue with a high peak-to-average power ratio (PAPR), which decreases the performance of the power amplifier (PA) or otherwise degrades bit error rate (BER) and Out-of-band (OOB) radiation is increased. The main drawback of OFDM is high peak to average power ratio (PAPR).In last few years so many techniques are implemented to reduce PAPR like clipping, selective mapping ,PTS and constellation and companding. The companding techniques will compress and decompress the signal. Amongst these techniques companding technique is to be found more accurate, better SNR and low BER. These techniques can effectively reduce the out-of-band distortion (OBI).These companding techniques are implemented in MATLAB.

Keywords-OFDM, PAPR reduction techniques, Companding transform, AWGN, BER, SNR.

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Ensuring Covid-19 Precaution with an Effective Alert System on Violation of Social Distancing and Wearing Face Mask

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Abstract-The COVID-19 virus had a major impact on our daily lives. The scarcely available vaccine and the medication urges that the precaution to be the best option to handle the pandemic. One way to slow the propagation of the virus is to maintain social distance between individuals. Indeed, many policymakers have accepted it as one of the important ways of reducing virus transmission. But it is very hard to implement and enforce it practically. In this paper, we suggest GPS monitoring for smartphone users and an Arduino-based model for those who do not own smartphones. The proposed service consists of a client program mounted on users' smartphones that periodically send GPS coordinates to remote server at the network's edge. The remote server use a local algorithm to identify and alert the users who are not adhering the social distancing. The proposed system ensures the privacy and anonymity by concealing the user's name, and it is capable of alert users in near real time. In this paper, it is also suggestedto have a framework that uses OpenCV, Keras, TensorFlow, and deep learning to detect whether a human is wearing a mask. The proposed model is cost effective to monitor the public for wearing mask using the Machine Vision and deep learning. It will be more effective when implemented in the educational institution, workplaces and in public places where there will be a huge gathering of people.

Keywords-COVID-19,DNN, Keras, GPS, PIR Sensor, Social Distancing, Tensor Flow

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An Efficient Algorithm for Hand Written script Recognition Using Transform Based Approach with Image Statistics

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Abstract- In present scenario world forgery of hand written script is very much increased. Novel techniques are there to identify a correct hand written script. Hand written or bio metric hand written scripts are widely used for authentication and identification of a person because every person has a own style of Telugu hand written script with its specific structures, so it is needy and necessary to recognize the authenticity of person hand written Telugu hand written script. There are limitations and complexities in recognizing a hand written script image due to lack of abundant technical literature and sophisticated optimal methodologies. , we introduced an efficient approach for hand written Telugu Hand written script recognition and retrieval using transformation-based approach Non-subsampled contourlet transform used for texture classification and the transform consists of Non-subsampled pyramid filter bank and Nonsubsampled directional filter bank also gray level matrix is used to extract the texture features. In addition, image statistics is computed to enhance the recognition performance further. Finally, computed hamming distance. It measures the similarity between trained and test images, it is an effective distance metric over conventional Euclidean distance.

Key Words-Hand written script images, Handwritten script, texture features, statistical properties, non-sub sampled contourlet transform and hamming distance

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Comparative Analysis of Fusion-LDA and Fusion-PCA for Facial Expression Recognition

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Abstract- Facial expression is a similar form of Nonverbal Communication. Facial expression plays significant role in communication with Sign languages, Medical applications, Human computer or Robotic Interaction, Video gaming and Animation. In this proposed method a comparison is done between the recognition accuracies of fusion-LDA and fusion-PCA for facial expression recognition. Three different feature descriptors (Histogram of Oriented Gradients, Binarized Statistical Image Features and Local Phase Quantization) are combined and then for a comparison it is applied to Linear Discriminant Analysis and also to principal component analysis for recognizing the basic facial expressions and also the neutral face. And then recognition accuracies of fusion-LDA and fusion -PCA is compared to evaluate the better one. The method is tested on JAFFE database using two cross validation schemes: K Fold cross validation and Leave One Subject Out cross validation scheme. The results shows that fusion-LDA have improvement compared to fusion-PCA method.

Keywords- Histogram of Oriented Gradients (HOG), Binarized Statistical Image Features (BSIF), Local Phase Quantization (LPQ), Linear Discriminant Analysis (LDA), Principal Component Analysis (PCA), K fold scheme, Leave one subject out (LOSO).

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Accuracy of Cervical Cancer Prediction Using Machine Learning Algorithms

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Abstract - Cervical malignancy is a condition that develops in the cervix. Various strains of the Human Papilloma Virus (HPV), an explicitly infectious disease, are responsible for the majority of cervical malignancies. The cervix is the lower part of the uterus that connects to the vaginal canal. The immune system protects the vast majority of women, but in a small number of cases, the infection persists for a long time. The reason for passing overall is due to convincing access to cervical screening strategies, which is a remarkable test. This virus can be successfully treated if it is detected early on. A Pap test and an HPV DNA test are used in the screening exams. The appropriate informational index is obtained, which includes the patient's age, whether or not they vape, oral contraception, IUD usages, Sexually Transmitted Diseases (STD) proximity, and so on. This role focuses on using AI calculations such as Support Vector Machine (SVM), strategic calculation, direct relapse, and preference tree to predict cervical malignant development from HVP and Pap tests

Keywords- Support Vector Machine, Intra Uterine Device, Human Papilloma Virus, choice tree.

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Design and Simulation of Arrow Shape Fractal Antenna for Wireless Applications

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Abstract- Antennas (or antennas) are electrical devices that transform radio waves into electrical energy. It is usually used in wireless transmitters or receivers. In transmission, a wireless transmitter provides the current that oscillates the radio frequencies in the antenna, which rotates the energy of the current in the form of electromagnetic waves (radio waves). During reception, the antenna cuts off a portion of the electromagnetic wave power, generates a small voltage across the terminals, and applies it to the receiver to expand it. We have design a fractal antenna to improve an efficiency of various degree of gain frequency by using a various application

Keywords- Antenna, Fractal Antenna, Gain Frequency.

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Implementation of Embedded Applications for Wireless Communications with IoT

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Abstract-Artificial intelligence has shown to be the easiest method to process for working with large amounts of data in the IoT networks. Often, workstations today will have sensors that record data and user details as well as sensors that will capture and process that flows through it. we pay attention to the opportunities offered by Artificial Intelligence techniques to make of these advanced Intelligent Networks intelligent Sensor networks have been becoming a fact in the healthcare sector, military, forest, and the seismic activity monitoring departments in the most recent times, all of which employ these sensors to assist their providers. Other types of intelligent devices and sensors are also making their way into smartphones, and laptops as well as other accessories, including electrical equipment, for instance home- and car electronics. And on top of that, several of these systems have the potential to operate outside the building. Then, we continue to study the latest developments in wireless networking methods with the aid of artificial intelligence.

Keywords-Artificial intelligence, Wireless communication, internet of robotics things, internet of intelligent things, Ad-hoc network, wireless network

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Matlab to Embedded System Traffic Control Management-a Research

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Abstract-Today's traffic management system has no significance on live traffic scenario, which leads to amateurish traffic management systems. These traffic timers just show the pre-set time, this is like using open loop system. The project is to design and develop an adaptive traffic control system using a digital image processing. Traffic is the one of the major problem which world faces day by day because of the increase in human population and number of vehicles on the road. Conventional traffic control system is allotted fixed timing to traffic light at road intersection which cannot be varied as per traffic situation or density. But we need an improvement in traffic control system. This proposed system measures the number of vehicles present in each lane using image processing in MATLAB software. This paper is presented through by using MATLAB and Embedded system. A Simulation of Fuzzy Traffic Controller design for controlling Green Light time for effective traffic flow is implemented. Intelligent Traffic controllers are required these days to adjust to a situation of ever increasing traffic. Artificial Intelligence technique such as neuro-fuzzy systems, fixed time embedded controllers, etc. are available to handle the traffic related problems. But Adaptive traffic signal controller based on Fuzzy Inference System used in this project provides smart solutions for efficient traffic control. By using Embedded system it discuss about the ITSC system. The ITSC system will able to deal two basic problem of traditional traffic light system: i) Detection of traffic volume by using genetic algorithm. ii) Emergence vehicle detection such as ambulance, police etc by using wireless sensor network (IR) embedded at the signal intersection.

Keywords-traffic lights, traffic simulation, Intelligent Traffic Signal Controller, embedded system, fuzzy logic.

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Rank Based Quality Approach for Face Image Assessment

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Abstract-Ideally, only image pixels inside the human face should be used for assessing face quality. It can be observed that the normalized faces are compact and guaranteed to contain main facial parts. The normalized faces are then used as inputs to the face quality assessment process. We propose a simple and flexible face quality assessment approach based on learning to rank. Our goal is to find the value of rank weight that satisfies as many constraints as possible. In this paper, we will take an image of group photo or dataset of different facial expressions of a person and detect the quality of the each face. For this purpose we are using RQS (Rank based Quality Score) based calculation. Filter input image by each Gabor filter. The gabor filters are used to real and imaginary parts of the image we taken. Extract the feature vector from the input image by using different operations like down sampling and reshaping etc.

Keywords-Rank based Quality Score, gabor filters, normalized faces, face quality assessment, reshaping.

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Implementation of Wi-Fi And LTE based Software Controlled Radio Algorithm for Long Range Communication with Improved Efficiency

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Abstract-Software-Defined Radio (SDR) is a programmable transceiver that can operate different WLC protocols without having to modify or upgrade the hardware. The SDR progress has contributed to the escalation of protocol growth and a broad range of implementations, with greater focus on cells, Wi-Fi and M2M communications, programmability, versatility, portability and energy efficiency. SDR has thus gained a lot of popularity and is of great importance for academia and industry. SDR designers hope to simplify the realisation, though researchers will experience prototypes on deployed networks, of communications protocols. This paper represents a study of state-of-the-art wireless networking protocol SDR platforms. We provide an overview of SDR architecture and its fundamental components and then address major design trends and development tools. Moreover, we highlight key contrasts between SDR architectures, based on a collection of metrics in terms of resources, computing power and location. We also study current SDR platforms and provide developers with an objective comparison. Finally, we consider a number of similar research subjects and outline possible solutions.

Keywords- SDR, Wireless Communication, Programmability, Co-design, LTE, WiFi, IoT.

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Assessment of Security Problems in the world of IOT: Present and Future Challenges

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Abstract-Internet of Things (IoT) merges with social networks, allowing people and devices to interact, and facilitating information sharing. However, security problem is a great challenge for IoT but it is also useful for creating a "trust ecosystem." In fact, the intrinsic vulnerabilities of IoT devices, with limited resources, different technologies and due to the lack of specifically designed IoT standards will automatically represent a fertile ground for the expansion of specific cyber threats. In this paper, I will try to bring order on the IoT security problems providing a deep analysis from the perspective of the three main key layers of the IoT system model: 1) perception; 2) transportation; and 3) application levels. As a result of the analysis, we will highlight the most critical issues with the aim of guiding future research directions.

Keywords-Cyber threats, Internet of things

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IOT-Connected Safety Wearable Sensor Network for Industrial Applications Using Raspberry Pi

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Abstract-The Industrial sensor monitoring is very important for employee security. Now a day's technology enhances the security system to next level. For the advanced security of the employer we introduced Iot-Connected Safety Wearable Sensor Network System. Internet of things provides the security information known by anywhere in the world. In the proposed article we monitor the industrial wireless security parameters and alerting system to prevent the over damage in case of emergency. Proposed system uses temperature, fire, smoke, fire, employee heart rate sensors for security monitoring and data will process by raspberry micro processor. All the sensor data will post into server for wireless security monitoring with the help of ESP8266 which inbuilt in raspberry pi processor. Buzzer module used to alert the employee at industry for security. This proposed article will enhance the employee security and necked eye monitoring about the emergency in industrial. If any alert sensor activated the then the alerts will send to authorized person through GSM module along with location with the help of GPS module. As well as same data will post into the internet of things for wireless data access for prior security for the employee.

Keywords- IOT, GPS, ESP8266, GSM, IIOT

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Robotic ARM Based on Bluetooth Module

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Abstract- The data which transfer from dongle to Bluetooth modem and modem to Bluetooth dongle by wireless module i.e.; Bluetooth. To transmit & receive wireless data in serial format this module enables. "It is an advanced technology that is widely used nowadays in mobile data sharing and within network communications like a modem to the printer, etc. Allowing transparent two-way data communication" In the project, we can use it for transmitting wireless serial data to establish a connection between MCU or embedded project and PC. In this Bluetooth wireless communication, we are using the HC-05 module for communication. Bluetooth can communicate in serial. Using this Bluetooth, we can control the devices in these projects. [1]Bluetooth can operate with a frequency that frequency transmitted by the microcontroller in the form of an analog signal. This analog signal converted into digital. The receiver will receive that signal and it operated. In this project, we are using the android app by controlling the device. In receiving section HC-05, the receiver module. We can use that module and receive the signal and perform the corresponding operation. Here the robot will pick and place the things in front of it.

Keywords- Bluetooth modem, HC-05 module, android app etc.

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Mutual Coupling Reduction using EBG Structure

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Abstract- This paper presents a compact multiple input multiple output (MIMO) antenna with the electromagnetic band gap (EBG) structures for mobile communication. The proposed MIMO antenna is composed of two radiation patches in which diagonal and folded microstrip lines are utilized to control the frequency bands. The radiation patch, one swastika EBG structure and a rectangular-shaped ground plane are etched on both sides of the antenna. The EBG structures have been employed for reducing the mutual coupling between the antenna elements. As a result of the effect of these structures, the mutual coupling between the two elements is reduced by less than −40 dB. The proposed antenna is implemented on an FR4 substrate with dimensions 22 × 12 mm. Swastika EBG structure used. According to measured results, frequency ranges of 2.4 to 3.4 GHz and 5.0 to 5.8 GHz with $S_{11} < -20$ dB and also 3.2 to 5.8 GHz with $S_{22} < -10$ dB have been obtained. Moreover, measured S_{12} and S_{21} with values of less than −30 dB for both Ports have been realized.

Keywords-Electronic Band Gap (EBG), Microstrip antenna,

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An Efficient Implementation for Preprocessing of Pumpkin Leaves By Using Smoothening Spatial Filtering Algorithms

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Abstract-India is one of the agricultural countries among the worldwide. So, the quality and productivity of agricultural products takes an important concern in this era. There are lots of medicinal herbs and vegetables are grown here and are exported to worldwide countries. Due to these causes, each and every plant are analyzed and monitored to meet out the required productivity. The idea of this paper is mainly focused to analyze the pumpkin plants. The pumpkin leaf images are processed with three stages of analyzing methods like classification, preprocessing and feature extraction. The preprocessing of pumpkin leaf images is done using the smoothening spatial filtering algorithms such as median and ideal filters. In addition to this, some of the FIR filters are also processed. The parameters like MSE, PSNR and SNR are computed to validate the filtering algorithms. The implementation was held in the MatlabR2014a supporting platform.

Keywords-Classification, Preprocessing, Feature extraction and Diseases

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Multi Controlled Robot

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Abstract—The Bluetooth controlled Robot Car. The working is based on Android OS, Arduino, L298Nmotor, DC motor driver and Bluetooth module. Arduino is an open-source prototype platform. Remote control car, with an Arduino, L298N motor and Bluetooth module. Arduino and Bluetooth module. Upload the code to the Arduino using the knowledge of programming. The Arduino code simulated on software and be interface with the hardware. The device can be controlled by any smart device with android. Air Droid is an app exclusive to Android which enables you to connect your device to PC through a Wi-Fi controller of wireless network. All the controls of the vehicle on the app on that device. It is used in the military force before doing some of the process

Keywords- Arduino, L298N motor, Bluetooth

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Design and Implementation of Variable Digital Filter Using Microblaze on FPGA

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Abstract-Advanced channels have discovered various applications in most computerized signal preparing frameworks. Computerized channels incorporate Infinite Impulse Response (IIR) advanced channel and Finite Impulse Response (FIR) computerized channel. Among all the kinds of advanced channels, the straight stage FIR channels are usually utilized as a result of its solidness, direct stage attributes and structure adaptability. Regular advanced channel can just get fixed recurrence area qualities one after another. So as to acquire variable attributes, the advanced channel's sort, number of taps and coefficients ought to be changed continually with the end goal that the ideal recurrence area qualities can be gotten. In contrast to traditional computerized channel, Variable Digital Filters (VDFs) can change their channel type, number of taps and coefficients continually with the end goal that the ideal recurrence area qualities can be acquired. This theory proposes a plan of Variable Digital Filter dependent on FPGA and Embedded Micro-Processor (EMP), which can be utilized as both the Coefficient-adding machine and Programmable FIR channel. This VDF can give the best answer for acknowledgment of advanced channel calculations, which are low-pass, high-pass, band-pass and band-stop channel calculations with variable recurrence space qualities. The target of this work is to plan and actualize an elite and defined FIR channel on a solitary FPGA, which has greater adaptability, power-productivity and soundness than customary FIR channels

Keywords-IIR, FIR, VDFs, FPGA, Embedded Micro Processor

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Smart Human Following Robot

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Abstract-Human following robot is very common in this technology era. Human following is a technique used by robot and autonomous vehicles to follow a human within a specific range. In this case, communication between the human and the robot is the most significant factor where sensor is needed to ensure its successfulness. This paper discussed a human following robot system that utilized ultrasonic sensor. Ultrasonic sensor is preferred for human following robot due to its wide detection area, less light dependency, the ability to detect shining wall, smaller in size, lightweight, use a very low memory, and lower power consumption. However, being a specula type of sensor and not narrowly focused, this can cause wrong estimation and recognition of human, especially at the legs. Therefore, necessary accompanying algorithms should be developed to encounter this issue. Here, three pieces 40 kHz ultrasonic sensors are mounted on the four-wheeled mobile robot platform. The data which have been collected from the ultrasonic sensor will then be interfaced with Arduino software. Thus, this paper outlines a set of benchmarks for human following and briefly evaluates its performances.

Keywords- Arduino UNO, Motor driver(L293d), Motor Gear, Microprocessor & Microcontroller

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PAPER ID: ICISECT21-CS0003

Biometric Method Upgraded Cryptic Data Proficient and Security Authentication to User Using Sensor Nodes

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Abstract - For a smart home framework's, a wireless sensor network (WSN) is utilized for screening home condition and controls brilliant home devices to supervise lighting, warming, security and reconnaissance. To keep a system secure, a user confirmation method is required that enables validated clients to access system administrations. Providing authentication is a challenging task despite the limited properties of sensor nodes. This proposed Multi-Tier User Authentication Scheme (MTUS) a proficient and security upgraded mysterious validation with key understanding plan by utilizing biometrics data as the third confirmation factor. It accomplishes a higher security level just as improved system execution by time calculation of verification is 0.454 *ms*. This arrangement comprises of simple tasks and light calculations. Thus, the proposed method is assessed and contrasted from DoS-Resistant User Authentication (DRUA) existing systems. This plan expands the exhibition of the system by lessening system traffic, guarding against DOS assaults, and increasing the battery life of a linking connection. Subsequently, the usefulness and execution of the whole system are improved.

Keywords: Wireless Sensor Network, User Authentication, Multi-Tier Architecture, DoS-Resistant, Reconnaissance.

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PAPER ID: ICISECT21-CS0005

Smart Irrigation System Using IoT and Node MCU

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Abstract – Agriculture stands one of the vital and evolving branches of occupations in India. About 70% of rural households depend on agriculture for their livelihood. Introducing the latest innovations into this has become one of the most important focuses. The scope of the proposed project is to bring about efficient use of one of the most important and widely utilized natural resources i.e. water. With the increase of population, scarcity of water is increasing. Hence, this project presents efficient irrigation techniques at an affordable price increasing yield for the farmers and helping them manage their crops in a better way.

Keywords: Agriculture, Irrigation, IOT, Node MCU, Cloud, Sensors, Increase in Yield.

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Applications of Blockchain Technology in Current Agricultural Systems

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Abstract - Blockchain is rapidly becoming an interesting technology and provide support for financial transactions in distributed nature. This technology has become popular in recent days and attracted much attention in numerous applications. One of the promising fields is agriculture which includes crop and food production, food supply chain, controlling weather crisis and managing agricultural finance. Mainly the safety of the storage data is essentially a challenging task. Researchers and industries are working to address the issues of farmers through innovative technologies. Blockchain technology plays a most important role in maintaining the confidentiality of stored data in agricultural field. Also, blockchain provides effective and secure data sharing which results in effective farming. This paper discusses the development of different applications of blockchain in agricultural industry.

Keywords: Blockchain, Bitcoin, Agriculture, Data Sharing, Distributed Ledger, Security and Privacy

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MANET in Communication among Smart Devices in IoT

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Abstract - In the next generation network, the physical things will enable to exchange the information among them. Internet of Things (IoT) is an emerging technology that provides facility to connect physical things with the digital world and able to exchange the information. Mobile ad-hoc networks (MANET) is consistently self- designing, framework less system of smart devices associated with each other remotely. Every smart device is enabled to change their locations using the mobility feature of MANET. These devices are also able to act as a bridge to exchange information between devices. MANET in the IoT becomes more attractive with its important approach in the communication among smart objects because MANET has a special feature that can create a network by own self or can connect with another huge network. In this research, the authors propose a solution that describes the convergence of MANET in the IoT. The results found in this paper have been tested and implemented using different seniors.

Keywords: MANET, IoT, Wireless Communications, Smart Objects, Information

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PAPER ID: ICISECT21-CS0012

Sleuthing Brute Force Attacks at the Network Level in Machine Learning

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Abstract — In electronic network and web usage, combined with the growing variety of attacks makes network security a subject of great concern. One in all the foremost rife network attacks that may threaten computers connected to the network is brute force attack. During this work we tend to investigate the utilization of machine learners for sleuthing brute force attacks (on the SSH protocol) at the network level. We tend to base our approach on applying machine learning algorithms on a fresh generated knowledge set based mostly upon network flow data collected at the network level. Applying detection at the network level makes the detection approach a lot of climbable. It conjointly provides protection for the hosts World Health Organization don't have their own protection. The new knowledge set consists of real-world network data collected from a production network. We tend to use four completely different classifiers to make brute force attack detection models. The utilization of various classifiers facilitates a comparatively comprehensive study on the effectiveness of machine learners within the detection of brute force attack on the SSH protocol at the network level. Empirical results show that the machine learners were quite productive in sleuthing the brute force attacks with a high detection rate and low false alarms. We tend to conjointly investigate the effectiveness of victimization ports as options throughout the training method. We offer a close analysis of however the models engineered will amendment as a results of as well as or excluding port options.

Keywords: Brute Force Attack, Network Flow, Network-Level Attack Detection, Machine Learning.

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Cloud Based Malware Analysis Engine for discover and guard against Advanced Malware Infections

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Abstract - Because of increment in variety of internet associated gadgets, malware infections and data breaches became so common. In recent times, malwares are intelligent enough to notice sandboxing, and they are capable of adjusting their behavior to evade detection. Sandboxing could be a mechanism that runs a program in a very protected environment. Scalability, Perceptibility and Opposition to detection are essential for any malware analysis sandbox. Malware is any piece of program that was written with an intention to wreck devices, stealing information, and usually inflicting a mess. To discover and guard against advanced malware infections, one should know how to handle the content that is reaching their device. The aim of proposed research is to suppress sandbox-aware malware from reaching a client and it's primarily being targeted on cloud-based solution for detecting suspicious malware that is aware of sandboxing.

Keywords: Sandbox-aware malware, Cloud Computing, Virtual browser.

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Stock Prediction using Machine Learning a Review Paper

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Abstract - Every day more than 5000 trade companies enlisted in Bombay stock Exchange (BSE) offer an average of 24,00,00,000+ stocks, making an approximate of 2000Cr+ Indian rupees in investments. Thus analyzing such a huge market will prove beneficial to all stakeholders of the system. An application which focuses on the patterns generated in this stock trade over the period of time, and extracting the knowledge from those patterns to predict future behavior of the BSE stock market is essential. An application representing the information in visual form for user interpretation to buy and to sell a specific company's stock is a key requirement. Such an application based on machine learning algorithms is the right choice in current scenario. This paper surveys the machine learning algorithms suitable for such an application; as well it discusses what are the current tools and techniques appropriate for its implementation.

Keywords - Machine Learning, Review Paper, Stock Prediction, Machine Learning Algorithms, Supervised Learning, Unsupervised Learning.

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On the Intruder Detection for Sinkhole Attack in Wireless Sensor Networks

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Abstract— In a wireless sensor network, multiple nodes would send sensor readings to a base station for further processing. It is well-known that such a many-to-one communication is highly vulnerable to the *sinkhole attack*, where an intruder attracts surrounding nodes with unfaithful routing information, and then performs selective forwarding or alters the data passing through it. A sinkhole attack forms a serious threat to sensor networks, particularly considering that such networks are often deployed in open areas and of weak computation and battery power. In this paper, we present a novel algorithm for detecting the intruder in a sinkhole attack. The algorithm first finds a list of suspected nodes, and then effectively identifies the intruder in the list through a network flow graph. The algorithm is also robust to deal with cooperative malicious nodes that attempt to hide the real intruder. We have evaluated the performance of the proposed algorithm through both numerical analysis and simulations, which confirmed the effectiveness and accuracy of the algorithm. Our results also suggest that its communication and computation overheads are reasonably low for wireless sensor networks.

Keywords: sinkhole attack, Wireless Sensor Networks, Network Flow Graph

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Integrating the Internet into a Tableau with Plans to Acquire Things

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Abstract— This paper was written to present the advantages of integrating Tableau Desktop with Internet of Things projects data. Tableau Desktop is a data visualization tool that generates custom graphs and very detailed representations of acquired/execution information. The main functionalities of this tool can be used to have a better overview of the chosen IoT project. By analyzing more detailed representations of data, it is easier to monitor the whole project and accurately identify the focal areas for different action points within the project. Another advantage is represented by the availability of both acquired and execution information gathered from different environments. Some IoT projects rely on this type of availability because they are handling big data volumes that require live and constant monitoring. Tableau is known for the capability to monitor large amounts of information and generate useful diagrams, charts, dashboards geographical dimensions and data partitioning.

Keywords: Tableau Desktop, Internet of Things, Data visualization, Acquiring Data, Execution Data, Risk Assessment, IoT Project Management, Live monitoring, Reporting Tools, Big Data.

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Prevision of Heart Disease Using Machine Learning Techniques

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Abstract – In recent times, Heart Disease prediction is one of the most complicated tasks in medical field. In the modern era, approximately one person dies per minute due to heart disease. Data science plays a crucial role in processing huge amount of data in the field of healthcare. As heart disease prediction is a complex task, there is a need to automate the prediction process to avoid risks associated with it and alert the patient well in advance. Machine learning has been shown to be effective in assisting in making decisions and predictions from the large quantity of data produced by the healthcare industry. We have also seen machine learning (ML) techniques being used in recent developments in different areas of Internet of Things (IoT). In this paper, we propose a novel method that aims at finding significant features by applying machine learning techniques resulting in improving the accuracy in the prediction of cardiovascular disease.

Keywords: Data Pre-processing, Classification, Logistic Regression, Naïve Bayes, Random Forest, Result Analysis.

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Success Use cases of Artificial Intelligence and ML in Business Solutions

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Abstract - The simulation of human knowledge by machines is Artificial Intelligence (AI). Machine Learning (ML) is a division of AI where algorithms are used to make possible judgments or projections through learning from results. The simulation of human knowledge by machines is Artificial Intelligence (AI). Machine Learning (ML) is an AI division that utilizes algorithms to learn from data in order to render possible choices or projections. The application of artificial intelligence and its associated strategies is increasing exponentially. If the systems are being changed from time to time, the technologies are often increasing the usage of these strategies to provide consumers with the most advanced facilities. The usage of several artificial intelligence systems requires facial recognition, palm recognition and other applications, etc. The usage is often increasing as the technological trends go, and we present the implementations with brief information in the current report. Various industries in which we use the latest AI strategies in very high growth are to be discussed and described in depth in the current report. In different fields, this development needs to be observed, and we have explored all those areas in depth.

Keywords: Chabot advisors, Artificial Intelligence, Financial Services, Business Applications, Marketing Applications, E-Commerce Application

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Motor Engine Controlling Helmet

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Abstract – In our country we can see that there is a rapid increase in road accidents and by observing them, the main reason for these accidents is the biker not wearing the helmet, driving the bike by consuming alcohol and one of the main reason is that they are not provided by a proper treatment immediately. All these reasons motivated us to come up with this system where it turn offs the engine when the person doesn't wears helmet, also to avoid drink and drive situations by using an alcohol sensor in order to avoid accidents and provide a safe journey. Incase if the person is met with an accident his current location details by GPS and would be provided to the emergency contacts with help of GSM which helps him with proper treatment at right time.

Keywords: Helmet, alcohol sensor, accident control, GPS, GSM.

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Secure Aware Medical Data using Cyber Security with Neural Network Architecture

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Abstract – Security has been always treated as an add-on feature in the software development lifecycle, and addressed by security professionals using firewalls, proxies, intrusion prevention systems, antivirus and platform security. Today software is the root of all computer security problems hence hackers don't concern about firewalls and other security methods but software is dependent on security measures other hand cloud computing is more powerful to store data in remote areas and it provides on-demand availability of computer systems. This papers deals with the security aware SDLC on cloud applications. The vulnerabilities are assessed before the applications are deployed into the cloud. Various methodologies such as simulation process model, Multiple filters (FISHER and Maximum Response filters) and ANNIGMA wrapper approach etc., were developed for software security approaches for software development lifecycle in cloud computing. However, limitations like lack of clear description of context, more duration time, and expensiveness of models gave rise to our proposed model. This research paper proposes a unified modeling language-based secure software maintenance procedure, where the proposed method is applied for maintaining a large-scale medical database. For secure designing of Web applications, this paper proposes system security performance model for trusted operating system. For re-engineering and re-implementation process of Web applications, this paper proposes the model-driven round-trip engineering approach. In order to secure the medical data, this research work uses the Paillier encryption algorithm for encryption process. The re-engineering process are minimized by using optimization algorithm.

Keywords: Annigma, Re-Engineering, Model-Driven Round-trip Approach, Paillier Encryption

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An Competent Enactment of Sybil Attacks in Vehicular Ad hoc Networks

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Abstract – By having ad hoc vehicle to vehicle connectivity, Vehicular Ad Hoc Networks (VANET) are useful in implementing a smart transportation system. Because of the high-speed vehicles on the network, VANETs are distinguished by high versatility and complex shifts in topology. As we may approve cars, these characteristics face protection challenges. In order to secure private vehicle data and to prevent the flooding of false data that defeats the intent of VANETs, it is important to fix protection. We perceive the attack on Sybil to be one of VANET's most serious challenges. To significantly impede the ordinary elements of health-related applications, Sybil aggressor may create many fake identities with false signals. We implement a direct confidence manager in this work that extracts the trust value of each of its neighbor nodes at a periodic time interval. If we deviate the confidence value, it confirms the Sybil attack. In order to show enhanced Sybil attack detection ratio, we contrast the proposed system with the current system, providing better protection. The NS2 setting is used to prove the consequences of the simulation. The experimental findings show that SAD-V-attack DTC's detection ratio is 5 times higher than the current system's.

Keywords: VANET, Sybil Attack, RSA Algorithm, Location Certificate, AODV, NS2.

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Prediction of Stock trading using Machine Learning Algorithms

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Abstract – In the field of investment, one of the most significant things is stock trade. The forecast of the stock price is an act of attempting to assess the potential value of a stock exchanged on a financial exchange through another financial instrument. The prediction of a stock using Machine Learning is described in this article. The technical and fundamental study of the time series is used by most stockbrokers when producing stock forecasts. Python is the programming language used for forecasting the financial price through machine learning. We suggest a Machine Learning (ML) method in this paper that will be learned from the available stock data and get intelligence and then use the information gained for an effective prediction. Programmed models of prediction are more effective in forecasting market markets with artificial intelligence and improved computing capability. We used artificial Neural Network and Random Forest techniques in this work to forecast the closing price for the next day for five firms belonging to separate sectors of service. Financial data: In order to generate new variables that inputs to the model, accessible, large, low and closed market values are used. Using traditional strategic metrics, we analyses the templates.

Keywords: Random Forest Regression; Artificial Neural Network; Stock market prediction

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A Five-Regime Model for a Balanced Strategy to Letting the Server to Operate in an Optimal Longest Period of Reasonable Time

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Abstract - The realization that power expenditure of cloud computing centers is important and is likely to enhance considerably in the future motivates the attention of research studies in management of energy-aware resource as well as application placement policies and methods to implement these policies. The speedy development of cloud computing has an important impact on the energy expenditure in world. The fundamental viewpoint of our technique is defining of an energy-optimal operation system and attempting to exploit number of servers functioning within this regime. We introduce a model of energy-aware operation which is used for load balancing as well as application scaling on cloud.

Keywords: Cloud computing, Energy-aware resource, Load balancing.

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An Amazon Web Services Review of Cloud Computing

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Abstract – With today's growth in technology, cloud computing has developed as a common and profitable discipline. Nowadays, by deploying their services and data on the internet without relying on any of the physical maneuvers, modern business jargon has witnessed tremendous success. Many renowned companies such as Netflix, Sales force and Amazon have been guided by this independence and movement towards cloud-based Amazon web services (AWS) infrastructure, which overshadows the market for providing cloud-based services with top metrics such as enormous volume, versatility, availability and large number of customers. However, cloud protection remains the key point of concern for Amazon, in addition to many advantages provided by Amazon's cloud infrastructure (AWS). We have identified some of the common security issues that a common cloud infrastructure faces in this review document.

Keywords: Cloud Computing, Amazon Web Services, Cloud Security, Privacy, Database Encryption.

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Recommendation of Spatial Data Queries using Clustering Techniques

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Abstract — Spatial data warehouses store large volumes of integrated and historized multidimensional spatial data in order to be explored and analyzed by various users. The data exploration is a process of searching relevant information in a data set. The data set to explore is a spatial data cube taken out from the spatial data warehouse that users interrogate by launching sequences of SOLAP (Spatial On-Line Analytical Processing) queries. However, this volume of information can be very large and diversified; it is thus necessary to help the user to face this problem by guiding them in their spatial data cube exploration in order to find revel and information.

Keywords: SOLAP, Data, Warehouse, Spatial Data, Queries, Dataset.

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Predictive Data Analytics for Online Companioning Web Sites

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Abstract – Modern Machine learning and statistical mathematical frameworks drive the field of online dating. There is a lot of progress around constant coordinating administrations dependent on geo area. A major transition from workspaces to cellular phones is consistent with the trend of portable. Predictive modeling allows choosing the right player. Predictive analytics on the dating app can analyze the behavior and variables of related users for choosing the right fit. In order to recommend potential matches, the Synapse algorithm utilizes a variety of variables. In evaluating articulated inclinations of a consumer, for example, age is needed, coloring of the hair and structure of the body. We may forecast the most suitable outcome with established data sets from online dating sites.

Keywords: Machine Learning, Cellular Phones, Geo Area, Consumers, inclinations

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New approach to solve the Class Imbalance Problems using Random under sampling and SMOTE Boost

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Abstract — A data set is considered imbalanced when its class representation is substantially different. Examples of rare class are infrequent and cost more than common class examples in binary class imbalance data sets. Common learners usually incline toward common class and rare class examples are missed due to class imbalance. Ensemble learning approach combined with data resampling gains popularity to solve class imbalance problem, recently. RUSBoost and SMOTEBoost are two such methods that combine data resampling techniques with boosting procedure. We propose RUSMultiBoost, a hybrid method that is constituent of MultiBoost ensemble and random undersampling (RUS) to solve the class imbalance problem. Our new method is as simple as RUSBoost but more efficient and effective. We test our method on twelve data sets for class imbalance problem and compare the performance with simple and advanced hybrid ensemble methods. Experimental results show that our hybrid ensemble method performs significantly better than other methods on benchmark data sets using G-mean, Sensitivity and F1-measure. In addition, our method is also suitable for parallel execution as contrast to other boosting methods.

Keywords – Class imbalance learning; ensemble learning; Multi boosting;

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Predicting Academic Performance of Students in Educational Data Mining using Classification

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Abstract— The main objective of higher education institutions is to provide quality education to the students. Predicting student's performance becomes more challenging due to the large volume of data in educational databases. Higher education institutions are often very curious to know about the success rate of the students throughout their study. An upcoming area of research which uses techniques of data mining is known as Educational Data Mining. It involves machine learning algorithms and statistical techniques to help the user for interpretation of student's learning habits, their academic performance and further improvement if required. to improve students achievements by using a new prediction algorithm for evaluating student's performance in academia has been developed based on classification. In this paper we will discuss various techniques of data mining which are useful for predicting performance level of students. For this we used dataset of kalboard 360and applied it on weka to analyze the data

Keywords: Data Mining, Error Measurement, Accuracy, Naïve Bayes, J48, Multilayer Perceptron

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Emergency Vehicle Detecting using ML & AI

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Abstract—Pandemic has taught us the value of life and health. Everyone has started focusing on their physical and mental wellbeing. Reacting quickly to anything has been our priority. This can be taken as an advantage and be implemented on our current road safety techniques. According to the National Crime Records Bureau, nearly 24,012 people die each day due to a delay in getting medical assistance. These patients have suffered heart attacks, brain hemorrhages, suicide attempts, accidents, and strokes. What if we told you that the roads can be much safer than they are now in case of an emergency? Yes, it can be using the EMERGENCY VEHICLE DETECTION. With Machine Learning being the fastest growing industry, it has been proved that this can make our lives on the road much safer using the neural networks to detect vehicle siren in different dB from the dataset, to differentiate between emergency and non-emergency vehicles.

Keywords: Safety, Medical Assistance, Heart Attacks, Brain hemorrhages, Strokes.

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An Efficient QoS-Aware Multi Objective Load Balancing and Optimized Routing in Cloud Data Center Networks

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Abstract - Cloud computing is a very important and one of the fast growing field in present day. The demand for cloud computing (cc) services is increasing due to its availability anywhere anytime known as anything as a service. As the users of internet increasing tremendously day by day, all the services of IT is shifting to cloud computing because of its reliability, flexibility, scalability and elasticity features. Hence, these services increase rapidly, the load on individual nodes. This situation triggers the need for load balancing. In this paper, a load balancing method called load-aware multi-objective optimization algorithm (LA-MOA) is proposed for balancing the load on the cloud data centers (dc). This algorithm works mainly with the FRDM table, the FRDM table holds all records such as request flow, capacity of controller, bandwidth, and so on. Based on the information provided by the FRDM table, the LA-MOA will transmit the overloaded request from the overloaded controller to the best idle controller. Additionally, the proposed system can provide QoS guarantee on balancing the load of controllers. Finally, this method is compared with different existing load balancing systems to show the efficiency and it earned better results than the existing systems.

Keywords: Cloud Computing, Data Center, QoS, Load Balancing, Bandwidth, Delay, Packet loss

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Flower Detection using Real Time Object Detection YOLO

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Abstract – In nature, we have found different types of flower plants. It is difficult to identify and recognize which flower species it is. Since the recent growth of deep learning in computer vision, identification of objects is extended through various fields. In this paper we aim to detect the flowers on Oxford17 flower dataset. Flower detection is the most challenging task in the field of object detection, due to the diverse range of flower species with different colors, shapes, size or surroundings with leaves, shrubs, etc. In this paper we propose a state-of-the-art real time Yolo object detection model for fast and accurate detections. The proposed model is a novel single-step object detection method for differentiating flowers from a wide variety of species. This system performs both localization and object recognition in the image automatically. The flower region is segmented automatically to allow localization of the lowest possible bounding box around it, and then mark the items in the image. At the training stage, we implement advanced measures to improve stable, precise, and real-time classification. We evaluated our method on Oxford17 dataset and Google images dataset. The experimental study results have shown better results and exceeds 98% on the dataset which is effective than the others.

Keywords: Computer Vision, Deep Learning, Flower detection, Object detection, Object classification, YOLO.

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A Strong Automated System for Collision Detection on Rail Track Using IoT

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Abstract - Safe transportation of travelers is the key business target of any transportation framework. Railroads are perceived as the most secure method of mass transportation and Safety has been perceived as the key issue for the rail lines and one of its exceptional qualities. All business methodologies exude from this subject and Endeavour to accomplish Accident Free System. Wellbeing is, in this way, the key execution list which the top administrations need to screen and make preventive strides in light of patterns of mishaps. For detecting breakage of rails we are going to implement a methodology to save the passengers from rail accidents and thereby increasing the growth of Indian railways. Currently, most of railway inspections are manually conducted by railroad inspectors. This inspection takes too much time to inspect the rail collision and then inform to the railway authority people. In this way it may lead to disaster. Hence to avoid delay and improve the accuracy, our proposed system will automatically monitor the rail by using Wireless Sensor Networks. The existing monitoring is unacceptable for slowness and lack of objectivity, because the results are related to the ability of the observer to recognize critical situations. So we proposed automatic inspection of railway using Raspberry pi and transmitting the information using GPS and GSM**.**

Keywords— Wireless Sensor Networks, Internet of Things, collision detection, raspberry pi

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Technological Interventions: An Enabler for Work Teams to Survive Virtually Amidst Pandemic

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Abstract - The world has undergone an unprecedented crisis due to the advent of Pandemic-COVID-19 affecting lives of people and practices of businesses. The present research paper is an endeavor to address the current scenario to bring about the critical developments. Insurmountable challenges were overcome by introduction of technology in various business dimensions. This has led the financial services industry to adopt and adapt according to the times making them use virtual teams to effectively realize organizational goals. This paper is an attempt to respond to the needs of managers and practitioners adopting technology to manage the virtual teams in the financial services sector of UAE during the health crisis of COVID-19 pandemic. Qualitative research has been adopted by means of extensive literature review. The role of technology in dealing with the challenges to facilitate virtual teams has also been discussed in the paper.

Keywords – Technology, virtual teams, business, crisis, pandemic, financial services

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DCNN: Elderly People Fall Detection in Indoor Video

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Abstract – Falling can have fatal consequences for the elderly, especially if the fallen person cannot seek help due to a loss of conscience or another associated injury. Automatic drop monitoring systems could contribute to solving this problem through prompt fall warnings which allow third parties to respond and reduce the fear of falling while living independently. Vision-based fall surveillance systems identify people at the scene and use data from these areas to train classification systems for fall recognition. However, the efficiency of these systems lacks generalization to invisible environments due to factors such as errors during the detection stage and the unavailability of large-scale fall data sets to learn robust features. A deep-seated learning framework is presented in this paper for automatic RGB fall detection captured by one camera. It de-identifies sensitive information in the original images and protects the confidentiality that is of great importance in computer security. Examples of difficult real-world falls databases show that our system effectively transforms awareness of falls from synthetic to real world data and achieves high falls in unseen real-world environments that show its ability to generalize highly accurate falls detection.

Keywords: Fall Detection, Deep Convolutional Neural Network, Deep learning

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Predicting Depression Level of Students Due to Online TLP Using Machine Learning Techniques

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Abstract — Covid-19, as a global disease, has so-called for social isolation. It has made people mandatory to sit indoor and sitting idle indoor may lead to mental stress. Hence to keep people engaged and free from mental stress, online learning can play important role. Online learning is the best solution during this pandemic situation. Teachers can use virtual classrooms to teach from home with all necessary tools which makes the online sessions as effective as traditional ones. Pandemics often compel the learners to stay at home for long period of time and obstruct teaching-learning process. This article emphasizes on how online learning is beneficial during times of crises like work absences or pandemics. Therefore, some tools and techniques for online learning which can ensure the continuity of learning are highlighted. Some emerging methods of Government of India for online learning are presented. Merits and demerits of online learning platform are also discussed. Perceptions of learners and educators on Online Learning system during lockdown are pointed.

Keywords: Global Disease, Pandemic situation, Tools, online learning, Merits.

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Storm Prediction Dashboard

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Abstract— The Weather forecast is used to predict the atmospheric condition such as rain, wind, heat, pressure, humidity etc. It is very useful especially in agriculture, air traffic and military purposes. Weather forecast is done by analysis on bulk data, received from the satellite for specific purpose. It is a very tedious and time taking for analysis on such a huge volume of data. Now a day, Data mining is very popular to handle such type of data. Some algorithm like Back Propagation, Naïve Bayesian and Decision Tree Induction is being used to predict the weather condition on diverse parameters. Here, we are proposing Cumulative Distribution Function (CDF) for modeling and analysis of complex data for weather prediction. This method gives us the better accuracy in case of climate change in near future.

Keywords: Weather Forecast, Atmospheric condition, Satellite, Decision Tree, CDF

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Joint Hypergraph Learning: Retrieval of Tag-Based Image

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Abstract - While image-sharing websites such as Flickr grow in popularity, a growing number of researchers are focusing on tag-based image retrieval (TBIR). It's a valuable method for searching pictures shared by social media users. Tag details and a variety of visual features have been studied in this area of study. Most current processes, on the other hand, use these visual features individually or in order. In this paper, we propose a global and local visual features fusion approach to learn the relevance of images by hypergraph approach. A hypergraph is constructed first by utilizing global, local visual features and tag information. Then, to obtain the pseudo-positive images, we suggest a pseudo-relevance feedback mechanism. Finally, we use the hypergraph and pseudo relevance feedback to measure the relevance score of each image to the question using the hypergraph learning algorithm. The proposed method's efficacy is shown by experimental findings.

Keywords: — Tag-based Image Retrieval-Hypergraph - Feature fusion - Visual Feature-Pseudo Relevance Feedback.

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Deep Convolutional Neural Network: Emotion Recognition from Whole Body Movements

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Abstract: This research paper present a novel and generic framework for the recognition of emotions using human body expression like head, hand and leg movements. Whole body movements are among the main visual stimulus categories that are naturally associated with faces and the neuro scientific investigation of how body expressions are processed has entered the research agenda this last decade. The database was composed of 254 whole body expressions from 46 actors expressing 4 emotions (anger, fear, happiness, and sadness). In all pictures the face of the actor was blurred and participants were asked to categorize the emotions expressed in the stimuli in a four alternative-forced-choice task. Using Deep Convolutional Neural Network (DCNN), the input images are trained and produce the EMONET model. Then the model can be tested by test images for recognizing human emotion from non-verbal communication.

Keywords: Emotion recognition, non-verbal communication, Body movements, DCNN.

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SMART Book Reader: Text extraction from Image using Tesseract OCR and comparison with Google Cloud Vison API

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Abstract—In our world population, there are many visually impaired people around the world and such people needs assistive device that can guide them and help them to read the content and convert the content to speech. Hence, with recent advancement in the technology, we intend to implement a SMART book reader that is capable of capturing a image from a camera and extract the text from the captured image and further to convert the text to speech as voice based output to assist the visually impaired people. The captured image is analyzed using Tesseract-Optical Character recognition (OCR). In order to extract the text we use image preprocessing methods to remove any noise or blur in the captured image so that the accuracy can be increased. Further, we include a Talkey Python module to convert the text to speech as voice output. In this project we use Raspberry pi 3 interfaced with USB Night vision camera and speaker to produce the converted text as voice. By applying Tesseract OCR we intend to analysis the accuracy level of the extracted text through image enhancement methods. Further, we compare the extracted text using Tesseract OCR with online Google Cloud Vision OCR image to text extraction. We conclude that Google Cloud Vision OCR gives 100% accuracy than the Tesseract OCR as few of the texts are unable to decode using UTF-8 format.

Keyword: Text extraction, Image enhancement, Tesseract, Google Cloud Vision OCR, Optical Character recognition

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Realistic Future Flying Car using machine learning

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Abstract - As the number of vehicles are increasing at a very high rate on the roads and it is almost becoming impossible to travel, there needs to have a solution for the traffic congestion. Many methods were tried and almost every method has some or the other drawback. The only solution for reducing the traffic congestion is to have triple mode car, which should run on road, water and should fly in the sky. This will definitely reduce the traffic congestion and will also provide or perhaps helps to start a thought process in designing the same concept car. These cars will be useful for different section of people in terms of commercial and personnel use. People can travel on their own or can use the same for delivery of goods from one place to another and even for lifting patients from a place to nearby hospital. Which means this car can be a life saver vehicle. Many issues needs to be addressed in order to make it a safe triple mode car. Here we have to design a car with road safety measures, safety measures necessary to fly and also we need to take care of safety measures to run on water it has become inexcusably obvious that our technology has exceeded our humanity.

Key words: Traffic congestion, Design car, Safety measures, Radar, Flying, Futuristic.

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Categorization and Identification of Attentive Students Using Support Vector Machines to tailor Learning Systems

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Abstract - There have been many studies I which researchers have attempted to classify student attentiveness. Many of these approaches depended on a qualitative analysis and lacked any quantitative analysis. Therefore, this work is focused on bridging the gap between alitative and quantitative approaches to classify student attentiveness. Thus, this research applies machine learning algorithms (K-means and SVM) to automatically classify students as attentive or inattentive using data from a consumer RGB-D sensor. Results of this research can be used to improve teaching strategies for instructors at all levels and can aid instructors in implementing personalized learning systems, which is a National Academy of Engineering Grand Challenge. This research applies machine learning algorithms to an educational setting. Data from these algorithms can be used by instructors to provide valuable feedback on the effectiveness of their instructional strategies and pedagogies. Instructors can use this feedback to improve their instructional strategies; and students will benefit by achieving improved learning and subject mastery. Ultimately, this will result in the students' increased ability to do work in their respective areas. Broadly, this work can help advance efforts in many areas of education and instruction. It is expected that improving instructional strategies and implementing personalized learning will help create more competent, capable, and prepared persons available for the future workforce.

Keywords— Support vector machines, K-means, Kinect, personalized learning systems

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AI-Aided Framework for Improving Learning Outcomes of Education System in India

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Abstract— Every child is gifted with untapped potential in different domains. The right to earn and live a successful life must be supported by the education system for every child. The fundamental idea of education is to empower individuals to lead successful lives. Technology has made an impact on us and made our life easy. Right from daily grocery needs, buying and selling of property till the higher education in every domain the use of technology is growing exponentially. Our current education system focuses on remembering the things than understanding and hence a major shift of teaching-learning system is necessary. The National Education Policy introduced in India takes care of almost all components which were essential for making the student employable. The skill-based training plays a significant role in career development and hence to identify the potentials of student and to improve their standing in society with the right training is suggested in the research paper. This research paper suggests an Artificial Intelligence (AI) - aided framework for the education system. This research work suggested identifying the suitable career dimension for K-12 students; it also describes the support system for education 4.0 ecosystem. Machine learning tools can be used to track progress as well as for individual and collaborative learning.

Keywords— Education 4.0, Machine learning, teaching-learning system, career dimensions, collaborative learning

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Ground Level Testing Software

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Abstract— The improvements need in the present methods of Ground level testing software's or simulation software's combined with hardware modules proving the system mainly in Aerospace, defences & Navy application tests are discussed in this paper. Some data are given to show the great expense of such methods. The conclusion is reached that adequate ground-test facilities should be provided for use and requirement to be ruggedized. This Concept of Ground level testing plays an important role in huge real time technology mainly in aerospace and defence engineering. Ground level testing phase decides the completeness of the system. The simulation is also the method which completes the definition of to testing the imitation of the operation of a real-world process or system over time, Often; computers are used to execute the simulation. Simulation is used in many contexts, such as simulation of technology for performance tuning or optimizing, safety engineering, testing, and training.

Keywords— Ground level testing, Aircraft, Subsystems, terminals

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Trends of Internet of Things in India

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Abstract – Rural India is the base of our Country. In Rural India, Harvesting and Agriculture is top bread-winning activity. In India about 70% of population depends upon farming and one third of the nation's capital comes from farming. Issues concerning agriculture have been always hindering the development of the country. The only solution to this problem is smart agriculture by modernizing the current traditional methods of agriculture. Hence the project aims at making agriculture smart using automation and IoT technologies. The highlighting features of this project includes smart GPS based remote controlled robot to perform tasks like weeding, spraying, moisture sensing, bird and animal scaring, keeping vigilance, etc. Secondly it includes smart irrigation with smart control and intelligent decision making based on accurate real time field data. Thirdly, smart warehouse management which includes temperature maintenance, humidity maintenance and theft detection in the warehouse. Controlling of all these operations will be through any remote smart device or computer connected to Internet and the operations will be performed by interfacing sensors, Wi-Fi or ZigBee modules, camera and actuators with micro-controller and raspberry pi.

Keywords: IoT, automation, Wi-Fi, warehouse, theft detection, zigbee

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Isolated Marathi Word Recognition using Deep Convolutional Neural Network (DCNN)

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Abstract— In the decade of more than 50 years, ambitious speech research had a machine to interpret the fluently spoken word. Automatic Speech Recognition (ASR) allows us to convert speech signals into a sequence of words utilizing an algorithm implemented as a computer program. The major focus of this paper to develop such a system for the Indian language. Hidden Markov Model (HMM) and Gaussian Mixture Models (GMM) is used for many years by acoustic modelling. For calculating probabilities GMM use assumption near the data distribution. A Deep Neural Network is a feed-forward neural network. It is a multilayer perceptron network means each neuron in one layer is connected to all neurons in the next layer. Now day different types of speech recognition systems are available for different purposes. In this work, the Mel frequency Cepstrum coefficients (MFCC) feature is used. The performance of a system is based on Word Error Rate. For the above research work, it shows 11.65% WER.

Keywords — Marathi, Isolated, Mel Frequency Cepstral Coefficients, Hidden Markov Model, Word Error Rate, Acoustic Model.

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Breast Cancer Identification via Thermography Image with Naïve Bayes & Neural Network classifire

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Abstract— Breast cancer is known as the most common offensive cancer type between women and men. Programmed breast cancer discovery classifications are in demand for that, various machine learning techniques have been proposed to detect breast cancer. In this paper we are performing with two different operations. One of these techniques is the Bayes classifier Naïve Bayesian (NB) which is based on the Bayes theorem and the second one is the methodology and techniques used are based on a deep Convolution Neural Network model to predict breast cancer from thermal images. Thermal images are pre-processed, segmented and classified using a deep neural network. The research mainly concludes with to get 95.8% accuracy of prediction achieved for breast cancer based on the output spectrum using training data of 680 thermo grams. We are taking the different readings of both samples by using 5,10,20 folds dataset & also compare in between the two classifiers which will be more relent or efficient to detect breast cancer in an early stage by using thermal images.

Keywords: Naïve Bayesian, Thermal Images, Neural Network, Breast Cancer, Classifiers.

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Reflection of SH-Waves by a Spherical Cavity Embedded in an Inhomogeneous Medium

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Abstract - The solution of displacement field to the problem of reflection of SH-waves by a spherical cavity embedded in an inhomogeneous medium has been obtained in the integral form. The integrals are evaluated asymptotically to obtain a short time estimate of the motion near the wave front by the steepest descent method. The displacements of impulsive waves are shown graphically for different values of the inhomogeneity factor. This problem has valuable applications in the theory of Earthquake Engineering, Civil Engineering, Geophysical and related problems in seismology.

Keywords: Reflection, SH-impulsive waves, Spherical cavity, inhomogeneity.

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Smart Transformation – ETL Framework for Real-Time Analytics on Document Oriented Databases for Data Warehouse Modernization

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Abstract—Relational databases have fulfilled the requirements for most applications for the past many years. But the growing data and the necessity of real-time analytics make traditional RDBMSs insufficient to achieve high performance. NoSQL databases are more relaxed in terms of the structure of data, and they provide horizontal scalability. The data warehousing environment has emerged as an important area in recent times. The data stored can be utilized in many applications like analysis, processing, and so on. In conventional DW, ETL (Extract, Transform, and Load) are the primary process that can process data in format of the data warehouse. Even though DW provides many advantages, the central issue prevailing is related to the processing of data. The availability of a large amount of data makes it difficult to extract the relevant features/attributes, resulting in the wrong classification/prediction of information. We have designed a framework for real-time processing by integrating the classification approach into the data pre-processing at the Data Warehouse stage for analytics-ready data. The proposed framework will be analyzed with execution time and memory usage to check the performance.

Keywords—ETL Framework, Data Warehouse, MongoDB, Real-Time Analytics, NoSQL/SQL

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Exploring the Potential of Machine Learning and Artificial Intelligence in HealthCare

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Abstract – Artificial Intelligence and Machine Learning are the fields of computer science. These are the most explored technologies which are used in various fields to reduce human efforts e.g. Healthcare, Education, Retail, etc. Machine Learning is a subfield of Artificial Intelligence. ML and AI are proved for better disease detection, identification, diagnosis, and treatment. People nowadays suffer from a variety of diseases as a result of the climate and their lifestyle choices. There are several records in hospitals which are known as Electronic Health Record. To process that data and to diagnose that disease manually is problematic. To overcome these problems there is a need for some system/technique. To find the solution to these problems ML and AI came into existence. This paper gives an overview of how these two can help in healthcare.

Keywords: Artificial Intelligence, Machine Learning, Deep Learning, Artificial Neural Network, Naïve Bayes, Decision Tree, SVM, Genetic Algorithm

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Blockchain Technology for Curbing Input Tax Credit Fraud in India

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Abstract— The Government of India introduced the Goods and Service TAX (GST) to simplify the taxation system and curb tax evasion. The implementation of GST was indeed a tremendous success. However, the IT infrastructure backing the GST system is not robust. Numerous cases of fake invoices leading to input Tax Credit (ITC) fraud are reported daily in the newspaper. GST can significantly benefit from the inherent properties of blockchain technology. This paper provides an insight into the working of GST and how malicious businesses acquire fraudulent ITC and cause loss to the government. It also discusses the benefits that GST can reap from blockchain technology. Finally, we propose a blockchain-based architecture using Hyper ledger Fabric to curb ITC fraud.

Keywords— Blockchain, GST, IBM Blockchain, ITC, Hyper ledger Fabric.

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Delving Into Vyper: A Security-Oriented Language for Smart Contract Development

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Abstract— Solidity has been the de facto language for smart contract development since the inception of the Ethereum blockchain. Smart contracts written in Solidity have become the target of numerous attacks, exploiting vulnerabilities found in the language's design. The developers of Ethereum and active members of the community came up with a security-oriented language, Vyper. It aims to address security flaws found in Solidity by prioritizing security, simplicity, and audibility over complex functionalities. This paper presents a list of security pitfalls that Solidity fell into and gives a comprehensive overview of vyper and its key features. Additionally, we also compare programming constructs in both languages. Furthermore, static analysis using smart check is done on the simplified version of the King of Ether Throne (KoET) smart contract in both languages. The result of the static analysis proves the security-oriented nature of vyper.

Keywords- Blockchain, Ethereum, Smartcheck, Smart-contract, Solidity, Vyper.

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Compartive Analysis of Breast Cancer Detection through Thermal Images Using K-Nearest Neighbour, Adaboost, Logistic Regression

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Abstract—Breast cancer can be found in both men and women. Though it's rare in men, breast cancer in women has increased significantly and as per WHO cancer statics 2018 report of Breast Cancer recorded approximately 1.6 to 2 lakhs registered cases and around 90 thousand reported deaths. The detection of this cancer at higher stages (i.e. stages 3and 4) makes it difficult for the patient to survive and thus is a reason that 50% of Indian women suffer from stages 3 and 4 of breast cancer. One more reason for less survivability is that people have less awareness on such a topic. The objective of this research paper is to present results obtained on breast cancer on basis of a comparison of K-Nearest neighbor, Adaboost, Logistic regression using 5 folds 10 folds, 20 folds on data sets. These techniques achieved an accuracy of 96.3%, 91%, and 86.3%. in that, we found KNN is better than the Adaboost and Logistic regression.

Keyword: Breast Cancer, Mammography, preprocessing, Segmentation, KNN, Adaboost, Logistic regression, Malignant.

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Potential of Machine Learning and Deep Learning for Mining the Opinions

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Abstract - Various researchers are working on the rapidly growing field of opinion mining. With the growth of social media and data mining techniques, interest in analyzing the opinions and sentiments expressed by individuals has been increased; that is why opinion mining is becoming so popular now-a-days. Both Machine Learning (ML) and Deep Learning (DL) techniques are used to mine the opinions. In this research article, we will discuss and compare ML and DL techniques; and explain their working to analyze opinions.

Keywords: Opinion Mining, Sentiment Analysis, Machine Learning, Deep Learning,

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Multi Convert System Using Python

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Abstract: A python GUI application which converts different quantities like Area, Length, Weight, Temperature and Currency; and also finds the latest stock market updates. This Multi converter system is in Python. Talking about the features of this system, this python application is designed to convert entered numbers from one system/unit to other system/unit and it is also capable of handling all types of exceptions. Module Used – Tkinter() - It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter outputs the fastest and easiest way to create the GUI applications. Creating a GUI using tkinter is an easy task.

Keyword: GUI, Tkinter, multi converter, python, task

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To Select a Best Mini Server in P2P Using RSVP Protocol and Firefly Algorithm

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Abstract: Peer-to-Peer (P2P) computing is that the quick emerging overlay network distribution system, the most gains of P2P is every peer within the network will act autonomous. Super peer network illustration is associate degree advancing design of centralized topology embedded in an exceedingly localized system within the Peer-to-Peer system. Super peer overlay helps to boost the performance of P2P applications like live streaming. To avoid the chance of super peer node failure within the network communication model, this paper proposes the RSVP communication primarily based established protocol and firefly algorithmic program to pick out the fail over super peer node from a cluster of peers so as to keep up the responsibility, quantifiability and strength of the network. We simulated this network model in Peer Sim Machine to accomplish good performance.

Keywords: Distributed Network, Firefly Algorithm, RSVP Protocol

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Cloud Based Efficient Privation Conjunctive Queries with Ind-Cka Security

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Abstract - A conjunctive query uses the logical conjunction operator and is a special case of a first-order query. First-order queries can be used to write several conjunctive queries. Processing conjunctive queries on public cloud platforms with both keyword and rang conditions while maintaining privacy is a major challenge. No previous privacy-preserving conjunctive query processing scheme based on searchable symmetric encryption (sse) has been able to meet the three requirements of adaptive protection, effective query processing, and scalable index size. In this paper, we introduce the first privacy-preserving conjunctive query processing scheme that meets all three of the above criteria. An indistinguishable bloom filter (ibf) data structure for indexing is proposed to achieve adaptive protection. To achieve efficient query processing and structural in distinguishability, we recommend indistinguishable binary tree, a highly balanced binary tree data structure (ibtree). We suggest an ibtree space compression algorithm to remove redundant information in ibfsin order to achieve scalable and compact index sizes. A traversal minimization algorithm is suggested to improve search efficiency. We suggest updating algorithms to make our scheme dynamic. Using the ind-cka secure model, we show that our scheme is adaptably secured. This paper's main contribution is the achievement of conjunctive query processing with strict privacy guarantees and practical speed and space efficiency. Our tests revealed that our system is both fast and scalable. In the case of millions of records, processing a query takes just a few milliseconds.

Keywords— Adaptive Ind-Cka Security, Indistinguishable Bloom Filter, Searchable Symmetric Encryption, Cloud Computing, Privacy Preserving Conjunctive Queries

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A Review on Rainfall Prediction Using Machine Learning & Artificial Neural Network Techniques

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Abstract - In Rural area, Agriculture is the key point for survival. For agriculture, rainfall is most important. These days rainfall prediction has become a major problem. Pre diction of rainfall gives awareness to people and know in supplied beforehand about rainfall to take certain precautions to protect their crop from rainfall. Many techniques came into existence to predict rainfall. Machine Learning algorithms are mostly useful in predicting rainfall. Some of the major Machine Learning algorithms are ARIMA Model (Auto - Regressive Integrated Moving Average), Artificial Neural Network, Logistic Regression, Support Vector Machine and Self Organizing Map. Two commonly used models predict seasonal rainfall such as Linear an d Non-Linear models. The first models are ARIMA Model. While using Artificial Neural Network (ANN) predicting rainfall can be done using Back Propagation NN, Cascade NN or Layer Recurrent Network. Artificial NN is same as Biological Neural Networks.

Keywords: - Rainfall, Prediction, Artificial Neural Networks, Deep Learning

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IoT and Machine Learning based Smart Agri -Farming System

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Abstract— In the topical age of competition and risks in markets, advancements in technology are a must for better feasibility and growth. In the same way, it applies to the agriculture industry. Based upon their yield and quantity every farmer experience high spikes on the crop. At present, maintenance of farm is a very hot issue that needs to be apparatus at utmost propriety by rising water issues and proper methodologies. Automation of farms is proposed in this research. The suggested solution is based on the Internet of Things (IoT), which would be an inexpensive and more accurate solution to farm needs. The main purpose of the monitoring system is to solve over-irrigation, crop-specific irrigation and soil erosion problems will be evolved to ease and efficiently manage all the irrigation problem. The main well-known fact in agriculture is water scarcity and over wastage of essential resources should be reduced. The proposed solution will be developed by the setup of Wireless Sensor Network (WSN) so that every farmer will be getting some sensor modules that will be transmitting data on the common server. These scenarios will be supported by Machine Learning (ML) algorithms based on the prediction for irrigation patterns. So such a comfortable approach to irrigation is provided in this paper.

Keywords-Agriculture; IoT; Machine learning; Farming; Soil;

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Scheduling Security-Critical Real-Time Applications on Clusters

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Abstract—Security-critical real-time applications such as military aircraft flight control systems have mandatory security requirements in addition to stringent timing constraints. Conventional real-time scheduling algorithms, however, either disregard applications' security needs and thus expose the applications to security threats or run applications at inferior security levels without optimizing security performance. In recognition that many applications running on clusters demand both real-time performance and security, we investigate the problem of scheduling a set of independent real-time tasks with various security requirements. We build a security overhead model that can be used to reasonably measure security overheads incurred by the security-critical tasks. Next, we propose a security-aware real-time heuristic strategy for clusters (SAREC), which integrates security requirements into the scheduling for realtime applications on clusters. Further, to evaluate the performance of SAREC, we incorporate the earliest deadline first (EDF) scheduling policy into SAREC to implement a novel security-aware real-time scheduling algorithm (SAEDF). Experimental results from both real-world traces and a real application show that SAEDF significantly improves security over three existing scheduling algorithms (EDF, Least Laxity First, and First Come First Serve) by up to 266.7 percent while achieving high schedulability.

Keywords—Clusters, scheduling, real-time systems, security-critical applications, security overhead model.

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A Machine Learning Approach for Enhancing Defence against Global Terrorism

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Abstract - The objective of this paper is to predict the region and country of a terrorist attack using machine learning approaches. The work has been carried out upon the Global Terrorism Database (GTD), which is an open database containing list of terrorist activities from 1970 to 2017. Six machine learning algorithms have been applied on a selected set of features from the dataset to achieve an Accuracy of up to 82%. The results suggest that it is possible to train machine learning models in order to predict the region and country of terrorist attack if certain parameters are known. It is postulated that the work can be used for enhancing security against terrorist attacks in the world.

Keywords: Terrorist Attacks, GTD, machine learning, algorithms, dataset.

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A Detailed Investigation into the Product Evaluating Data Mining Process Using Twitter Data

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Abstract —This paper further enhances the techniques and chronological methods to perform the corresponding manipulation and further prediction analysis. We have acquired a real-time dataset based on the Twitter user's comments sections. The uniqueness of the dataset is that we have extracted only the particular comments which syntheses a particular word based on the product. Then further repetitive extraction is made to complete the dataset. Our dataset has three columns based on the ideology that the particular user or our focused subject has enhanced any detail about the product that we are observing. In this precise dataset, we have taken the subject about the usage of the product by the users that have been manufactured by the companies Google and Apple. Both technology giants have well versed their technology reign in this era and they are further focused on their upcoming cyber projects and their products will be more advanced in the future. As they are involved in further optimization in their devices and increasing their specifications. It would be a complex task to accomplish their project without the feedback, pros, and cons of their predecessor projects. They can extract such features from the Twitter API dataset and they could further enhance their product. They could analyze the drawback, whether the product has reached the market and came out with success all type of this information can be extracted from social media instead of conducting a survey. Such a process would be a more hectic classification and we cannot predict any accurate results. So we proceed with the social media Data mining Process.

Keywords— Twitter Data, Dataset, Data Mining, API, Analyze

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Smart Anti-Theft Detection System for Vehicle using IoT

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Abstract - With the monumental growth of technology, Internet has become the integral part of every day's life. The usage of smart phone also increased due to the advancement in technologies. Now, Internet of Things (IoT) are developing rapidly from small scale machines to large scale machines to collect data and provides useful information to accomplish specific task. The people are searching smarter technologies to safeguard their belongings. The main aim of this paper is to introduce smart Anti-Theft detection system for vehicle using Internet of Things. The important characteristics of this detection system are light weight, low cost and smart wireless detection system. This detection system monitors the movement of vehicle by using Global Positioning System (GPS) and Microcontrollers. The movement of the vehicle is detected then the alert message will be sent to the mobile through mobile application. The location of the vehicle is detected and it is controlled through mobile application from remote location. The proposed system detects and prevent the robbery of the vehicles by using Internet of Things.

Keywords: Internet of Things, Global Position System, Microcontrollers, Vehicle, Anti-Theft Detection.

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A Secure Anti-Collusion of Data Sharing Scheme for Dynamic Cloud Group.

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Abstract: The Benefited from Cloud Computing, customers can attain a flourishing and moderate methodology for records sharing among accumulating individuals inside the cloud with the characters of low preservation and little administration cost. Then, protection certifications to the sharing information statistics might be given in view that they're outsourced. Horribly, due to the never-ending trade of the enrolment, sharing information whilst giving protection saving remains a checking out difficulty, particularly for an untrusted cloud because of the settlement attack. In addition, for present plans, the safety of key dispersion relies upon at the safe communication channel, on the other hand, to have such channel is a strong feeling and is difficult for exercise. In this paper, we propose a safe facts sharing plan for element individuals. Firstly, we recommend a safe direction for key dispersion and not using a secure correspondence channels, and the customers can thoroughly acquire their personal keys from accumulating administrator.

Keywords- Dynamic Cloud,

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Secure Data Group Sharing and Conditional Dissemination with Multi-Owner in Cloud Computing

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Abstract: With the fast development of cloud services, giant volume of data is shared via cloud computing. though cryptographic technique have been utilized to give data discretion in cloud computing, current mechanisms cannot enforce privacy concerns over cipher text associated with multiple owners, which makes co-owners unable to appropriately control whether data disseminators can actually disseminate their information. In this paper, we propose a safe information group sharing and provisional distribution scheme with multi-owner in cloud computing, in which information holder can share private data with a group of user via the cloud in a safe way, and data disseminator can disseminate the data to a new group of users if the attributes satisfy the access policy in the cipher text. We extra present a joint access control machine over the disseminated cipher text, in which the data co-owners can append new access policies to the cipher text due to their solitude preferences. furthermore, three policy aggregation strategies, including full permit, owner priority and majority permit, are provided to solve the liberty to yourself conflicts problem caused by different access policies. The security analysis and experimental results show our scheme is realistic and efficient for secure data sharing with multi-owner in cloudcomputing.

Keywords: Cipher text,cloud, security,data

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Privacy and Security Issues in the Environment of Distributed Computing

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Abstract: Distributed computing is another processing worldview that profit by the appropriated assets to fathom huge scale registering issues. During the most recent couple of years, distributed computing has developed quickly as promising business thought in the IT business because of its attributes, for example, cost decrease, adaptability, comfort, also, versatility. Tragically, there are a few issues lessen the distributed computing development, for example, loss of security, protection, and control. The security issue is viewed as a central point that could forestall the advancement of distributed computing. In this paper, we investigated the distributed computing order, difficulties, and openings. Additionally, we survey and talk about the distributed computing security issues and responsibility. We underline that in spite of the fact that there are numerous security models were proposed to improve the cloud security, however there is no any right now accessible answer for handle all security issues. Along these lines, the future research must be centre around understanding the security issues and a responsibility instrument must be created.

Keywords: Distributed computing, security issues, deployment models, accountability

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Survey on Data Mining Approaches for Healthcare

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Abstract: Because of increasing population, diseases are also growing and these diseases are the major causes of death. As increase of problems in medical field given popularity to use data mining techniques. These techniques have proved clinical decisions and survival time of patients. Choosing proper data mining technique is the foremost task because accuracy is the prime issue. The motive of this paper is to give an exposure on variety of data mining techniques.

Keywords: Datamining, Classification, Clustering, Association, Decision tree, Healthcare

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A Review on Battle against COVID for Future Research Guidance

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Abstract: Artificial intelligence (AI) has been applied widely in our daily lives in a variety of ways with numerous successful stories. AI has also contributed to dealing with the coronavirus disease (COVID-19) pandemic, which has been happening around the globe. This paper presents a survey of AI methods being used in various applications in the fight against the COVID-19 outbreak and outlines the crucial roles of AI research in this unprecedented battle. We touch on a number of areas where AI plays as an essential component, from medical image processing, data analytics, text mining and natural language processing, the Internet of Things, to computational biology and medicine. A summary of COVID-19 related data sources that are available for research purposes is also presented. Research directions on exploring the potentials of AI and enhancing its capabilities and power in the battle are thoroughly discussed. We highlight 13 groups of problems related to the COVID-19 pandemic and point out promising AI methods and tools that can be used to solve those problems. It is envisaged that this study will provide AI researchers and the wider community an overview of the current status of AI applications and motivate researchers in harnessing AIpotentialsinthefightagainstCOVID-19.

Keywords: Artificial intelligence, Machine Learning. Cronavirus COVID-19, SARS-CoV-2, future research directions.

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Collective Classification of Spam Campaigners on Twitter

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Abstract: Online Social Networks (OSNs) have not only significantly reformed the social interaction pattern but have also emerged as an effective platform for recommendation of services and products. The upswing in use of the OSNs has also witnessed growth in unwanted activities on social media. On the one hand, the spammers on social media can be a high risk towards the security of legitimate users and on the other hand some of the legitimate users, such as bloggers can pollute the results of recommendation systems that work alongside the OSNs. The polluted results of recommendation systems can be precarious to the masses that track recommendations. Therefore, it is necessary to segregate such type of users from the genuine experts. We propose a framework that separates the spammers and unsolicited bloggers from the genuine experts of a specific domain. The proposed approach employs modified Hyperlink Induced Topic Search (HITS) to separate the unsolicited bloggers from the experts on Twitter on the basis of tweets. The approach considers domain specific keywords in the tweets and several tweet characteristics to identify the unsolicited bloggers. Experimental results demonstrate the effectiveness of the proposed methodology as compared to several state-of-the-art approaches and classifiers.

Keywords: classification, tagging, online social networks, spammers

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An Enhanced Gaussian Road Traffic Speed Prediction

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Abstract: Road traffic speed prediction is a challenging problem in most intelligent transportation system (MITS) and has gained growing attentions. Presented works are mainly based on raw speed sense data obtained from communications sensors otherwise probe vehicles, which, still, are limited by expensive cost of sensor consumption and maintenance. With bare speed observations, traditional methods based only on speed sensing data are insufficient, particularly when emergencies like traffic accident occur. To speak to the issue, this paper aims to improve the road transfer speed prophecy by fusing conventional speed sensing data with new-type "sensing" data from cross domain sources, such as tweet sensors from social media and path sensors from map and traffic service platforms. together model in sequence from diverse datasets brings many challenge, together with location indecision of low-resolution data.

Keywords: Traffic, Struck, Crash, Accident

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A Dynamic Approach for Encryption and Decryption of Medical Record Transactions in the Cloud Data

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Abstract: In medical cloud computing a patient can remotely outsource her medical data to the remotely outsource her medical data to the cloud server. In this case, only authorized doctors are allowed to access the data since the medical data is highly sensitive. Encrypting the data before outsourcing is a commonly used approach, where the patient only needs to send the corresponding encryption key to the authorized doctors This, however, significantly limits the usability of outsourced medical data due to the difficulty of searching over the encrypted data. In this paper, we propose two Secure and Efficient Dynamic Searchable Symmetric Encryption (SEDSSE) schemes over medical cloud data. Firstly, we leverage the secure k-Nearest Neighbor (KNN) and Attribute-Based Encryption (ABE) techniques to propose a dynamic searchable symmetric encryption scheme, which can achieve two important security features, i.e., forward privacy and backward privacy which are very challenging in the area of dynamic searchable symmetric encryption. Then, we propose an enhanced scheme to solve the key sharing problem which widely exists in the KNN based searchable encryption scheme. Compared with existing proposals, our schemes are better in terms of storage, search and updating complexity. Extensive experiments demonstrate the efficiency of our schemes on storage overhead, index building, trapdoor generating and query searchable symmetric encryption scheme, which can achieve two important security features, i.e., forward privacy and backward privacy which are very challenging in the area of dynamic searchable symmetric encryption. Then, we propose an enhanced scheme to solve the key sharing problem which widely exists in the KNN based searchable encryption scheme. Compared with existing proposals, our schemes are better in terms of storage, search and updating complexity. Extensive experiments demonstrate the efficiency of our schemes on storage overhead, index building, trapdoor generating and query.

Keywords: Health care, Searchable encryption, Dynamic updating, Attribute-based encryption.

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Pro Guard: To Detect Imprecise Transaction Accounts on Social Network Based Online Promotions

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Abstract: Online social networks (OSNs) usage as been increased widely and also coordinate money related abilities by empowering the utilization of genuine and virtual cash. They fill in as new stages to have an assortment of business exercises, for example, online promotion event, where clients can get virtual cash as prizes by taking an interest in such occasions. Both OSNs and business accomplices are essentially concerned when aggressors instrument an arrangement of records to gather virtual cash from these occasions, which make these occasions insufficient and result in noteworthy money related misfortune. It happens to extraordinary significance to proactively recognizing these noxious records previously the online advancement exercises and consequently diminishes their need to be remunerated. In this paper, we propose a novel framework, in particular ProGuard, to achieve this target by efficiently incorporating highlights that describe accounts from three points of view including their general practices, their reviving examples, and the use of their money. 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%.

Keywords: Online social networks, virtual currency, malicious accounts, intrusion detection, network security.

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A Survey on Biometric Authentication Systems in Cloud

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Abstract: Biometric distinguishing proof has gotten progressively well known as of late. With the improvement of distributed computing, data set proprietors are roused to rethink the huge size of biometric information and recognizable proof undertakings to the cloud to dispose of the costly stockpiling and calculation costs, which anyway carries expected dangers to clients' protection. In this paper, we propose a productive and security safeguarding biometric recognizable proof rethinking plan. In particular, the biometric information is scrambled and moved to the cloud worker. To execute a biometric distinguishing proof, the data set proprietor encodes the inquiry information and submits it to the cloud. The cloud performs ID activities over the scrambled information base and returns the outcome to the data set proprietor. An intensive security investigation shows the proposed plot is secure regardless of whether assailants can produce ID asks for and connive with the cloud. Contrasted and past conventions, test results show the proposed plot accomplishes a superior presentation in both arrangement and distinguishing proof methods.

Keywords- Biometric, Cloud

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A Comprehensive Survey of Data Mining-based Fraud Detection Research

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Abstract: Financial fraud is commonly represented by the use of illegal practices where they can intervene from senior managers until payroll employees, becoming a crime punishable by law. There are many techniques developed to analyze, detect and prevent this behavior, being the most important the fraud triangle theory associated with the classic financial audit model. In order to perform this research, a survey of the related works in the existing literature was carried out, with the purpose of establishing our own framework. In this context, this paper presents Fraud Find, a conceptual framework that allows to identify and outline a group of people inside an banking organization who commit fraud, supported by the fraud triangle theory. Fraud Find works in the approach of continuous audit that will be in charge of collecting information of agents installed in user's equipment. It is based on semantic techniques applied through the collection of phrases typed by the users understudy for later being transferred to be positron for later analysis. This proposal encourages to contribute with the field of cyber security, in the reduction of cases of financial fraud.

Keyword- Data Mining, Fraud Detection, Semantic Technique

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A Review on Effective Traceable Authorization Search System for Secure Cloud Storage

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Abstract: Secure inquiry over scrambled distant information is vital in distributed computing to ensure the information protection and ease of use. To forestall unapproved information use, fine-grained admittance control is essential in multi-client framework. In any case, approved client may deliberately release the mysterious key for monetary advantage. Consequently, following and repudiating the vindictive client who manhandles secret key should be settled inescapably. In this paper, we propose an escrow free detectable trait based different watchwords subset search framework with irrefutable re-evaluated unscrambling (EF-TAMKSVOD). The key escrow free instrument could viably forestall the key age community (KGC) from deceitfully looking and unscrambling all encoded records of clients. Additionally, the unscrambling cycle just requires ultralightweight calculation, which is an alluring component for energy-restricted gadgets. Furthermore, productive client denial is empowered after the noxious client is sorted out. Besides, the proposed framework can uphold adaptable number of traits as opposed to polynomial limited. Adaptable different watchword subset search design is acknowledged, and the difference in the inquiry catchphrases request doesn't influence the query output. Security investigation shows that EF-TAMKS-VOD is provably secure. Effectiveness investigation and exploratory outcomes show that EF-TAMKS-VOD improves the productivity and extraordinarily lessens the calculation overhead of clients' terminals.

Keywords: KGC, Cloud, Authorization.

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Financial Fraud Detection with Anomaly Feature Detection on Credit Card

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Abstract: Monetary extortion, for example, tax evasion, is known to be a genuine cycle of wrongdoing that makes misguidedly acquired subsidizes go to illegal intimidation or other crime. This sort of criminal operations include complex organizations of exchange and monetary exchanges, which makes it hard to identify the misrepresentation substances and find the highlights of extortion. Luckily, exchanging/exchange organization and highlights of elements in the organization can be built from the mind boggling organizations of the exchange and monetary exchanges. The exchanging/exchange network uncovers the communication among elements, and along these lines oddity location on exchanging organizations can uncover the elements engaged with the misrepresentation movement; while highlights of elements are the depiction of substances, and abnormality identification on highlights can reflect subtleties of the extortion exercises. Subsequently, organization and highlights give integral data to extortion location, which can possibly improve misrepresentation identification execution. In any case, most of existing strategies center around organizations or highlights data independently, which doesn't use both data. In this paper, we propose a novel misrepresentation discovery structure, Co Detect, which can use both organization data and highlight data for monetary extortion recognition. Furthermore, the Co Detect can at the same time identifying monetary misrepresentation exercises and the component designs related with the extortion exercises. Broad investigations on both engineered information and genuine information show the productivity and the adequacy of the proposed system in fighting monetary extortion, particularly for tax evasion.

Keywords-Fraud Detection, Novel Misrepresentation

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Towards Efficient Privacy-Preserving Image Feature Extraction in Cloud Computing

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Abstract: Content-based image retrieval (CBIR) applications have been rapidly developed along with the increase in the quantity, availability and importance of images in our daily life. However, the wide deployment of CBIR scheme has been limited by its the severe computation and storage requirement. In this paper, we propose a privacy-preserving content-based image retrieval scheme, which allows the data owner to outsource the image database and CBIR service to the cloud, without revealing the actual content of the database to the cloud server. Local features are utilized to represent the images, and earth mover's distance (EMD) is employed to evaluate the similarity of images. The EMD computation is essentially a linear programming (LP) problem. The proposed scheme transforms the EMD problem in such a way that the cloud server can solve it without learning the sensitive information. In addition, local sensitive hash (LSH) is utilized to improve the search efficiency. The security analysis and experiments show the security and efficiency of the proposed scheme.

Keywords: CBIR, Linear Programming, LSH, EMD.

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Predicting Fraud Reviews in an E-Commerce Website

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Abstract: Online reviews have become important source of information for users before purchasing the product. Fraud reviews have an impact on subsequent product sales. Here we have segregated the Fraud reviews into genuine reviews. The Fraud reviews here are the customers who haven't bought the products but given their false reviews with an intention to drop the sales maybe to increase the marketing of the bad product.

Keyword- Predicting Fraud

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An Evaluation of the Cybercrime Underground Economy Using Data Analytics

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Abstract: Despite the rapid escalation of cyber threats, there has still been little research into the foundations of the subject or methodologies that could serve to guide Information Systems researchers and practitioners who deal with cyber security. In addition, little is known about Crime-as-a-Service (CaaS), a criminal business model that underpins the cybercrime underground. This research gap and the practical cybercrime problems we face have motivated us to investigate the cybercrime underground economy by taking a data analytics approach from a design science perspective. To achieve this goal, we propose a data analysis framework for analyzing the cybercrime underground, CaaS, and crime ware definitions, and an associated classification mode.

Keywords: Crime-as-a-Service, Cyber Crime. Cyber Attacks.

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Deniable Attribute-Based Encryption for Cloud Storage

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Abstract: Cloud storage services have become increasingly popular. Because of the importance of privacy, many cloud storage encryption schemes have been proposed to protect data from those who do not have access. All such schemes assumed that cloud storage providers are safe and cannot be hacked; however, in practice, some authorities (i.e., coercers) may force cloud storage providers to reveal user secrets or confidential data on the cloud, thus altogether circumventing storage encryption schemes. In this paper, we present our design for a new cloud storage encryption scheme that enables cloud storage providers to create convincing fake user secrets to protect user privacy. Since coercers cannot tell if obtained secrets are true or not, the cloud storage providers ensure that user privacy is still securely protected.

Keywords: Deniable Encryption, Composite order Bilinear Group, Attribute-Based Encryption, Cloud Storage.

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Forecasting Hospital Admissions using Data Mining

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Abstract: Crowding within emergency departments (EDs) can have significant negative consequences for patients. EDs therefore need to explore the use of innovative methods to improve patient flow and prevent overcrowding. One potential method is the use of data mining using machine learning techniques to predict ED admissions. This paper uses routinely collected administrative data (120 600 records) from two major acute hospitals in Northern Ireland to compare contrasting machine learning algorithms in predicting the risk of admission from the ED. We use three algorithms to build the predictive models: 1) logistic regression; 2) decision trees; and 3) gradient boosted machines (GBM). The GBM performed better (accuracy D 80:31%, AUC-ROC D 0:859) than the decision tree (accuracy D 80:06%, AUC-ROC D 0:824) and the logistic regression model (accuracy D 79:94%, AUC-ROC D 0:849). Drawing on logistic regression, we identify several factors related to hospital admissions, including hospital site, age, arrival mode, triage category, care group, previous admission in the past month, and previous admission in the past year. This paper highlights the potential utility of three common machine learning algorithms in predicting patient admissions. Practical implementation of the models developed in this paper in decision support tools would provide a snapshot of predicted admissions from the ED at a given time, allowing for advance resource planning and the avoidance bottlenecks in patient flow, as well as comparison of predicted and actual admission rates When interpretability is a key consideration, EDs should consider adopting logistic regression models, although GBM's will be useful where accuracy is paramount.

Keywords: ED, Data Mining, Machine Learning

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Advanced Approach for Detecting Spammers in Twitter

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Abstract: Twitter is quite possibly the most mainstream miniature publishing content to a blog administration, which is by and large used to share news and updates through short messages confined to 280 characters. Notwithstanding, its open nature and huge client base are as often as possible abused via computerized spammers, content polluters, and other not well proposed clients to carry out different cyber crimes, for example, digital tormenting, savaging, gossip spread, and following. Likewise, various methodologies have been proposed by specialists to address these issues. Be that as it may, the greater part of these methodologies depend on client portrayal and totally ignoring common communications. In this paper, we present a mixture approach for recognizing robotized spammers by amalgamating local area based highlights with other component classes, specifically metadata-, content-, and connection based highlights. The oddity of the proposed approach lies in the portrayal of clients dependent on their communications with their adherents given that a client can avoid highlights that are identified with his/her own exercises, yet sidestepping those dependent on the devotees is troublesome. Nineteen distinct highlights, including six recently characterized highlights and two re-imagined highlights, are recognized for learning three classifiers, in particular, irregular backwoods, choice tree, and Bayesian organization, on a genuine dataset that involves kind clients and spammers. The separation force of various component classes is additionally broke down, and cooperation and local area based highlights are resolved to be the best for spam identification, while metadata-based highlights are demonstrated to be the most un-successful.

Keyword- Spammers, Metadata

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A Multi Class Image Classification System Using Deep CNN Architecture

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Abstract: In recent years, with the speedy development in the identification of digital content, automatic classification of the images became the most challenging task in the fields of computer vision. Automatic understanding and analysis of images by the system are difficult as compared to human visions. Research has been done to overcome a problem in the existing classification system, but the output was narrowed only to low-level image primitives. However, those approaches lack an accurate classification of images. our system uses a deep learning algorithm to achieve the expected results in the area like computer visions. Our system presents a Convolutional Neural Network (CNN), a machine learning algorithm being used for automatic classification of the images. Our system uses the Caltech-UCSD Birds 200 dataset as a benchmark for the classification of multi-class bird images. The images in the dataset used for training which require more computational power for classification of images. By training the images using the CNN network we obtain the 90 percent accuracy result in the experimental part it shows that our model achieves high accuracy in classification.

Keywords: CNN, Classification, ANN, Deep Learning, Accuracy, Caltech-UCSD Bird 200

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Black Hole Imaging using Chirp Algorithm

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Abstract: Black holes are the most peculiar and enchanted objects that are existing in our universe. It is a region of space where the understanding of the universe is pushed to reach its limits by the extreme condition. Most of the astronomers dreamed about the invention of secret behind a black hole. After the combined effort of a group of scientists, finally the image of a black hole is revealed. In this paper, the technique behind the imaging of a black hole is explained.

Keywords: EHT, VLBI, CHIRP

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Travelling Salesman Problem using Quantum Computer

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Abstract: Quantum computing uses quantum phenomena that are superposition and entanglement to perform computation efficiently. The computers which perform quantum computations are known as quantum computers. Quantum theory is one of the most successful and useful theories that have effected many scientific progress during the twentieth century. It has introduced a new line of scientific thoughts, predicted completely incredible situations and influenced various domains of modern technologies. There are several different ways for expressing laws of science in universal and laws of physics in particular. Similar to the physical laws of nature, information can also be expressed in many different ways. The fact that information can be expressed in different ways without losing its essential nature, leads for the possibility of the automatic manipulation of information.

Here Quantum computing is used to solve a well-known NP-Hard benchmark, the Traveling salesman problem. Here the objective of quantum computer is to find the shorter path made by a salesperson by linking all the available cities by visiting each city only once and returning to the starting place one at the final of his journey.

Keywords: Superposition, entanglement, NP-Hard.

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A Novel Approach for Cyber Security towards Moving Target Defense

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Abstract: Cyber security has become very important in the contemporary era. It is essential to protect critical digital infrastructure of a country or organization. Unlike traditional cryptographic approaches, Moving Target Defense (MTD) is the novel approach that came into existence. It is based on the theory of dynamic defense. MTD ensures that the network being protected becomes very dynamic in configurations and security primitives. It works in such a way that even the attackers will not be able to plan attacks in such dynamically changing network configurations and security primitives. With enhancements in cryptography like triple- DES, there is longer space key that will make attacker difficult to launch attacks and succeed. When DES or AES is used as part of MTD, they provide very strong security that can never be broken. Of late, Tang et al. proposed MTD based solution for high level of security. In this paper, we proposed MTD based solution that is more lightweight and highly secure. An empirical study is made with a prototype networking application. The results revealed that the proposed system shows better performance over the state of the art.

Keywords: Moving target defense, lightweight cryptography, DES, AES

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A Novel Cloud Raid Approach to Detecting and Avoiding Concurrency Bugs in Cloud Systems

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Abstract: A cloud system, also known as cloud computing, is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without the user's direct active management. Log Mining is a methodology for analyzing logs that employ Data Mining. The implementation of the Data Mining methodology for log analysis improves the accuracy of log data analysis. In this way, the analytics approach shifts toward software and automated analytic systems in this paper detect concurrency bugs in cloud systems efficiently and effectively, CLOUDRAID automatically analyses and checks only the message orderings that are likely to reveal errors. CLOUDRAID, in particular, mines logs from previous executions to classify message orderings that are feasible but have not been thoroughly checked. CLOUDRAID was used to evaluate many representative distributed systems, including Hadoop2/Yarn, HBase, HDFS, Cassandra, Zookeeper, and Flink. CLOUDRAID was able to test various implementations of these six systems in 35 hours, discovering 31 concurrency bugs, including nine previously unknown bugs. Three of the nine new vulnerabilities found, all of which have been confirmed by their original developers, are critical and have already been patched.

Keywords: Cloud Raid, Detecting and Avoiding Concurrency Bugs Distributed System, Cloud Systems.

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A Novel Speaker Diarization and Transcription method for Multichannel Audio

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Abstract: In this paper, we are trying to implement a novel speaker Diarization and transcription approach for multi channel audio which is fully supervised, we use an unbounded interleaved-state recurrent neural networks (UISRNN). From input of multiple audio streams , having extracted speaker- distinctive embeddings also referred to as d-vectors, every speaker has been matched by an RNN which is implemented using shared parameters, while the RNN states for various speakers intersperse inside the domain of time. The Chinese restaurant process(ddCRP) has been interspersed into this RNN which is a process dependent on distance to facilitate an undefined amount of speakers. This approach has been made fully supervised to find out from examples in which labels are annotated consistently with timestamps. Our method includes overlapped speech detection and speaker change detection which largely impacts the speakerdiarization process. A DER (Diarization error rate) of 7.2% has been achieved on the NIST SRE 2000 CALLHOME dataset, which is comparatively superior to the existing method which doesn't consider overlapped speech.

Keywords: Speaker Diarization, d-vector embedding, over-lapped speech detection, multi-channel audio, clustering, UIS-RNN, Transcription

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Electric Fuel Level Monitoring Using IoT

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Abstract- Construction companies are, today, beset by numerous challenging issues in trying to carry out civil engineering projects to support growing urban populations around the world. Construction companies and contractors in civil engineering domain rely on heavy construction vehicles and mobile equipment that rely on internal combustion engines that consume copious volumes of fossil fuels in the form of diesel fuel. The price of diesel fuel combined with humongous volumes required to keep heavy construction vehicles as well as transport vehicles in operation, therefore, puts a considerable strain on the resources of a construction firm engaged in construction project requiring extensive resources in the form of both human, equipment, vehicular and machinery. Without an appropriate tracking mechanism to monitor fuel consumption of vehicles such as transitmixers operating at construction site, a construction firm can quickly run up huge fuel bills leadingto operational and financial losses in both short- and long-run. Using Internet-of-Things (IoT), collection of fuel monitoring data followed by real-time analyses at a centralized location, construction companies can easily track movements of construction vehicles embedded with sensordevices. In this paper, we propose a new system that is based on a capacitive sensor that is open source, coupled to a controller embedded in a construction equipment vehicle. The function of thecontroller would be to provide global positioning data over GPRS radio module for data transfer from almost any remote location.

Key Words: Internet-of-Things (IoT), GPR

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A Charging System for Electric Vehicles Usinga Smart Grid Implanted by SMES

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Abstract-Electric vehicle (EV) battery life has a major effect on the growth and popularization of EVs. A method for superconducting magnetic energy storage (SMES) to stabilize the voltage of the EV charging device to enhance battery life and smart grid charging performance is presented. In orderto verify that the controlled SMES enhances the transient stability of the system, the load fluctuation and failure situations and the system compensation capability of the SMES have been investigated. The results obtained from the study show the efficacy of compensating for the immediate voltage dip in the grid and improving the efficiency of the power system.

Keywords- Electric Vehicle, Smart Grid, Stability Voltage, Superconducting Magnetic EnergyStorage (SMES).

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DC/DC Converter Architecture, Modeling and Simulationwith PV Cell Fed Switched Reluctance Engine for Field Agriculture

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Abstract-In several areas, the latest developments in the field of renewable energy sources and electronic power circuits have demonstrated their applicability. In the field of agriculture, water pumping systems are one such application. The use of SRM (Switched Reluctance Motor) fed PV cells has created research interest as they have high efficiency of conversion at low voltage and medium voltage levels, respectively. DC/DC converters are integrated to integrate their characteristics together. This paper provides DC/DC converters with PV cell fed switched reluctance motor for agricultural field design, modelling and simulation. This is specifically applied for the water pumping motor. The simulation is done MATLAB-Simulink Environment. Different DC/DC converters are simulated and their impact is studied with regard to different parameters, such as thenumber of switching devices, smooth and reliable operation.

Keywords: SRM (Switched Reluctance Motor), DC-DC Converter, Zeta Converter

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PROTEUS Design of Temperature Sensor for Induction Motor

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Abstract-This paper deals with PROTEUS design of temperature sensor under different fault condition of induction motor is developed for the users to identify the power failure in houses and industries. Itconsists of power sensor, microcontroller unit, LCD display temperature sensor, voltage sensor. Inthe house! Industries, the microcontroller unit is connected with the power line through sensor. Thestatus of electricity is sensed by the microcontroller. In the time of power failure, the sensor sends signal to the microcontroller. The microcontroller analyses the signal and corresponding signal to the to the LCD display and thus the display displays the status of power in the house or industries.

Keywords- Induction Motor

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A Novel Solution for Finding Islanding in Power System and Control Methods based on Reactive Power Injection and ROCOF

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Abstract-All Distributed generation (DG) units should be equipped with an anti islanding protection (AIP) scheme to keep away from inadvertent islanding. Unfortunately, generally AIP methods fail to identify islanding if the demand in the islanded circuit matches with the generation in the island. Another concern is that numerous dynamic AIP scheme cause power quality issues. This paper proposes an AIP technique which depends on the combination of a reactive power versus frequency droop and rate of change of frequency (ROCOF). The strategy is designed so that the injection of reactive power is of minor scale during ordinary working conditions. However, the strategy can quickly detect islanding which is confirmed by PSCAD/EMTDC simulations.

Keywords-Reactive Power, ROCOF

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Hybrid Power Quality Compensator Interfaced with Fuzzy forHigh-Speed Locomotive Systems

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Abstract-Implementation of fuzzy logic controller in place of classical controller attains good response, low THD values, voltage as feedback for significantly improving the dynamic performance of proposed HPQC module. With increase in traffic and speed railway became one of the major load on supplygrid. AC-DC converters used in locomotive of traction system draws rich harmonics content current results in poor power quality and failure or missed operation of utility causing derating of grid and affect the reliability. A hybrid power quality compensator (HPQC) is proposed for comprehensive compensation under minimum dc operation voltage in high-speed traction power supplies. Reduction in HPQC operation voltage can lead to a decrease in the compensation devicecapacity, power consumptions, and installation cost. It is shown through simulation results that similar compensation performances can be provided by the proposed HPQC with reduced dc-link voltage level compared to the conventional railway power compensator. The co phase traction power supply with proposed HPQC is suitable for high-speed traction applications. In this study, the renewable energy sources are used as the supply to the proposed concept. For the high responseand achieving the fast steady the system can be controlled the proposed concept with the fuzzy logic controller.

Keywords-Co Phase System, Power Quality Compensator, Fuzzy Controller, Reactive Power Compensation, Traction Power, Unbalance Compensation.

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Industrial Power Monitoring System

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Abstract-The purpose of this project is to acquire the remote electrical parameters like voltage, current and frequency and send these real time values over micro controller along with temperature at power station. This project makes use of a microcontroller, as this is a prototype of the proposed project,for demonstration purpose we have used Arduino Uno here. The controller can efficiently communicate with the different sensors being used When we give supply to our prototype all the sensors start sensing the current, voltage, frequency and temperature and update all the real time values shows on the display. It compares all the real time values with the pre-defined values, if anyof the values exceeds pre-defined values it sends a fault alert to the relay and buzzer as well as update it on the display.

Keyword-Monitoring System, Arduino Uno

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Assessment of Technical and Economic Impacts of EV UserBehavior on EV Aggregator Smart Charging

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Abstract-The increase in global electricity consumption has made energy efficiency a priority for governments. Consequently, there has been a focus on the efficient integration of a massive penetration of electric vehicles (EVs) into energy markets. This study presents an assessment of various strategies for EV aggregators. In this analysis, the smart charging methodology proposed in a previous study is considered. The smart charging technique employs charging power rate modulation and considers user preferences. To adopt several strategies, this study simulates the effect of these actions in a case study of a distribution system from the city of Quito, Ecuador. Different actions are simulated, and the EV aggregator costs and technical conditions are evaluated.

Keyword-Electric vehicle (EV), smart grid, aggregator, smart charging, charging power modulation, charging strategies.

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Area Based Electric Line Control

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Abstract-Safety of human life is of a paramount importance. In high current switching system, switch gear protects electrical circuit. Security is the prime concern in our day to day life. Critical electrical accidents to line men are on the rise during electric line repair due to lack of communication and co-ordination between the maintenance staff and the substation staff. However there is need to provide confidence to working engineers during installation work on high voltage installations. To prevent accidental switching on of switch gear by unauthorized workforce, this paper proposed more life security by providing a control to the electric line which strengthen working confidenceand inactivate unauthorized person from hazardous switching of electrical power installation without the notice of field working engineers. This system can also be implemented in many other public areas.

Keyword- High Current, Line Control

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Command Based DC Motor Speed Control

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Abstract-Every system is automated in order to face new challenges in the present day situation. Especially in the field of electronics automated systems are doing better performance. Nowadays, there are lots of good-quality motor speed controls on the market. However, their costs are relatively high.A speed control with both low cost and good performance will be highly marketable, especially for small mobility applications. On the other hand, the wireless connectivity has a nature of low costand less environmental limitations. Combining these ideas together, we came up with this paper.

Keywords- Arduino, PWM, MPMC, IDE, ATMEL

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Remote Control for Smart Grid System Using IoT

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Abstract-Now a day, there is a lot of requirement to control the appliances in an industry or in a home connected to the power grid when we are working with our PC. In these situations we need to goto the place where the power grid has been situated which is a time consuming process. The main aim of the present project is to provide a facility by which we can control all the appliances connected to the power grid like bulbs, fans, TV, fridge, and air cooler etc. through your mobile. The only thing is we need to connect a Wi-Fi to your mobile and a control board to the power control section of home. The Wi-Fi remote receives the commands from the mobile through the serial communication link and is transmitted in to the air. Here the command denotes the on or offconditions of the home appliances. Each and every device connected to the power grid has its ownseparate command for the on and off conditions. The control board which is attached to the power grid control section in the home/industry consists of a Wi-Fi receiver. This receives the commandstransmitted by the transmitter and are given to the microcontroller. The microcontroller plays a major role in receiving the commands from the wifi receiver module and to switch on or off the particular device according to the command.

Keyword- Smart Grid, IoT

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Protection of an Electrical Power Systems in Industries by Using Embedded Technology

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Abstract-Protection of an induction motor (IM) or any other loads against possible problems, such as overvoltage, overcurrent, overload, over temperature, and under voltage, occurring in the course of its operation is very important, because it is used intensively in industry as an actuator. In industries loads can be protected using some components, such as timers, contactors, voltage, andrelays. This method is known as the classical method that is very basic and involves mechanical dynamic parts. Computer and programmable integrated circuit based protection methods have eliminated most of the mechanical components. However, the computer-based protection method requires an analog-to-digital conversion (ADC) card, and the controller-based protection method does not visualize the electrical parameters measured. In this method, the voltages measured by voltage sensor are monitored and warning messages are shown on the LCD.

Keywords – Induction motor, Arduino UNO, Voltage Sensor, Timers, Contactors, Relays LCD, ADC, Proteus simulation, Arduino software, Programming language.

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Hand Movement Based Electric Device Control

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Abstract-Protection of an induction motor (IM) or any other loads against possible problems, such as overvoltage, overcurrent, overload, over temperature, and under voltage, occurring in the course of its operation is very important, because it is used intensively in industry as an actuator. In industries loads can be protected using some components, such as timers, contactors, voltage, andrelays. This method is known as the classical method that is very basic and involves mechanical dynamic parts. Computer and programmable integrated circuit based protection methods have eliminated most of the mechanical components. However, the computer-based protection method requires an analog-to-digital conversion (ADC) card, and the controller-based protection methoddoes not visualize the electrical parameters measured. In this method, the voltages measured by voltage sensor are monitored and warning messages are shown on the LCD.

Keywords – Induction motor, Arduino UNO, Voltage Sensor, timers, contactors, relays LCD, ADC, Proteus simulation, Arduino software, Programming language

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3D Hand Writing Machine

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Abstract-Nowadays more and more individuals are turning to robots to do their work, because robots are more versatile, accurate, and reliable and also reduce human efforts. Robotic arms are programmed robot with similar function of a human arm. Aim of our project is to develop a roboticdevice which helps the person to write. The mechanism is programmed with text recognition system and makes the user to write what he texts in the application. The robotic device is programmed to write down the words that individual writes to the application. To perform the writing operations, the robotic device will be fitted with a pen. It has special capabilities that can be used for increasing shape or structure complexity and fabrication efficiency, while reducing thewaste materials, capital cost and design cycle for manufacturing. It can also make you draw small sketches. It will be a low-cost device that can be programmed. This paper describes the basic design of automated writing arm.

Keywords: Arduino Uno, Microcontroller, Batteries, Servo Motor, Ben Box Software.

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PV GRID-Based Fault Analysis

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Abstract

A new method of current control strategy for grid connected photovoltaic (PV) systems is presented in this paper. The connection of photovoltaic system with the grid is a difficult task as the solar irradiation is a nonlinear quantity. The objective of this work is to develop a model of the photovoltaic system with maximum power point tracking (MPPT) system connected to 11 KV grid by implementing new control technique so that maximum active power transfer from PV to grid can be taken place without injection of harmonics. The considered system consists of a PV system, MPPT controller, boost converter, voltage source inverter (VSI), 3-Φ filter, a control system, a distribution network, load and grid. In the beginning, a model of a photovoltaic array was developed and then a MPPT controller and a direct current to direct current (DC-DC) converter are designed. To connect PV system to grid, a power electronics converter is needed which can convert DC voltage into three- phase AC voltage. Three-phase VSI using insulated gate bipolar transistors (IGBTs) is used. By means of a step-up transformer and filter, this three-phase VSI is connected to the distribution network. The proposed control of the three-phase grid-connected solar PV system is designed in the synchronously-rotating d-q reference frame. Here, Vdc is measured, then compared with Vdcref and accordingly the error is fed to proportional-integral (PI) controller from which Idref is generated. As PV system should inject only active power, so reactive power injected to grid is made zero by making Iqref zero. There after the final model is simulated by using MATLAB/SIMULINK and different output waveforms are analyzed for different conditions. Finally, the fault analysis is carried out to observe the behaviour of the system.

Keywords: PV, MATLAB, MPPT.

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Performance Improvement in Direct Torque ControlledOpen End Winding Induction Motor Drives Using Fuzzy Controller

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Abstract- This work concentrates on effectual direct torque controller based open end winding induction motor with 2-level inverters using 4-level voltages switching in dual mode. Here, direct torque control (DTC) with winding motor drive turns to be an effectual research filed as it shows superior higher performance dynamic and immediate torque control and stator flux. It is considered to be extremely essential for applications like hybrid electric vehicles as they need ripple free torque. DTC may offers variable switching frequency, variable switching, and torque ripple. It anticipatesan effectual voltage switching state using Fuzzy logic for winding motor to diminish flux ripple and torque at various operating frequency. The experimental results demonstrated that the anticipated fuzzy logic approach may diminish the flux ripples and torque devoid of losing featuresusing traditional direct torque control approach and may offers multi-level functionality.

Keywords- Induction Motor, Voltage Switching, Fuzzy Logic, Torque Control, Ripple Flux.

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Wireless Sensor Networks and Building Automation

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Abstract-This paper presents a review on the application of wireless sensor networks in building automation. The building can be monitored and operated without difficulties, from a particular location of the same building wirelessly without practically going to the location for action. ZigBee is the most preferred communication protocol for building automation of small size. WSN based automation of various types of buildings improve the overall safety, security, energy efficiency and comfort ofthe occupants. WSN based building automation results in saving of time, energy and cost of automation. Now a days IoT based building automation is gaining momentum and in future it maybe implemented more frequently.

Keywords- Automation, Building automation, Sensor, Wi-Fi, Wireless sensor networks, ZigBee.

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Optimal Price Estimation in Demand Side Management ofSmart Grid Network

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Abstract-This paper presents a review on the application of wireless sensor networks in building automation.The building can be monitored and operated without difficulties, from a particular location of the same building wirelessly without practically going to the location for action. ZigBee is the most preferred communication protocol for building automation of small size. WSN based automation of various types of buildings improve the overall safety, security, energy efficiency and comfort ofthe occupants. WSN based building automation results in saving of time, energy and cost of automation. Now a days IoT based building automation is gaining momentum and in future it maybe implemented more frequently.

Keywords- Automation, Building automation, Sensor, Wi-Fi, Wireless sensor networks, ZigBee.

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Intelligent System for Air Pollution finding in Vehicles

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Abstract

Air and sound pollution is a growing issue these days. It is necessary to monitor air quality and keep it under control for a better future and healthy living for all. Here we propose an air quality as well as sound pollution monitoring system that allows us to monitor and check live air quality as well as sound pollution in a particular area through IOT. The system uses air sensors to sense the presence of harmful gases/compounds in the air and constantly transmit this data to the microcontroller. Also, the system keeps measuring the sound level and reports it to the online server over IOT. The sensors interact with the microcontroller which processes this data and transmits it over the internet. This allows authorities to monitor air pollution in different areas and take action against it. Also, authorities can keep a watch on the noise pollution near schools, hospitals, and no-honking areas, and if the system detects air quality and noise issues it alerts authorities so they can take measures to control the issue.

Keywords: Air pollution, IOT, Vehicles, Microcontroller, etc.

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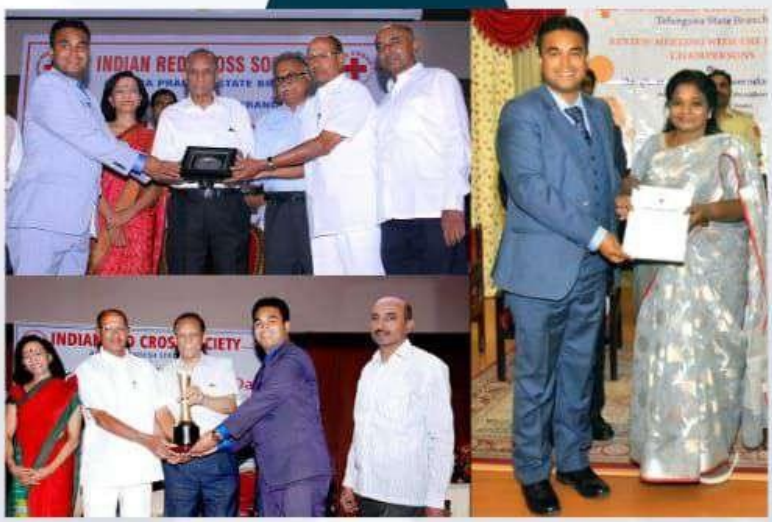
Governor Award (thrice)



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