PAAVAI ENGINEERING COLLEGE

(AUTONOMOUS)

NH-44, Paavai Nagar, Pachal, Namakkal - 637 018.

INNOVATIVE TRENDS IN COMMUNICATION AND TECHNOLOGY

(Emerging Methods towards frontier Technologies)

Proceedings of

National Conference

NCITCT 2022

Department of Electronics and Communication Engineering

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Abstract Proceedings

Organised by

Department of Electronics and Communication Engineering
Paavai Engineering College (Autonomous)
Nh-44, Paavai Nagar, Pachal, Namakkal – 637 018.
Tamil Nadu, India.

in association with

The Institution of Engineers (India)
Salem Local Centre, Salem.

About the Institution

Paavai Engineering College was established by Shri.CA.N.V.Natarajan, Industrious Auditor, illustrious charted accountant, Chairman, in the year 2001, under Pavai Varam Educational Trust aiming at providing education to the underprivileged younger generation especially from rural and remote regions in and around Rasipuram with the awareness on the need for technical education in general and Engineering education, in particular.

Our vision is to be a globally model Institution all set for taking 'lead role' in grooming the younger generation socially responsible and professionally competent to face the challenges ahead. To realize the vision of the Institution, the focus is either past or futuristic action. While Paavai engineering college takes immense pleasure in building the legacy of its part and accustomed to think about future for a greater role to be played in the field of higher education and society at large.

This institute, in nearly two decades of its journey offering quality technical education to the aspirants of the rural area (pachal) has crossed several mile-stones. To name a few accreditation by NAAC, accreditation by NBA and conferment of Autonomy. Paavai Engineering College is an autonomous and self-finance institution and was established in the year 2001. At present the college offers 19 UG programs, 7 PG programmes including MBA/MCA programme and 4 programmes recognised research centres. ECE, EEE, Civil, CSE are NBA accredited programmes. And CSE, IT, EEE, ECE, MBA are permanently affiliated programmes.

- *Paavaisoft Innovation centre,*
- *Infosys Advanced partner Institute,*
- *TVS-Harita Techserv Ltd ,*
- *Recognized as IIT Bombay Resource Centre,*
- *Certified as e- Governance Campus,*
- *Member of ICT Academy of Tamil Nadu,*
- *Paavai Learning Management System (MOODLE),*
- *Texas Instruments Lab,*
- *MSME Incubation Centre,*
- *CNC Vertical Machining Centre,*
- *Centre for foreign language has been established,*
- *Recognised as resource centre for BEC courses,*
- *Zonal centre for Sports.*
- *Entrepreneurship Development Cell / Institution Innovation Council.*

Faculty Development programs are being conducted in association with ISTE, CSI, IE(I), IETE, YI, Industries and academic Institutes, for enhancing their Pedagogical skills, Domain Knowledge and Research Capabilities. Students are continuously getting placed in reputed organizations. Student development programmes are organised regularly to enhance the soft skills and technical of the students. Continuously achieving good position in AICTE-CII ranking framework and obtained platinum status for the past six years. Achieved champions of champion's trophy in Sports among Anna University affiliated colleges for the past six years.

The College is putting sincere efforts to maintain high quality in academics and thereby ensuring continuous learning environment on the campus. Internships through industries are made mandatory for the students which results that Paavai engineering college has received all India level first rank – Best internship record during internship day organised by AICTE and Internshala for the past three consecutive years. Paavai Engineering College has been categorised as Band B Performer (All India Rank between 26th to 50th) in ARIIA – ATAL Ranking of Institution on Innovation achievements. Paavai Engineering College has a strong track record of nurturing the students with rich Indian culture, tradition and vedic values. Intensive Research activities of Paavai Engineering College provide valid practical exposure to the students to undertake their course with confidence about their career and future. The Research and Development is an essential criteria of the college that promotes research culture by making faculty members to apply for more research proposals to various government and non-government agencies.

The industry-Institute collaboration and consultation is focused on student projects and patent publications. Various centres of excellence have been established to promote research activity of the college. PEC has received CII Innovation award and received best Engineering College award from the honourable Minister Thiru V.Senthilbalaji, Minister for Electricity, on Oct 2022 at Coimbatore by one of the India's leading television broadcast network "News 18" Group. Paavai Engineering College has the reputation for high standards of discipline. Paavai Engineering College renders high and noble services to the national cause of improving the ethical, social and economic standards of people, especially people from rural backdrop. Thus Paavai is creating a history by creating professionals of technically competent and socially responsible who are going to be the future pillars of our nation.

About the Department

The department of Electronics and Communication Engineering was established in the year 2001, offering B.E (ECE) and M.E (Communication Systems). The UG programme is thrice accredited by NBA, New Delhi and permanently affiliated to Anna University, Chennai. The department promotes R & D activities in related areas in collaboration with the industries. The department is enriched with state-of-the-art lab equipment in Circuits lab, R&D lab, VLSI lab, Communication systems lab, embedded lab, Networks lab. The faculty members are well-experienced and dedicated towards the up-liftment of the student community. The students are exposed to the practical and industrial aspects of the subjects through laboratory works, Industrial visits and Internship trainings regularly.

About the Conference

NCITCT'22 is the premier forum to enhance and stimulate the national research interaction and collaboration in the field of communication, electronics and information technology. It provides a unified platform for academia, research, government officials, industry experts, development professionals, and students to discuss their recent work and exchange their ideas on tackling the current issues in information & communication technologies

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FORENSICS ACTIVITY LOGGER TO EXTRACT USER ACTIVITY FROM MOBILE DEVICES

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***Abstract*:**

Nowadays, mobile devices have become one of the most popular instruments used by a person on its regular life, mainly due to the importance of their applications. In that context, mobile devices store user's personal information and even more data, becoming a personal tracker for daily activities that provides important information about the user. Derived from this gathering of information, many extraction methods are available to use on mobile devices, with the restrain that each extraction methods only provides isolated information about a specific application or activity. Therefore, the present work proposes a extraction methods that allows investigators to obtain a complete report and timeline of the activities that were performed on the device. This report incorporates the information provided by many sources into a unique set of data. Also, by means of an example, it is presented the operation of the solution, which shows the feasibility in the use of this extraction methods and shows the way in which investigators have to apply the extraction methods.

Keywords: Acquisition, Extract Data, Examination Analysis, Service Provider, Apply Forensics Activity and Filter Data

AN ENERGY EFFICIENT OF DATA TRANSFER BASED ON D2D COMMUNICATION IN 5G NETWORKS

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Abstract:

In secured social interaction, device-to-device (D2D) communication is used to share the content within the base station (BS) coverage and out of BS coverage, due to this traffic burden is reduced. The data transmission scheme for energy-rechargeable mobile devices. Specifically, we not only let a mobile phone help the nearby client devices connect to the internet via its cellular accessing, but also let those clients replenish the mobile hotspot energy via wireless power transfer. We mathematically formulate the mutually beneficial relationship between mobile hotspots and clients into an optimization problem, with the objective of conducting the cooperative wireless data and energy transmission to maximize the system utility. Resorting to methods from combinatory and matching theory, we develop a near optimal solution for many to- one matching when there is a single mobile hotspot and a distributed matching strategy for the general case by considering the nature of data communication and the characteristic of wireless power transfer. UEs can leverage D2D links to transfer files, audios and videos with higher data rates and lower energy than those in conventional cellular channels and automatically device should be energized.

Keywords: wireless data, base station.

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4G TECHNOLOGIES ACHIEVES THE HIGH SPEED DATA AND MINIMIZING THE RADIATION

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Abstract:

Wireless sensor networks (WSN) groups specialized transducers that provide sensing services to devices with limited energy and storage resources. Because replacing or recharging batteries in sensor nodes is nearly impossible, power consumption has emerged as a critical design issue in WSN. Selfish dynamic alert algorithm (SDAA) plays a major role in the identification of the selfish node. Choosing a cluster head will manage the load in the network correctly, thus reducing energy consumption and increasing the lifespan of the server as a cluster head. Concentrate on developing an efficient cluster head selection scheme that rotates the cluster head position among nodes with higher energy levels than others. The presence of selfish nodes is a major issue in Wireless Networks. A selfish node is not transmitting packets and using them for their own benefit, but it hesitates to use personal resources for others. If these events occur within the majority of the network nodes, the network would be interrupted. Selfish detection is a necessary condition in a wireless network. We described an effective method for detecting the selfish node. A path selection criterion is built under the distributed node-selfishness management to pick the most efficient and shortest path in terms of RNs'. The algorithm considers initial energy, residual energy and an optimum value of cluster heads to select the next group of cluster heads for the network that suits applications such as environmental monitoring, smart cities, and systems.

Keywords:

ADVANCED SMART WALKING STICK FOR VISUALLY IMPAIRED AND PERSONALISED MONITORING SYSTEM FOR MENTAL HEALTH CARE

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***Abstract*:**

Advanced blind stick that allows visually challenged people to navigate easily. The blind stick is integrated with ultrasonic sensors to detect obstacles ahead using ultrasonic waves. The blind stick sense data through the sensor and send it to the microcontroller to processes the data. If any of the obstacle is near to the blind stick, it alerts the impaired person through sounding buzzer. This also consist of light sensing feature to signals the blind person if there is light or darkness, so that they can know about the environment. If the stick is lost, they can identify the stick through voice recognition in smart phone. It also consists of GPS tracking system which is used to track the person and the GSM attached to the blind stick shares information with location. Along with detect sensing in stick, there is one more feature that is a mobile mental health monitoring system. The system helps continuously monitor the parameter through GSR sensor, Pulse sensor and Temperature sensor. Changes in these parameters indicate whether the person is in annoyance or relaxed state. The system mainly consists of a wearable wireless multi-sensor handle positioning, a permanent data storage unit (cloud database), and a user interface (web page). The system is helpful to detect the mental state of the visually impaired person. If they are in annoyance state, this stick is used to send message to the well-wisher along with the location. So that the other person can easily find out the visually impaired person. Thus, Advanced Walking Stick provides privacy to the blind people with care.

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keywords: Blind Stick, Ultrasonic Sensor, Pulse sensor, Temperature Sensor, GPS, GSM, GSR Sensor and ATMEGA328PAVR Microcontroller

REVIEW ON INDOOR POSITIONING SYSTEM

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***Abstract*:**

Indoor Positioning has been an essential feature to detect objects or persons indoor and it is used in healthcare organizations to position the person indoors and help them with their locations and companies for tracking their assets. The authors proposed several machine learning algorithms to overcome the drawbacks of accuracy in existing systems. In this paper, we review various indoor positioning systems to examine the performance issues and algorithms used to implement this system. The proposed algorithms and current technologies of Indoor Positioning system are reviewed and classified to enhance the performance of this system.

Keywords: *Indoor Positioning, Machine learning Algorithms, Asset Tracking, Performance.*

MOBILE COMMUNICATION

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***Abstract*:**

Mobile positioning technology has end up an important region of research, for emergency in addition to for business offerings. Mobile positioning in cell networks will offer numerous services which includes, locating stolen mobiles, emergency calls, extraordinary billing tariffs depending on in which the call is originated, and methods to predict the consumer movement inside a vicinity. The evolution to location-based services and packages in wi-fi structures keeps to require the development of extra correct and dependable cellular positioning technology. The major assignment to accurate location estimation is in creating techniques that yield acceptable performance when the direct route from the transmitter to the receiver is intermittently blocked. This is the Non-Line-Of-Sight (NLOS) hassle, and it is known to be a prime source of errors since it systematically causes cellular to seem farther far from the base station (BS) than it clearly is, thereby increasing the site blunders. In this paper, we present method for mobile cell phone tracking and positioning with high accuracy. Through this we will discuss some technology used for cell positioning and tracking. This paper additionally revels about the IS-95CDMA radio channel that is deployed global, and offer high velocity packet cellular communication .The paper wraps off the method that solves each the placement monitoring and international localization problems, so that mobile terminal localization will be achieved in case of GPS outage or maybe without any GPS information at all respectively.

Keywords: wi-fi structures, CDMA, radio channel.

ISBN: 978-93-94412-02-6

REVOLUTION IN TELECOMMUNICATION

Praveen Kumar.S.Y[1], Siva Ranjani.R[2], Sahith Kaja Khan.M[3], Ponsethuraj.P[4]
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Tamil Nadu, India.

Abstract:

The objective of this paper is comprehensive study related to 5G technology of mobile communication. Existing research work in mobile communication is related to 5G technology. In 5G, researches are related to the development of World Wide Wireless Web (WWWW), Dynamic Adhoc Wireless Networks (DAWN) and Real Wireless Communication. The most important technologies for 5G technologies are 802.11 Wireless Local Area Networks (WLAN) and 802.16 Wireless Metropolitan Area Networks (WMAN), Ad-hoc Wireless Personal Area Network (WPAN) and Wireless networks for digital communication. 4G technology will include several standards under a common umbrella, similar to 3G, but with IEEE 802.xx wireless mobile networks integrated from the commencement. The major contribution of this paper is the key provisions of 5G (Fifth Generation) technology of mobile communication, which is seen as consumer oriented. In 5G technology, the mobile consumer has given utmost priority compared to others. 5G Technology stands for 5th Generation Mobile Technology. 5G technology is to make use of mobile phones within very high bandwidth. The consumer never experienced the utmost valued technology as 5G.The 5G technologies include all types of advanced features which make 5G technology most dominant technology in near future.

Keywords: *WLAN, 5G, GSM, WWWW, WMAN, DAWN.*

5G TECHNOLOGY OF MOBILE COMMUNICATION

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***Abstract*:**

The objective of this paper is comprehensive study related to 5G technology of mobile communication. Existing research work in mobile communication is related to 5G technology. In 5G, research is related to the development of World Wide Wireless Web (WWWW), Dynamic Ad Hoc Wireless Networks (DAWN) and Real Wireless Communication. The most important technologies for 5G technologies are 802.11 Wireless Local Area Networks (WLAN) and 802.16 Wireless Metropolitan Area Networks (WMAN), Ad-hoc Wireless Personal Area Network (WPAN) and Wireless networks for digital communication. 4G technology will include several standards under a common umbrella, similar to 3G, but with IEEE 802.xx wireless mobile networks integrated from the commencement. The major contribution of this paper is the key provisions of 5G (Fifth Generation) technology of mobile communication, which is seen as consumer oriented. In 5G technology, the mobile consumer has given utmost priority compared to others. 5G Technology stands for 5th Generation Mobile Technology. 5G technology is to make use of mobile phones within very high bandwidth. The consumer never experienced the utmost valued technology as 5G.The 5G technologies include all types of advanced features which make 5G technology the most dominant technology in near future.

Keywords: World Wide Wireless Web, Dynamic Ad Hoc Wireless Networks, Wireless Metropolitan Area Networks.

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AN OPTIMIZATION OF POWER QUALITY IMPROVEMENT USING DVR AND D-STATCOM IN SHIPBOARD NETWORK

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***Abstract*:**

Now a days the power quality improvement is becoming very complicate due variations of increasing number of electrical loads used for household and industrial purpose. Power quality illustrates the strength of electric power to consumer devices i.e. Synchronization of the voltage frequency and phase allow electrical system to function without any significant loss in performance. In modern power electronics technology onboard shipboard power systems (SPSs), Sag/swell has become one of the main concerns like harmonic contamination. Moreover, the SPSs are characterized by heavy pulsed loads, which can draw a large amount of power in a short duration, which usually causes a voltage drop. If the latter exceeds the norms, a voltage collapse might occur and leads to the blackout of the ship. The contribution of this system is to propose a combined topology, which consists of Dynamic Voltage Restorer (DVR) and DSTATCOM (Distributed Static Compensator) to overcome the deficiencies of the SPS. Based on the Model Predictive Control (NMPC) technique, and Metaheuristic algorithms, the conditioners guesstimates the power quality issues of the system and counter them, while the DVR and DSTATCOM are designed to act as a low-pass filter and a reactive power compensator to enhance the stability and reduce th distortion of the voltage. The modeling and control of the proposed topology are presented.

Keywords:

PROACTIVE EAVESDROPPING JAMMING FOR HIGHLY SECURED FILES

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Abstract:

To improve the world's security, it is very need to detect the suspicious communication links to prevent criminal works and some other secured system hacking activities. It is important to confirm the eavesdropping channel capacity higher than the data rate of suspicious users in the channel. It's operated by either eavesdropping or jamming modes. Eavesdropping nodes send data from suspicious users to the central monitors, while jamming nodes send the jamming signal to control the data rates of suspicious users. We can select the effective mode selection and send power of each intermediate to achieve maximum eavesdropping rate. Two things are analysed like which intermediate nodes communicate with the central monitors through wired or wireless connection. It is globally optimize for joint mode selection and send power optimization problems. We also proposed low complexity methods which achieve near optimal activity with reduced computational complexity. The more number of results validate the efficiency of our proposed algorithms.

Keywords: Suspicious communication links, eavesdropping, jamming.

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ENCHANCED BANDWIDTH OF THE HAL AMCA AIRCRAFT BY USING 6 CHANNEL TRANSMITTER

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[1,2,3]Dr NGP Institute of Technology, Coimbatore

Abstract:

This paper aims at increasing the bandwidth of the AMCA. The HAL AMCA is the one of the key components of Indian military industries. In the previous generations of the aircraft, it has a very poor control systems and low range of bandwidth by using 4 channel transmitters Avionic Full-Duplex Switched Ethernet (AFDX) technique that exploits traffic phase shifting (TPS) and buffering system to significantly improve channel utilization. So, to overcome this the proposed method implement 6 channel transmitters in Micro patch antenna techniques. In which the traffic phase shifting allows different traffic flows that have a wide range of the bandwidth by time shifting their packet release where time and granularity of bandwidth assignment is increased.

Keywords: HAL AMCA, Avionic Full-Duplex Switched Ethernet, traffic phase shifting.

5G TECHNOLOGY OF MOBILE COMMUNICATION

Priyanka S[1], Meera.V[2], Deepika.V[3], Govardhinisri.B[4]

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Sathyamangalam, Tamil Nadu, India.

Abstract:

The objective of this paper is comprehensive study related to 5G technology of mobile communication. Existing research work in mobile communication is related to 5G technology. In 5G, research is related to the development of World Wide Wireless Web (WWWW), Dynamic Ad Hoc Wireless Networks (DAWN) and Real Wireless Communication. The most important technologies for 5G technologies are 802.11 Wireless Local Area Networks (WLAN) and 802.16 Wireless Metropolitan Area Networks (WMAN), Ad-hoc Wireless Personal Area Network (WPAN) and Wireless networks for digital communication. 4G technology will include several standards under a common umbrella, similar to 3G, but with IEEE 802.xxwireless mobile networks integrated from the commencement. The major contribution of this paper is the key provisions of 5G (Fifth Generation) technology of mobile communication, which is seen as consumer oriented. In 5G technology, the mobile consumer has given utmost priority compared to others.5G Technology stands for 5th Generation Mobile Technology. 5G technology is to make use of mobile phones within very high bandwidth. The consumer never experienced the utmost valued technology as 5G.The 5G technologies include all types of advanced features which make 5G technology the most dominant technology in near future.

Keywords: World Wide Wireless Web, Dynamic Ad Hoc Wireless Networks and Real Wireless Communication, Wireless Metropolitan Area Networks.

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ONLINE MUNICIPAL SERVICES

Dr.Mr.V.Srithar[1],S.Jeevitha[2],R.Manjula[3],N.Karishma Beevi[4]
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Abstract:

A municipal is an administrative entity composed of a clearly defined territory and its population and commonly denotes a city, town or village or a small grouping of them. A municipality is typically governed by a mayor and a city council or municipal council. The notion of municipality includes townships but is not restricted to them. A municipality is a general purpose district, as opposed to a special purpose district. The online municipal services can provide all type of certificates and all taxes. The governance may be described as the process by which society steers itself. In this process, the interactions among the State, Private Enterprise and Civil Society are being increasingly conditioned and modified through the influence of information and communication technologies (ICTs), constituting the phenomenon of e-Governance. This website used any process in start via notification in mobile. So, the normal all people easy analysed. The Architecture includes Loosely-Coupled modules organized in three distinct layers: User Interaction, Middleware and Web Services. User friendly and easy access to common citizen .The model has been applied to a use case scenario in e-Government and the results of a system prototype have been reported to demonstrate some relevant features of the proposed approach.

Keywords: e-Governance, Information and Communication Technologies.

MOBILE TRACKING SYSTEM

Dr. R Sudhakar[1], A. Gnaneswar[2], M.Eekshitha[3]

Abstract:

Now- a-days we can see anywhere in the world every person is user of Smart mobile Phones. Sometimes most of person lost their mobile phones. So, we are designing a new system to world Such that we track the mobile easily. This application is the idea to find a lost device. This application is used to report the location of the device. One of the notable features of communication is to find the location of the person. There are many location technologies which can be used and implemented by telecommunication members. The technologies like GPS, Wi-Fi with android operating system. Locations can also be searched without GPS like using Bluetooth low energy (BLE), but it can be done only in short range. There is another technology introduced by Google called “Find my Device,” but it requires mobile data/Network and GPS location. Our idea is designing a new System such that it requires only GPS location like how Emergency Services works. Emergency Services does not require any Network to make call. Our idea is simple like those services.

Keywords: telecommunication members, Bluetooth low energy.

ISBN: 978-93-94412-02-6

WIRELESS SENSOR NETWORK

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***Abstract*:**

Over the past two decades, Wireless Sensor Networks (WSNs) and their applications have been the topic of many studies. WSN is a network responsible for collecting, processing and distributing wireless data to the intended database storage center. Because these sensors are usually installed at remote sites, despite the recent advances in the WSN technology, its applications still face significant challenges. The main concerns facing WSNs are security, privacy, limitations in processing and energy, and reliability. Out of these, network security threats, network architecture, data collection, deployment and network coverage rise as the major concerns. Therefore, these five issues have been well studied in the literature. The main purpose of this paper is to detail these issues and elaborate on possible solutions.

***Keywords*:** Component, formatting, style, styling, insert.

AUTOMATED BLOOD WARMER SYSTEM

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Abstract:

Automatic blood warmer system is advanced due to clinical emergency of hypothermia. Hypothermia is prompted because of prolonged publicity of very cold temperature. While exposed to bloodless temperature our frame will lose warmth than it produces. So, the basic treatment of hypothermia is blood transfusion. The blood must be warmer before transfusion. The patient who is suffering from hypothermia, should bring their body temperature back to normal temperature. In lots of regions they positioned blood bag into warm water and positioned the blood bag underneath jogging water which is risky and useless. Despite the fact that green blood hotter system is to be had they're highly expensive and a few medical institutions cannot able to manage to pay for. To prevent the complete above stated problem the cost green and low-priced blood warmer is developed. The principle advantage of this blood warmer system is automatic operating of heating coil.

Keywords: *blood warmer, heating coil, cold temperature, blood transfusion, hypothermia, cost Efficient*

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SENSING AND TRACKING OF A MOVING OBJECT

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Abstract:

Because of the nature of its open medium, wireless positioning is vulnerable to malicious attacks. Based on a probabilistic inclusive disjunction model, this study proposes an attack-resistance localization algorithm. This model reduces the importance of an attacked observation during the localization process, resulting in more robust location estimations under security threats. This study included experiments carried out in a real-world Wi-Fi network. Under various RSS attacks, experimental results show that this approach appears to achieve more robust estimation than cluster-based, median-based, and sensor-selection methods. We propose a novel attack-resistant localization algorithm that is based on a dynamic, probabilistic model of the current attack situation. This study included experiments conducted in an actual Wi-Fi network to evaluate the effectiveness of the proposed attack-resistant localization algorithm. We examined three different data sets and discovered that machine-learning-based detectors outperformed traditional signature-based detectors. In all cases, the amount of data could be significantly reduced.

HOLOGRAPHIC IMPARTING SYSTEM OF AR AND VR TECHNOLOGIES

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Abstract:

An image created by a lens is not what makes up a hologram; rather, it is a photographic recording of a light field. When viewed under diffuse ambient light, the holographic medium, such as the item created by a holographic process (which is sometimes referred to as a hologram), is typically in comprehensible. We demonstrate an integrated capture, hologram production, transmission, and display system for three-dimensional communication in real time. A structured light camera and a light field camera both take pictures of the point cloud of a 3D scene. The layer-based angular method is used to calculate phase-only computer-generated holograms. The spectral approach is based on shaded and depth images that have been produced. A dynamic 4K liquid crystal spatial light modulator enables the dynamic reconstruction of phase-only holograms and 20 frames per second .The 5G network is capable of meeting the realized latency of 0.1 s. We propose that such a system is a hypothetical metaverse answer to telepresence.

***Keywords*:** Holography, Computer, Generated, Reconstruction, Metaverse.

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VIRTUAL MOUSE – 3.0

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Abstract:

Automation is a term for technology applications where human input is minimized. Here, Smart Automation is the main Domain of Virtual Mouse. We have proposed a project which aims to be a virtual mouse and also has additional advantage that it have features of a mouse incorporated into it. The proposed AI Deep Learning Virtual Mouse system is based on the frames that have been captured by the Webcam in a laptop or PC. By using the python computer vision library OpenCV the video capture object is created and the Webcam will start capturing video. It can be used to reduce the space for using the physical mouse, and it can be used in situations where we cannot use the physical mouse. The system eliminates the usage of devices, and it improves the human-computer interaction. As technology increases everything became virtualized such as speech recognition. Speech recognition can replace keyboard in future. Similarly, our hand gesture which controls the cursor can replace mouse in the future.

Keywords: Virtual Mouse, Webcam.

AUGMENTED REALITY FOR MONUMENTS

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Abstract:

The young generation is moving faster with the force of the Western Culture by vanishing the traditional and prestigious Indian Culture and tradition. In this modern era, no one is interested in learning and following the traditional things and Learning about the monuments, historical places, etc. The prehistoric sculptures and memorials show that they have followed more moral, spiritual, medicinal, scientific things. Currently, the younger generation doesn't care about the tradition if it continues the whole Indian tradition will vanish. This is the moment to use current technologies to reconstruct history using Augmented Reality. An app that utilizes technology and information to tell the narrative of a specific historic place in India, including its history, context, and significance, so that users may appreciate its value. It's an interactive augmented reality travel app that allows visitors to learn about India's cultural heritage. Everything will be shown in AR animated style as well as in an infographic in our proposal. The user only needs to scan and begin researching the historical items. Object detection will be used as the backend framework to scan the buildings. The app has an augmented reality layer that allows users to interact with a specific portion of the monument by recreating various scenarios. This is done in order to motivate people's interest in learning and make it more enjoyable. The final outcome will be the immersive AR-based app to showcase Historical animated things and Infographics.

Keywords: Augmented Reality, cultural heritage and Infographics.

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VBS (VIRTUAL BRAIN STORM)

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Abstract:

The human brain is God's most priceless creation. Due to his brain, the man is referred to as intelligent. However, when the body is destroyed after death, we lose the knowledge of the brain. The virtual brain research will look for clues about how people remember and think. The primary goal is to upload and store private information from human brains on the cloud. The man's brain will function as the virtual brain website once his body has died. These models will provide insight into memory retrieval and storage. This may shed light on a variety of fascinating brain functions, including memory capacity, memory shape, and memory loss. There are two primary modules in this project. Notification-aware module is a memory module. With the use of a PC or mobile device, we can store our intelligence and secrets through this website. After someone passes away, we can still use their secrets.

Keywords: virtual brain, Intelligent network.

NFTs, THEIR CHALLENGES AND POTENTIAL

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Abstract:

NFTs or non-fungible tokens are a signature or a record with unique identification codes of a particular digital asset in a blockchain. It is non fungible which means one NFT cannot be replaced by other. They have raised in popularity since 2021. Recently NFTs are seen only as great investment platform. In this paper, we investigate the immense potential they hold in having digital identities, securing health records, finance and effective trading. As its challenges such as uncertainty in determining the price of a NFT, availability of Ethereum, the clear ownership of a NFT before selling it are in the way, we investigate the ways to reach its potential and not only be an investing platform in the long run.

Keywords: NFTs, Blockchain, Etherium, Ownership.

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NON-TRANSFERABLE NFT USING WEB3.0 TECHNOLOGY

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Abstract:

Web3 today revolves around transferable, financial zed assets, instead of encoding social connections of trust. However many core economies such as uncollateralized lending and building individual brands are based on persistent, non-transferable relationships. In this paper, how non-transferable "soul bound" tokens (SBTs) representing the commitments, certifications, and aliations of "Soul" can encode the trusted network of the real economy to establish provenance and reputation. More importantly, SBTs enable other applications to increase ambition, such as community wallet recovery, Sybil-resistant governance, a mechanism for decentralization, and novel business sectors with decomposable, shared rights. We refer to this more extravagant, pluralistic environment as "Decentralized Society" (DeSoc) — a co-decided sociality, where Souls and networks meet up base up, as developing properties of one another to co-make plural organization merchandise and insights, at a scope of scales. Key to this sociality is decomposable property privileges and improved administration instruments —, for example, quadratic financing limited by relationship scores — that award trust and collaboration while shielding networks from catch, extraction, and mastery. With such expanded sociality, web3 can shun the present hyper-financialization for a more extraordinary, pluralist eventual fate of expanding returns across friendly distances.

Keywords: NFTs, SBT Token, SBT wallet, Web 3.0, Block chain.

THE FPGA IMPLEMENTATION OF PULSE WIDTH MODULATION

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Abstract:

The objective of this research work is the generation and implementation of Pulse width modulation (PWM) and Sinusoidal Pulse width Modulation (SPWM). At first, the analysis of PWM generation for low frequency applications is presented. PWM can be generated using FPGA, Microcontroller, Microprocessors and DSP Processors. Higher density programmable logic devices such as FPGAs can be used to integrate large amounts of logic into a single IC. Pulse width modulation (PWM) is widely used in power converter control. The PWM is generated by using Comparator, Counter and Delay unit. Comparator PWM consumes more area and power than the Counter and delay PWM. Counter PWM is used for high frequency applications. Both methods consumes more area and power consumption. So Delay PWM is introduced to reduce the area and power than the existing methods.

Keywords: Pulse width modulation, Sinusoidal Pulse width Modulation, Comparator.

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LOW-POWER AND DELAY EFFICIENT AOI AND OAI BASED CARRY SKIP ADDER FOR HIGH PERFORMING COMPUTATION

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Abstract:

This paper presents a low complexity carry-skip adder design that provides high-speed and consumes low-power compared with conventional CKA and making it suitable for the development of high-performance signal processing cores. Here, the critical path of ripple carry adder (RCA)-based new carry skip adder is analyzed to find the possibilities for delay minimization. Based on the findings of the analysis, the new logic formulation and the corresponding design of RCA are modified for the CKA. In addition, instead of utilizing AND-OR logic, the proposed structure makes use of AND-OR-Invert (AOI) and OR-AND-Invert (OAI) compound gates for full adder and skip logic. The proposed architectures are coded in Verilog HDL and synthesized using Xilinx and CMOS library. Synthesis results exhibit that the proposed 32-bit carry skip adder reduces the delay and area by 40.91% and 7.96% respectively, the comparison result shows that the modified RCA design offers better efficiency in terms of area, delay and energy than the existing RCA.

Keywords: Carry-Skip adder, Low-power, High-speed, Computing architecture, Logic complexity.

4 BIT COUNTER IC USING VLSI DESIGN

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Abstract:

In this modern world digital electronics and VLSI (Very large scale integration) design plays a major role. Designing IC's though VLSI has now gone through MEMS (Micro electro mechanical system). In this modern era counters and counter related circuits does a major job. So we have designed a 4 Bit ripple carry counter IC. 4 bit ripple carry counter is constructed using D-Flip Flops and altered as T-Flip Flips. It is used in various applications like counters, time measurements, frequency drivers, time delays and square wave generations. In this first flip flop circuit is triggered by external clock pulse and the other flip flop in the system takes the clock pulse from output of the first flip flop. The 4 bit ripple carry counter IC which we have constructed using SMD (surface mount device) components which has 93 SMD resistor of size (0603) and SMD transistors of 76 numbers .In that each Bit is connected in a cascade manner and all the flip flops are in toggle mode. The clock is negative edge triggered so the counter will act as an up counter because the clock is negative edge triggered. Counters are used very frequently to divide clock frequencies and their uses mainly involve digital clocks and in multiplexing. The widely known example of the counter is parallel to serial data conversion logic.

Keywords: VLSI design, Flip Flops, Digital electronics, Clock pulse, Frequency.

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LOW-POWER AND DELAY EFFICIENT AOI AND OAI BASED CARRY SKIP ADDER FOR HIGH PERFORMING COMPUTATION

M .Rajarajan[1], G.Suji[2], M .Akshaya[3], R .Prabu[4],
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Abstract:

This paper presents a low complexity carry-skip adder design that provides high-speed and consumes low-power compared with conventional CKA and making it suitable for the development of high-performance signal processing cores. Here, the critical path of ripple carry adder (RCA)-based new carry skip adder is analysed to find the possibilities for delay minimisation. Based on the findings of the analysis, the new logic formulation and the corresponding design of RCA are modified for the CKA. In addition, instead of utilizing AND-OR logic, the proposed structure makes use of AND-OR-Invert (AOI) and OR-AND-Invert (OAI) compound gates for full adder and skip logic. The proposed architectures are coded in Verilog HDL and synthesized using Xilinx and CMOS library. Synthesis results exhibit that the proposed 32-bit carry skip adder reduces the delay and area by 40.91% and 7.96% respectively, the comparison result shows that the modified RCA design offers better efficiency in terms of area, delay and energy than the existing RCA.

Key words: Carry-Skip adder, Low-power, High-speed, Computing architecture, Logic complexity.

UPDATE AUTOMATIC ATTENDANCE THROUGH FACE RECOGNITION USING MACHINE LEARNING ALGORITHMS

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Abstract:

The face recognition in present day is the pivot role. We are proposed an automated student attendance method based on face identification. A face recognition method is very useful in life applications, especially in security control systems. The airport protection system uses face recognition to identify suspects and uses of face recognition for criminal investigations. In our proposed system, video framing is performed by activating the camera through interface. In our proposed approach, the enhanced local binary pattern outperforms the original LBP by reducing the illumination effect and increasing the recognition rate. Next, the features extracted from the test images are compared with the features extracted from the training images. The facial images are then classified and identified based on the efficient results obtained from the combination of algorithm, enhanced LBP, and PCA. Finally, the attendance of the recognized student will be marked and saved in the excel file. The student who is not registered will also be able to register on the spot and notifications be given if students sign in more than once. The average accuracy of recognition is 100 % for good-quality images, and 94.12 % for low-quality images.

Keywords: *Face Recognition System, Features Extraction System, Contrast-limited adaptive Histogram Equalization, Enhanced Local Binary Pattern (LBP), Principal Component Analysis (PCA).*

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DETECTING ELEPHANTS USING THERMAL IMAGE PROCESSING

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Abstract:

Object detection techniques are used in a variety of disciplines, including military, security, and medicine. This study uses the ImageNet Tensor Flow computer vision approach to locate elephants near forest borders. In this case, ultrasound is mostly used to scare the elephants. Ultrasound is itself described as vibrations from the same physical components as noises but fundamentally transforms the variety of human hearing. We use an ultrasonic generator as the sound system. The primary advantage of the state is that, despite other factors, it only performs when an elephant is detected. Both people and animals are unaffected by the advancements in science and technology. A camera system already existed with the Device. Furthermore, the problems and applicability of object monitoring systems are examined.

Keywords-Elephant detection, Image processing, Ultrasound, Infrared, Sensors

GRAYSCALE INVARIANCE IN AN IMAGE WITH REVERSIBLE DATA HIDING

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Mr. D. Mahabub Hussain[4].
[1]Assistant Professor, Department of Computer Science and Applications, [2,3,4]Master of Computer Applications
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***Abstract*:**

Different from all the previous reversible data hiding schemes, a completely novel one for the color image is proposed, which reversibly embeds messages into the color host image without modifying its corresponding gray version. The property of grayscale invariance is valuable, because many applications and image processing algorithms for color images are based on the corresponding gray versions, such as black and white printing, producing reading materials for color blind people, single-channel image processing, and so on. Thus, in terms of these applications and image processing algorithms, the presented scheme will make the generated color marked image be free for its further uses. In this paper, the unchanged gray version is utilized efficiently in both the embedding processes and the extracting processes. Messages are embedded into the red and blue channels of color image, and then the green channel is adjusted adaptively to remove the offsets from the gray version caused by modifying its red and blue channels. To return the adjusted green channel, error correcting bits guaranteeing the reversibility are regarded as one part of payloads to be recursively embedded. Therefore, the reversibility and the property of grayscale invariance are both achieved.

Keywords: Grayscale Invariance, Error Correcting Bits.

ISBN: 978-93-94412-02-6

FACIAL RECOGNITION USING DEEP LEARNING

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Abstract:

One element of biometric technologies that is quickly growing and finding widespread use is face recognition. It has a wide range of uses, including solutions for industry efficiency and monitoring as well as law enforcement and consumer applications. Research attention has recently been focused primarily on the development of increasingly deep neural networks designed for all aspects of face recognition tasks, ranging from detection and preprocessing to feature representation and classification in verification and identification solutions. This is due to the recent introduction of reasonably priced, powerful GPUs and the creation of enormous face databases. Real-time, accurate face recognition is still difficult to achieve, despite these advancements, largely because Deep Convolution Neural Networks (DCNN) have a high processing cost and it is necessary to balance accuracy demands with time and resource limitations. We have integrated facial recognition in our project.

Keywords: Face recognition, neural network, Blockchain.

SKIN DISEASE DETECTION METHOD USING IMAGE PROCESSING AND MACHINE LEARNING

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[1]Assistant Professor. [1,2,3,4,5]Karpagam Academy Of Higher Education, Coimbatore.

***Abstract*:**

Skin diseases are more common than other diseases. Skin diseases can be caused by fungal infection, bacteria, allergies or viruses, etc. Advances in lasers and photonics-based medical technologies have made it much faster and more accurate to diagnose skin diseases. But the cost of such a diagnosis is still limited and very expensive. Thus, image processing techniques help to build an automated screening system for dermatology at an early stage. Feature extraction plays a key role in skin disease classification. Computer vision plays a role in the detection of skin diseases in various techniques. Because of the deserts and hot weather, skin diseases are common in Saudi Arabia. This work contributes to skin disease detection research. We proposed a method based on image processing for the detection of skin diseases. This method takes a digital image of the skin area with the disease effect and then uses image analysis to identify the type of disease. Our proposed approach is simple, fast, and does not require expensive equipment other than a camera and a computer. This approach works on color image inputs. Then resize the image and extract features using a pre-trained convolutional neural network. After this classified feature using Multiclass SVM. Finally, the results are displayed to the user, including disease type, spread and severity. The system successfully detects 3 different types of skin diseases with 100% accuracy.

Keywords: Feature extraction, fungal infection and automated screening system.

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A REVIEW ON VISUALIZATION OF EYE DEFECTS

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Abstract:

Human eye is like a camera. Our eye has an ability to focus the light ray on our retina. Such ability is known as power of accommodation. People who lack this defect are said to have eye defects. Illumination is a process where casting of peripheral light rays upon a microscopical object for diagnosis purposes are carried out. Illumination can be done directly or indirectly by direct focal, specular reflection, tangential and indirect proximal, retro illumination, sclerotic scatter methods. This paper discusses on testing, diagnosis, implementation of techniques that would treat the defects, and complications. Although many techniques were developed vigorously from the late 1990's,In this paper some advanced techniques like SBK advanced LASIK, idesign Lasik, LenSX laser cataract surgery, multifocal and toric IOL implants and ICL laser treatment for glaucoma are discussed.

Keywords: SBK advanced Lasik, idesign Lasik, IOL implants, ICL treatment.

DETECTING ELEPHANT USING THERMAL IMAGE PROCESSING

Janani D[1], Nithya shree R[2], Vishaal M[3], Shwetha S[4]

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Abstract:

Object detection techniques are used in a variety of disciplines, including military, security, and medicine. In this study, the ImageNet Tensor Flow computer vision approach is utilized to locate elephants near forest borders. Ultrasound, which itself is described as vibrations from same physical aspects as sounds but with fundamentally transform the variety of human hearing, is mostly utilized to startle the elephants in this scenario. As the sound system, we employ an ultrasonic generator. The state's main benefit is that it only works when it detects an elephant, regardless of other factors. Both people and animals are unaffected by the advancements in science and technology. With the Device, which would be the equipment utilized, a camera system camera was already in existence. Further, Object monitoring systems are discussed in terms of their problems and applicability.

Keywords: Image net tensor, ultrasound, ultrasonic generator, camera system

ISBN: 978-93-94412-02-6

ACCURATE IDENTIFICATION OF UNAUTHORIZED ENTERIES IN AIR FORCE STATION IN FACE CLASSIFICATION AND FACE VERIFICATION USING EIGEN FACES ALGORITHM AND MINUTIAE BASED ALGORITHM

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Vallam, Thanjavur - 613403, Tamil Nadu, India.

Abstract:

The key goal of this research is to discover the culprits in a short period of time. It assists the police in solving crimes by accurately identifying criminals based on their facial images and fingerprints utilizing the Eigen faces Algorithm (for face recognition), a minutiae-based algorithm (for fingerprint authentication). Police will use Face Image Capture to locate criminals with phoney passports and compare it to Face Images of existing offenders. If a match is established, we will know who the perpetrator is and will be able to swiftly apprehend that person. This procedure is particularly effective since a person's facial characteristics do not alter. It is superior to other measures of identification, such as hair colour or style, weight, or eye colour, which may be altered.

Keywords: Minutiae-Based Algorithm, fingerprint authentication.

WEARABLE VIBRATION BASED COMPUTER INTERACTION AND COMMUNICATION SYSTEM FOR DEAF

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Department of Computer Science and Engineering, Bannari Amman Institute of Technology.

Abstract:

In individuals with impaired hearing, determining the direction of sound is a significant problem. The direction of sound was determined in this study, which allowed hearing impaired individuals to perceive where sounds originated. This study also determined whether something was being spoken loudly near the hearing impaired individual. In this manner, it was intended that they should be able to recognize panic conditions more quickly. The developed wearable system has four microphone inlets, two vibration motor outlets, and four Light Emitting Diode (LED) outlets. The vibration of motors placed on the right and left fingertips permits the indication of the direction of sound through specific vibration frequencies. This study applies the ReliefF feature selection method to evaluate every feature in comparison to other features and determine which features are more effective in the classification phase. This study primarily selects the best feature extraction and classification methods. This study provides a new idea for the benefit of deaf individuals that is preferable to a computer environment.

Keywords: wearable computing system; vibrating speaker for deaf; human–computer interaction; feature extraction; speech processing.

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ASSESSMENT OF FOOT PERFUSION IN PATIENTS WITH DIABETIC FOOT ULCER

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Professor and Head of The Department
Department of Biomedical Engineering, Karpagam Academy of Higher Education, Coimbatore.

Abstract:

Assessment of foot perfusion is a vital step in the management of patients with diabetic foot ulceration, in order to understand the risk of amputation and likelihood of wound healing. Underlying peripheral artery disease is a common finding in patients with foot ulceration and is associated with poor outcomes. Conventional methods of assessing tissue perfusion in the peripheral circulation may be unreliable in patients with diabetes, and it may therefore be difficult to determine the extent to which poor perfusion contributes to foot ulceration. Anatomical data obtained on cross-sectional imaging is important but must be combined with measurements of tissue perfusion (such as transcutaneous oxygen tension) in order to understand the global and regional perfusion deficit present in a patient with diabetic foot ulceration. Ankle-brachial pressure index is routinely used to screen for peripheral artery disease, but its use in patients with diabetes is limited in the presence of neuropathy and medial arterial calcification. Toe pressure index may be more useful because of the relative sparing of pedal arteries from medial calcification but may not always be possible in patients with ulceration. Fluorescence angiography is a non-invasive technique that can provide rapid quantitative information about regional tissue perfusion; capillaroscopy, iontophoresis and hyperspectral imaging may also be useful in assessing physiological perfusion but are not widely available. There may be a future role for specialized perfusion imaging of these patients, including magnetic resonance imaging techniques, single-photon emission computed tomography and PET-based molecular imaging; however, these novel techniques require further validation and are unlikely to become standard practice in the near future.

Keywords: peripheral artery disease, Ankle-brachial pressure index, capillaroscopy, iontophoresis and hyperspectral imaging.

SKIN TUMOR DETECTION USING IMAGE PROCESSING TECHNIQUE

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[1]Associate Professor, [2]Professor
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Abstract:

Melanoma is the most deadliest form of skin cancer and this on rise in today's world. Image process techniques are widely employed in many medical areas for image improvement in earlier detection and treatment stages, wherever the accuracy issue is necessary to get the abnormality problems in target pictures. The researchers already exists a research on computerized prediction of for malignancy from the image captured by digital camera. Detection of these images is usually challenging due to the disturbing factors such as illumination variations and reflections of light from skin lesion. One important stage in diagnosis of melanoma is medical image segmentation for many image analysis tasks. In this project, a method for accurate segmentation of lesion region is proposed. Image quality and accuracy is the core factors of this project. The input image, after being pre-processed to reduce noisy, this method provide output of a label for each pixel, producing a segmentation mask that shows the lesion region. This mask will be will perform some post processing operations. The experimental results show that our proposed method can out perform the segmentation accuracy.

Keywords: Malignancy, Segmentation of lesion region, post processing.

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IOT BASED FETAL MOVEMENT DETECTION SYSTEM

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Abstract:

There are many pregnant women in our world and fetal movement counting is one of the most important indices reflecting the health of the fetus but they cannot know the fetal movements. In the hospital, ultrasound method serves as gold standard but only be used within a short time because of the potential of tissue damage, so that the ensemble method was found to have the best performance compared to ultrasound method. The sensors are used to measure the vital parameters like temperature, heart rate and movement of the foetus along with the symptoms of labor pain. The measured parameters are stored in cloud using IoT, the stored data is easily accessible by the patient as well as the doctor from any part of the world using the cloud address. This study aims to develop a wearable device for out-of-hospital monitoring of fetal movement with acceptable accuracy. In this work, a wearable device with two accelerometers was developed for accurate and continuous fetal movement monitoring. Nine different machine learning algorithms with optimized hyperparameters and features were compared and analyzed. In this paper two sensors, microcontroller, display and Wi-Fi module, cloud server, machine learning and buzzer was used to monitor the fetal movement, 2 MPU6050 sensors was used here for gathering data, microcontroller which decodes the data and send it to the display. 1 OLED (Organic Light Emitting Diode) was used for live display and 1 ESP12E (Wi-Fi Module) was used for sending of data to the machine learning to remote distance through internet and cloud server was used as storage space and finally buzzer was used here to alert the kick movement of baby.

***Keywords*:** Fetal Movement Detection, Accelerometer, Machine Learning, Wearable Device.

A SMART VEHICLE CHARGING STATION IDENTIFICATION BASED ON IOT WITH HYBRID GREY WOLF-BAT OPTIMIZATION ENRICHED ON ARTIFICIAL NEURAL NETWORKS RECOGNITION METHODS

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Abstract:

The tendency towards the green energy resolution, in the recent days there is a substantial increase in electric vehicles. Hence, identification of available charging station towards the travel is a major issue. For this purpose, this research work intends to develop a smart vehicle charging station with proper route mapping and monitoring units. The aim of this work is to identify the nearby available charging point by developing an advanced charging station with Internet of things (IOT) enabled. The availability of available charging slot for the particular time is also identified by the image processing. In particular, Anisotropic Filtering (AF) will be suitable for this work for improving the image quality by reducing the noise. Along with that co-occurrence matrix is deployed for texture analysis of the image processing. Hybrid Grey Wolf Bat optimizer (GWBO) is utilized for efficient tracking of fastest route. At last, Artificial Neural network (ANN) technique implementation perfectly identifies whether the empty space is available or not in the charging station for our vehicle. Various scales are analyzed for the validation of results with the conventional methods.

Keywords: Smart charging station, Internet of things (IOT), Anisotropic Filtering (AF), Grey wolf Bat optimizer (GWBO), Artificial Neural Networks (ANN).

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IOT BASED ELECTRICITY BILL READING MACHINE

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Abstract:

The regular method of taking electricity bills is that the EB people come to every home to take energy meter readings. They take the reading from the energy meter and calculate the charge and give the bill to us. Instead this we can introduce a new system to take energy meter readings. As we all know, charging of the energy meter has become major work for the government. Wireless communication system will be incorporated with Electronic Energy Meter (EEM) to measure the usage of electricity remotely even from the office. Even though they are two unique modules, the energy meter conveys the reading details as requested by the communication system. The communication system is further associated with the electricity regional/sub-local office, which will rather act as a base station to measure the supply of electricity even without the mediation of meter reader. The communication channel is recognized by the consumer's number and it is secured by any encryption guidelines. The base office can confirm the energy meter's performance by checking the day to day utilization of energy so as to avoid any tampering or break down of the energy meter. The proposed system is capable of continuously monitoring and being notified about the number of units consumed to the energy provider and consumer.

Keywords: Energy meter, electricity, communication system.

A SURVEY ON IOT BASED SMART AGRICULTURE

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***Abstract*:**

In these modern trends agriculture is almost declining than before, that is why we decided to introduce the Internet of Things (IoT) in agriculture it gets easier and easier. In this article, we decided to introduce IoT and the cloud as a platform to do this farming in a simple way. In this project we are using an Arduino Uno sensor and we have also connected this sensor to one of the cloud based irrigation control platforms. The main purpose of using the cloud platform is to control the irrigation and the data from the sensor is displayed interactively on this platform.

Keywords: IoT, Arduino Uno sensor.

ISBN: 978-93-94412-02-6

ASSISTIVE DEVICE FOR CHILD SAFETY & VISUALLY IMPAIRED PERSON USING IOT

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Abstract:

The idea of a smart wearable system for children and visually impaired is discussed in this paper. The key advantage of this wearable above others is that it can be used with any cell phone and does not required an expensive smart phone are a very tech-savy individual to operate. The GPS, GSM, Wi-Fi and Arduino technologies were used to create a smart wearable gadget for kid safety and to assist visually impaired people with a location tracking system. The prototype system uses a heartbeat and temperature sensor to monitor the health of children. The child will be safe from threads as a result of this. There are many wearable's available now a days that crack children's everyday habits and activities and also assist in locating them utilizing Wi-Fi and Bluetooth services. However, it appears that both the parent and the child are communicating in securely. As a result, the goal is to create a text and Email enabled link in between child's wearable and the relevant parent via SMS. Global System for Mobile Communication is the primary concept behind this. For issuing an emergency alarm, the proposed solution is wearable gear with cellular network and Wi-Fi connectivity. When the push button is touched, an alarm is sent in variety of ways, including SMS and Email, in the event of emergency.

Keywords: GPS, GSM, Wi-Fi, Arduino, Wearable device.

SMART STREET LIGHT MANAGEMENT SYSTEM USING IOT

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***Abstract*:**

Internet of Things (IoT) is an essential part in our day to day life because all the devices are connected together to form a network which facilitates us to control and monitor the devices. Using IoT, the control of the device and monitoring the equipment's from the current location becomes simpler in this modern world. In this paper, we focused on controlling and monitoring a street light from anywhere using IoT. Currently, street light gets switched ON and OFF manually. And also in the existing system, if there is any fault found in the street light, it is necessary to book a complaint in Electricity Board office directly and then they will come and rectify the problem. But in our proposed work, the street light can be switched ON/OFF automatically and its condition can be monitored with LDR sensor without any manual interaction. The location of the light is captured using GPS and it sends a notification to an authorized person whenever required. In turn, the delay associated with booking of complaint can be avoided. Hence, with the use of IoT, the man power gets reduced and communication made easily to the authorized person. Further, it can be used to control the utilization of electricity over wide area.

Keywords: IOT, Sensor, GPS,

ISBN: 978-93-94412-02-6

IOT BASED SMART AGRICULTURE

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Abstract:

Despite the perception people may have regarding the agricultural process, the reality is that today's agriculture industry is data-centered,precise, and smarter than ever. The rapid emergence of the Internet-of- Things (IoT) based technologies redesigned almost every industry including ―smart agriculture which moved the industry from statistical to quantitativeapproaches. Such revolutionary changes are shaking the existing agriculture methods and creating new opportunities along a range of challenges. This article highlights the potential of wireless sensors and IoT in agriculture, aswell as the challenges expected to be faced when integrating this technologywith the traditional farming practices. IoT devices and communication techniques associated with wireless sensors encountered in agriculture applications are analyzed in detail. What sensors are available for specific agriculture application, like soil preparation, cropstatus, irrigation, insect and pest detection are listed. How this technology helping the growers throughout the crop stages, from sowing until harvesting, packing and transportation is explained. Furthermore, the use of unmanned aerial vehiclesfor crop surveillance and other favorable applications such as optimizing crop yield is considered in this article. State-of-the-art IoT-based architectures and platforms used in agriculture are also highlighted whereversuitable. Finally, based on this thorough review, we identify current and future trends of IoT in agriculture and highlight potential research challenges.

Keywords: Internet-of- Things, cropstatus, unmanned aerial vehicles.

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INTERNET OF THINGS (IOT) FOR SMART CITY, AGRICULTURE AND HEALTHCARE

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Abstract:

The Internet of Things (IoT) technology has revolutionized all areas of human life, making it more comfortable. IoT refers to the current trend of The Internet of Things (IoT) technology that has revolutionized all areas of human life, making it more comfortable. IoT refers to the current trend of connecting all kinds of physical objects to the Internet, even the most unexpected ones, without human intervention, which constitutes a self-configurable network. The Internet of Things (IoT) enables organizations to automate the process and improve service delivery via Internet technology and data transfer to the cloud. Nowadays, the Internet of Things (IoT) is becoming a widely discussed topic among researchers, specialists, and experts. It is seen as the next step in the evolution of the Internet. This paper covers the application of (IoT) technology in three different areas: smart cities, health, and agriculture.

Keywords: Internet of Things, Smart City, Smart Parking, Smart agriculture, Smart Healthcare.

ISBN: 978-93-94412-02-6

DESIGN OF A SLEEP TRANSISTOR AND READ, WRITE SEPARATION BASED 6T SRAM MEMORY ARRAY FOR LOW POWER IOT APPLICATIONS

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Abstract:

Content-Addressable Memory (CAM) performs a parallel search operation by comparing the searching data with all contents stored in memory at a single cycle, instead of finding data with address. The structure of the match line (ML) and the search line (SL) is a major factor in power consumption, and various CAMs for low-power and high-speed matching are being studied. In this paper, a structure of CAM that has no pre-charge, which provides low power and has improved the disadvantages of conventional AND gate-based CAM has been studied. We design the proposed CAM architectures on 65-nm process node with 1.2 V operating voltage. Results show that the proposed design performs 21% faster while consuming 23% less leakage power than a conventional design.

Keywords: Content-Addressable Memory, match line.

INTERNET OF THINGS (IOT) FOR SMART CITY, GRICULTURE AND HEALTHCARE

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Abstract:

The Internet of Things (IoT) technology has revolutionized all areas of human life, making it more comfortable. IoT refers to the current trend of The Internet of Things (IoT) technology that has revolutionized all areas of human life, making it more comfortable. IoT refers to the current trend of connecting all kinds of physical objects to the Internet, even the most unexpected ones, without human intervention, which constitutes a self-configurable network. The Internet of Things (IoT) enables organizations to automate the process and improve service delivery via Internet technology and data transfer to the cloud. Nowadays, the Internet of Things (IoT) is becoming a widely discussed topic among researchers, specialists, and experts. It is seen as the next step in the evolution of the Internet. This paper covers the application of (IoT) technology in three different areas: smart cities, health, and agriculture.

Keywords: Internet of Things, Smart City, Smart Parking, Smart agriculture, Smart Healthcare

ISBN: 978-93-94412-02-6

IOT HOME

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Abstract:

Home automation is a subject that is becoming more and more popular as a result of its many benefits. Smart houses powered by the Internet of Things (IOT) make life easier and more comfortable. Smart houses have a variety of possible uses, such as remote control of lighting, security, and safety features. Mobile phones, tablets, and Personal Digital Assistants (PDAs) are used to manage household equipment including air conditioners, washers, and refrigerators. Because a user-friendly interface can give users more effective control over home appliances, a user-friendly and adaptive interface is necessary for smart homes. Commercially available smart home automation systems are still quite pricey and out of reach for most people. However, today's availability of microcontrollers, such as Arduino, enables the development of inexpensive IOT-based smart home systems. This study presents an affordable and user- friendly IOT-based smart house model with implementation utilizing an Arduino microcontroller and several sensors. It emphasizes the system's dependability, affordability, and ability to meet user needs in the house The aim of an IOT-based home automation system is to create a system that allows the user total control over all remotely controlled elements of their home. The automation system will be able to be managed remotely via a packet PC running a Windows Mobile application the internet, and a central host PC. Home
automation is a subject that is becoming more and more popular as a result of its many benefits.

Keywords: smart houses, Arduino, sensors, mobile Applications, inexpensive, automation system.

TELEMETRY MONITORING OF AN ENVIRONMENT USING ROBOT

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Abstract:

In many places, the higher officials will go around all the places in order to monitor the working space and the functionalities. Some places will have vast area coverage and it might be difficult for the higher officials to complete all the places within a day. To create a proxy for the higher officials with a “Telemetry Monitoring Environment using Robot” which is Wi-Fi enabled and guided by GPS. Our robot gets input commands as voice through the Google assistant and it is connected to internet. Using Wi-Fi module as hardware interface and MQTT as software, the robot will get the desired location for its movement through GPS. In addition, the robot will drive towards the destination with the help of LiDAR sensor, which will do the obstacle avoidance. This helps robot to avoid the obstacles along the way. A height adjustable Wi-Fi enabled camera along with two-way communication is used to watch the environment on its way on live. Our project will reduce the time spent to move around the entire spots and it is easy to operate using voice commands while the robot is connected to the internet.

Keywords: Robo, Wi-Fi, LiDAR sensor.

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DIGITAL MARKETING STRATEGY

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Abstract:

The use of the internet and social media have changed consumer behaviour and the ways in which companies conduct their business. Social and digital marketing offers significant opportunities to organizations through lower costs, improved brand awareness and increased sales. However, significant challenges exist from negative electronic word-of-mouth as well as intrusive and irritating online brand presence. This article brings together the collective insight from several leading experts on issues relating to digital and social media marketing. The experts' perspectives offer a detailed narrative on key aspects of this important topic as well as perspectives on more specific issue including artificial intelligence, augmented reality marketing, digital content management, mobile marketing and advertising, B2B marketing, electronic word of mouth and ethical issues therein. This research offers o significant and timely contribution to both researchers and practitioners in the form of challenges and opportunities where we highlight the limitations within the current research, outline the research gaps and develop the questions and propositions that can help advance knowledge within the domain of digital and social marketing.

Keyword: Artificial intelligence, Augmented reality marketing, Digital marketing, Ethical issues.

GARBAGE MANAGEMENT SYSTEM

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Abstract:

Alongside the advancement of the Internet of things (IoT), waste management the board has showed up as a major issue. Waste management the board is a day-by-day task in metropolitan regions, which requires a lot of work assets and influences normal, budgetary, effectiveness, and social perspectives. As of late, there has been a pattern of consolidating ideal waste administration procedures with minimal expense IoT architectures. In this paper, we consider algorithms, based on heuristic models or graph theory, from which we can find ways to minimize the distance of waste collection and we propose an original strategy that overwhelmingly and proficiently accomplishes waste management executives by foreseeing the likelihood of the waste level in garbage cans. By utilizing AI and diagram hypothesis, the framework can improve the assortment of waste with the most limited path. We present a clever IoT-based AI strategy, which is utilized to anticipate the likelihood of gathering waste in the genuine climate dependent on the recorded info information. Our framework saves time by tracking down the best course in the administration of waste assortment.

Keywords: *Internet of Things; smart cities; AI strategies; waste management; waste disposal.*

ISBN: 978-93-94412-02-6

OPTICAL CHARACTER RECOGNITION

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***Abstract*:**

OCR stands for "Optical Character Recognition." It is a method for detecting text in a digital image. A common application is text recognition in scanned papers and photographs. OCR software can convert a physical paper document or image into an electronic text-searchable counterpart. It can aid in the rapid digitization of archival documents. The processed text is then saved in the cloud. As needed, the papers or saved text can be searched using the AWS Cloud. The required text is displayed on the TFT. A thin-film transistor liquid crystal display.

Keywords: OCR, Digital Images, AWS, TFT.

INTELLIGENT SMART GLASSES USING RASPBERRY-PI

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Abstract:

In this project we have made combination of Artificial Intelligence and Raspberry-pi and to detect the objects in front of blind peoples and alerts them what is in front of them. So, that they could guess the object in front of them and can able to make their activities according to their situation. Basically it is difficult for blind people pass their day to day life with their disabilities. To make their life easier, we have made a smart blind sun glasses with some features are interfaced in their sun glasses. Whenever the obstacle is detected on the way through ultrasonic sensor placed on the front of the glass, Camera gets triggered to capture the object which is on the way. The captured image is sent to cloud to identify the type of the object and then it is intimated as voice command through speaker or via earphones connected with Raspberry pi. So that blind can able to identify the object in-front of them, if it is identified that is a human in their way, they can ask for any help. If there is a large obstacle like a car, they can be able to walk based on the object in-front of them. Additionally, by interfacing GPS with the system, with the
help of google maps, the system will automatically navigate their way to home.

Keywords: Artificial Intelligence, Raspberry-pi, GPS.

ISBN: 978-93-94412-02-6

ROBOTICS AND AUTOMATION

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Abstract:

Robotics incorporates multiple engineering and design disciplines to build, program, and use robots for task completion in our focus, manufacturing tasks. Industrial robots are used by manufacturers to move products, parts, and tools, and perform many other programmed tasks.7 A subset of industrial robots, collaborative robots (or "cobots") are designed to safely work alongside humans to perform manufacturing tasks that benefit from automation but cannot yet be fully automated. Robots can also help manufacturers deal with labor shortage that can occur as workers age out of their jobs, as they supplement current employees through transition periods. Industrial automation involved using machines, robots, and control systems to automate tasks within a manufacturing process. Automation uses computer software, machines, and other technologies to carry out tasks which would otherwise be done by human workers.8 Various levels of automation, when combined with robotics, can complete tasks on a manufacturing floor.

Keywords: Robotics, Automation.

BOOKSHOP AUTOMATION SYSTEM

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Abstract:

The project titled as "BOOKSHOP AUTOMATION SYSTEM" and developed using Visual Studio .Net 2019 with C# language as front end and SQL SERVER 2008 as back end. The main aim of this project is to automate the process of book shop management system. Generally it includes display of books, users and order processing. Before automation of bookshop processing, we understood the concept of automation. In automation process we make a system that work automatically in response to respective events. Here we have developed such type of automated book shop system where the customers/client can buy books by themselves. If any customers wants to purchase a book from the shop, he/she can select the available books and add it to the bill. Here he/she can see the Title, Author, Quantity and Price of the books. Now customer can adds this book into cart and print the bill. The book details can be edited by the user whenever needed.

Keywords: SQL SERVER, Automation.

ISBN: 978-93-94412-02-6

AUTOMATED ATTENDANCE SYSTEM BY FACE DETECTION AND RECOGNITION USING OPEN CV

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Abstract:

In contemporary world, image processing is used in many fields like pattern recognition, medical field, color processing, etc. The vintage attendance methods like manual entry, iris scanning, finger print scanning, are time consuming. Therefore we proposed a system which uses face recognition for attendance entry. We use Open cv-python in Raspbian platform to reduce the cost of the system. Haar cascade algorithm is used as aspects for detection. LBPH "Local Binary Pattern Histogram" is used for better recognition of human face.

Keywords: Haar Cascade; LBPH; accuracy.

SAFETY DETECTOR

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Abstract:

Lately our nation had created in numerous ways yet numerous violations against ladies exist. There could be no legitimate means to distinguish the secret camera which currently had turned into a difficult issue. This gadget expects to keep up with the wellbeing and security of individuals by identifying the government agent camera and stop the camera working. Since stowed away cameras are less expense and little in size, it turned out to be not difficult to introduce camera all over. It finds its application in the areas where really cameras are not permitted. The issue of stowed away cameras at public spots turned into an extreme danger to individuals nowadays. The cameras are covertly set up in the evolving room, theaters, bathrooms and other public spots which influence the protection of individuals. Certain individuals could contend that cameras are not difficult to track down and this is superfluous, yet this is actually a difficult situation to track down a secret camera in a room. The key goal of this project is to establish safety for women.

Keywords: Secret Camera, Covertly Set up.

ISBN: 978-93-94412-02-6

IOT BASED DIALYSIS PATIENT MONITORING SYSTEM

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Abstract:

The main objective of this project is to monitor the dialysis process parameters and the patient health in the cloud platform. Through this system the dialysis process and patient health can be monitored remotely without any contact with patients. This will be more helpful to frontline workers like doctors and nurses by avoiding Covid-19 contamination. In this project, the dialysis process parameters like blood inflow rate, blood outflow rate, temperature of the blood, weight of the fluid etc. are monitored. Data's are recorded through 16X2 LCD display locally and BLYNK application remotely.

Keywords: Cloud Platform, 16X2 LCD display, BLYNK.

GAS LEAKAGE DETECTOR & AUTOCUT-OFF SYSTEM USING 8051

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Abstract:

Home fires have been occurring frequently, posing an increasing hazard to both human lives and property in recent years. Given its strong flammability and ability to burn even at a distance, liquid petroleum gas (LPG) is one of the major gas that cause accidents everywhere and the main reason for the accident is the leakage of gas cylinders. Most fire incidents are brought on by low-quality construction and due to the improper maintenance of the gas cylinder peripherals like gas tube, gas nozzle etc. And also the carelessness that prevail among the people like when not in use the regulator or rubber tubing are not turned off. Therefore, at the time of gas leakage switching on a small electronic appliance produces a spark which leads a big accident to overcome both the problems ,it is crucial to build a gas leakage detecting system with auto power cut-off using 8051 microcontroller is a simple way which prevents majority of the accidents. Here the MQ9 gas sensor senses the gas leakage and it is transferred to the 8051 microcontroller and through the relay the total power supply to the house is stopped and the gas nozzle is closed using the servo motor and when the reset button in the microcontroller is pressed then again it moves to its normal position and this cycle is continued. This paper proposes a gas leak detection to find the leakage of gas and cutting off the power supply to avoid environmental hazards and major accidents**.**

Keywords: 8051 microcontroller, MQ9-Gas sensor, Relay, LPG.

ISBN: 978-93-94412-02-6

DESIGN OF LOW POWER HIGH PERFORMANCE CONTENT ADDRESSABLE MEMORY FOR PROGRAMMABLE HARDWARE

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[1,3,4]Assistant Professor, [2]Associate Professor
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Abstract:

Content-Addressable Memory (CAM) performs a parallel search operation by comparing the searching data with all contents stored in memory at a single cycle, instead of finding data with address. The structure of the match line (ML) and the search line (SL) is a major factor in power consumption, and various CAMs for low-power and high-speed matching are being studied. In this paper, a structure of CAM that has no pre-charge, which provides low power and has improved the disadvantages of conventional AND gate-based CAM has been studied. We design the proposed CAM architectures on 65-nm process node with 1.2 V operating voltage. Results show that the proposed design performs 21% faster while consuming 23% less leakage power than a conventional design..

Keywords: Content-Addressable Memory, match line (ML) and the search line (SL).

CYBER SECURITY AND RECENT CYBER ATTACKS

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Abstract:

Cyber security is the application of technologies, processes, and controls to protect systems, networks, programs, devices and data from cyber-attacks. It aims to reduce the risk of cyber-attacks and protect against the unauthorized exploitation of systems, networks, and technologies. Technologies are emerging as well as the cybercrimes which also known as Cyber-attacks also increasing a lot. This study focuses mostly on recent cyber-attacks and the cyber threats. The latest cyber security breaches and the resulting financial losses are covered in this essay. This essay also examines the growing computer system exploitation, which has increased the potential for recent cybercrimes. In this work, essential and current cybercrime mitigation strategies have also been described. The area of the legal system that deals with the Internet, cyberspace, and the corresponding legal issues is known as cyber law. Although networking and digitization have many advantages for us in areas like e-commerce, banking, and communication, cybercrime has also given rise to new criminal tactics. People must have a thorough understanding of cyber laws in order to stop these crimes. The purpose of this paper is to inform readers about cybercrimes, cyber security, Indian cyber laws, and the precautions we can take to protect ourselves from them. Cyber security is crucial to the information technology industry. One of the largest issues in the modern world is information security. Cybercrimes, which are escalating rapidly on a daily basis, are the first thing that comes to mind while we think about cyber security. Numerous governments and businesses are taking numerous precautions to stop these cybercrimes. In spite of several precautions, many people are still quite concerned about cyber security. This essay primarily focuses on the difficulties that modern technology-based cyber security faces. It also emphasizes the most recent information on cyber security strategies, ethics, and trends that are shaping the field.

Keywords: Cyber-attacks, cyber law, Cybercrimes.

ISBN: 978-93-94412-02-6

A STUDY OF CYBER CRIME AND SECURITY

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Abstract:

In recent years, with the rapid development on network connections and technology, it is important to know about cyber security and to use it efficiently. If the system doesn't have any security to protect it then the important documents, files, information's and other important software's will be at risk all the time. Each and every company should be protected whether it is IT related company or not. With the development of cyber security related techniques, the attackers will not able to attack the systems. Attackers may have enhanced technology of hacking by using that they can easily find the weakness of all. Cyber Security is necessary because medical, military, financial, corporate organizations accumulate and government, stock unprecedented quantities of data on PCs, practice and other electronic devices. Cyber security is used for the protection of internet-connected systems such as software, hardware and data from cyberthreats. This practice is used by individuals and organizations to protect against unauthorized access to data centers and other computerized systems. It's also known as information technology security or electronic information security.

Keywords: Cyber security, Cyber threat, security.

CREATING EFFICIENT MIGRATING SCHEME FOR DISTRIBUTED CLOUD STORAGE

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***Abstract*:**

To satisfy the ever growing storage demand in the environment of large scale internet services the cloud storage has become ideal. To reduce the access time we touted data replication as an ultimate solution to improve the data availability and to reduce access time. Data replica systems migrate and create large number of data replicas between and within the cloud data centers to reduce the overhead in terms of network load and availability. We propose crane an efficient replica migration scheme for distributed cloud storage systems. To minimize the time for copy the data to new replica location and to avoid congestion in network and also to ensure the desired reliability for the data. Crane provides a sub-optimal solution for the replica migration problem with lower computational complexity than its integer linear program formulation by experimental and simulation results. When compared to open stack swift crane will reduce up to 60% the creation of replica and the time for migration and the network traffic in inter data centers will be reduced up to 50% with ensuring minimum required data availability.

Keywords: Touted Data , Replica System , Migration Problem.

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MEMORY REDUPLICATION AND PARTITION FOR IMPROVING PERFORMANCE IN CLOUD COMPUTING

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Abstract:

Both limited main memory size and memory interference are considered as the major bottlenecks in virtualization environments. Memory reduplication, detecting pages with same content and being shared into one single copy, reduces memory requirements memory partition, allocating unique colors for each virtual machine according to page color, reduces memory interference among virtual machines to improve performance. In this paper, we propose a coordinate memory reduplication and partition approach named CMDP to reduce memory requirement and interference simultaneously for improving performance in virtualization. Moreover, CMDP adopts a lightweight page behavior-based memory reduplications approach named BMD to reduce futile page comparison overhead meanwhile to detect page sharing opportunities efficiently. And a virtual machine based memory partition called VMMP is added into CMDP to reduce interference among virtual machines. According to page color, VMMP allocates unique page colors to applications, virtual machines and hypervisor. The experimental results show that CMDP can efficiently improve performance (by about 15.8%) meanwhile accommodate more virtual machines concurrently.

Keywords: Reduplication, CMDP, BMD, VMMP.

ONLINE COMPLAINT SYSTEM FOR MUNICIPAL CORPORATION

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Abstract:

The development of a country depends on the village's development. As part of the smart village concept, we need a system that helps in development of villages in the areas like Primary education, people's healthcare, Roads0078 and Transportation, Drinking water facilities, government policies awareness and availability of basic facilities/infrastructure. This system helps the members to collaborate, plan, assess and implement different activities and learn with others experience/feedbacks and suggestions. Smart Villages' – the community, individuals and collectively, will be empowered to take smart decisions using smart technologies, communication and innovations.

Keywords: Smart Villages, smart technologies.

ISBN: 978-93-94412-02-6

IOT BASED BIG DATA STORAGE SYSTEMS IN CLOUD COMPUTING

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Abstract:

Internet of Things IoT related applications have emerged as an important field for both engineers and researchers, reflecting the magnitude and impact of data-related problems to be solved in contemporary business organizations especially in cloud computing. This paper first provides a functional framework that identifies the acquisition, management, processing and mining areas of IoT big data, and several associated technical modules are defined and described in terms of their key characteristics and capabilities. Then current research in IoT application is analyzed moreover, the challenges and opportunities associated with IoT big data research are identified. We also report a study of critical IoT application publications and research topics based on related academic and industry publications. Finally, some open issues and some typical examples are given under the proposed IoT-related research framework .Internet of Things IoT technology has been a popular approach to implement and run business applications in the past years. Since massive data have been generated by huge amounts of distributed sensors, how to acquire, integrate, store, process and use these data has become an urgent and important problem for enterprises to achieve their business goals. As a consequence, both researchers and engineers are faced with the challenge of handling these massive heterogeneous data in highly distributed environments, especially in cloud platforms.

Keywords: IoT, Big Data, Heterogeneous Data.

SMART AGRICULTURE USING IOT AND THINGSPEAK

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Abstract:

In these modern trends agriculture is almost declining than before, that is why we decided to introduce the Internet of Things (IoT) in agriculture it gets easier and easier. In this article, we decided to introduce IoT and the cloud as a platform to do this farming in a simple way. In this project we are using an Arduino Uno sensor and we have also connected this sensor to one of the cloud based irrigation control platforms. The main purpose of using the cloud platform is to control the irrigation and the data from the sensor is displayed interactively on this platform.

Keywords: IoT, Arduino Uno sensor, Irrigation Control Platforms.

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APPLICATIONS OF BIG DATA

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Abstract:

This Big data and its analytics are at the heart of modern science and business. This data includes online transactions, emails, videos, audio, images, clickstreams, logs, posts, search queries, health records, social network interactions, scientific data, sensors, mobile phones and their applications. is generated from Big Data is the term for large data sets with a larger, more diverse and complex structure, which are difficult to store, analyze and visualize for further processing or results. The process of examining vast amounts of data to uncover hidden patterns and secret correlations is called big data analytics. This useful information can help any company or organization gain richer, deeper insights and gain a competitive edge. For this reason, big data implementations should be analyzed and executed as accurately as possible.

Keywords: Big data analytics, online transactions, social network interaction, mobile data

MACHINE LEARNING APPROACH FOR DIABETES PREDICTION USING ENSEMBLE METHOD

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Abstract:

Diabetes is an infectious disease caused by excessive levels of glucose in the human body. Diabetes no longer needs to be ignored. If left untreated for a long period of time, diabetes can lead to major problems such as coronary heart problems, kidney problems, blood pressure, eye damage, and can affect other organs as well as human height. Diabetes can be managed sooner than expected. To achieve this intention, these task images can be used to more accurately perform early prediction of diabetes in human frames or affected individuals by applying various machine learning techniques. Machine insights on strategies provide better predictive returns by building modes from patient-derived datasets. In these figures, machine learning classification and ensemble strategies can be used on datasets to predict diabetes. These are K Nearest Neighbors (KNN), Logistic Regression (LR), Decision Trees (DT), Support Vector Machines (SVM), Gradient Boosting (GB), and Random Forest (RF). The accuracy of each version is exceptional when compared to other models. The images in the project provide a correct or more accurate version, suggesting that that version can effectively predict diabetes. This result suggests that random forest performed better than other systems for gaining insight into strategy. Keywords: diabetes, machine, learning, prediction, dataset, ensemble

Keywords*:* Diabetes, Machine, Learning, Prediction, Dataset, Ensemble.

ISBN: 978-93-94412-02-6

INTELLIGENT NETWORKING USING AI AND MACHINE LEARNING

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Abstract:

Telecoms need to be able to incorporate new technologies and next-generation connectivity such as 5G to customers and end users. To achieve these ambitious goals, they need to optimize their networks – make them more intelligent if you will. Some of the tools needed include artificial intelligence (AI), machine learning (ML) and artificial intelligence operations (AIOps). This document will explore what intelligent networking means to telecoms, vendors and customers, and how AI and ML technologies and tools can be used, the cultural shifts the industry needs to make it a success, and what to bear in mind when deploying machine learning across a telecom network. The LF Networking (LFN) End User Advisor Group (EUAG) is publishing this document to identify and highlight the latest thinking and recommendations for building and supporting intelligent networking and the tools needed to achieve it. It will touch on the state of automation and adoption of intelligent networking tools by telecom operators. This is a new area for many in the telecom industry, so the focus will be on the requirements, tools and approaches that have been deployed, and some potential future scenarios for intelligent networking and AI/ML tools.

Keywords: Artificial intelligence operations, Machine learning, User Advisor Group.

ARTIFICIAL INTELLIGENCE (AI) NN FINANCE

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Abstract:

Artificial intelligence (AI) systems are machine-based systems with varying levels of autonomy that can, for a given set of human-defined objectives, make predictions, recommendations or decisions. AI techniques are increasingly using massive amounts of alternative data sources and data analytics referred to as ‘big data’. Such data feed machine learning (ML) models which use such data to learn and improve predictability and performance automatically through experience and data, without being programmed to do so by humans. The COVID-19 crisis has accelerated and intensified the digitalisation trend that was already observed prior to the pandemic, including around the use of AI. Global spending on AI is forecast to double over the period 2020-24, growing from USD50 bn in 2020 to more than USD110 bn in 2024 (IDC, 2020[1]). Growing AI adoption in finance, in areas such as asset management, algorithmic trading, credit underwriting or blockchain-based financial services, is enabled by the abundance of available data and by increased, and more affordable, computing capacity.

***Keywords*:** Artificial intelligence, Machine learning, Block chain-based financial services.

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MACHINE LEARNING HELP EDUCATION

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Abstract:

Artificial Intelligence and its subfield, Machine Learning, are frequently cited as the technology of the future. A science fiction dream realized, they allow us to outsource many boring and repetitive tasks to a computer, leaving more time for human employees to work on decisions requiring a human mind. However, while AI generates a lot of buzz, most organizations find it difficult to comprehend how it and machine learning could fit into their workflows. Machine learning is a sub-branch of Artificial Intelligence – a technique that allows computers to mimic human thinking in ways which include learning from past experiences, adapting to new information, self-correction and synthesizing new hypotheses. Machine learning draws specifically on the ability of computer algorithms to learn. Traditional computing requires detailed instructions to perform a function, with each action corresponding to a line of code. For machine learning the computer is given some initial data and instructions which allow it to learn from examples and experience rather than using predetermined instructions from the outset. It's the difference between giving a computer a fish and teaching the computer to fish for itself. Machine learning is divided into various subsets, including unsupervised and supervised learning

Keywords: Artificial Intelligence, Machine Learning, unsupervised and supervised learning.

MACHINE LEARNING METHODS FOR MALWARE DETECTION

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***Abstract*:**

An efficient, robust and scalable malware recognition module is the key component of every cybersecurity product. Malware recognition modules decide if an object is a threat, based on the data they have collected on it. This data may be collected at different phases: **Pre-execution** phase data is anything you can tell about a file without executing it. This may include executable file format descriptions, code descriptions, binary data statistics, text strings and information extracted via code emulation and other similar data. **Post-execution** phase data conveys information about behavior or events caused by process activity in a system. In the early part of the cyber era, the number of malware threats was relatively low, and simple manually created pre-execution rules were often enough to detect threats. The rapid rise of the Internet and the ensuing growth in malware meant that manually created detection rules were no longer practical - and new, advanced protection technologies were needed. Anti-malware companies turned to machine learning, an area of computer science that had been used successfully in image recognition, searching and decision-making, to augment their malware detection and classification. Today, machine learning boosts malware detection using various kinds of data on host, network and cloud-based anti-malware components.

Keywords: cybersecurity, Pre-execution & Post-execution

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A DEEP LEARNING TECHNIQUES FOR HANDWRITTEN DIGIT RECOGNITION AND CLASSIFICATION

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Abstract:

The scope of computers over every field makes them increasingly integrated into human life and everyday activities. The advancements over the computers made the human use them intelligently and genuinely, which makes them integrate with the humans naturally. The recognition of complex digits using a pre-dominant method is essential. Thus, the advantage of automatic handwritten digit recognition becomes obvious. Recently, the role of Deep Learning (DL) in various fields intends to offer the finest solutions with better accuracy. Initially, this paper provides an in-depth analysis of recognizing the Handwritten Digit Recognition (HDR) methods adopted by various investigators. Machine learning has improved this analysis with various approaches involving supervised learning, unsupervised learning and reinforcement learning. Secondly, the reviews of deep learning approaches for HDR over real-time applications are discussed. DL techniques are modeled exclusively for handling data formats. As handwritten digits are of this complex format, a nature-inspired DL based Convolutional Neural Network (CNN) models are discussed deeper. Finally, the different classification methods that are used to recognize the handwritten digits are discussed that could be referential to researchers to specifically work in this arena.

Keywords*: Handwritten images. Deep convolutional neural networks. Prediction models. Classification algorithms*

LUNG-CANCER PREDICTION USING MACHINE LEARNING

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Abstract:

Data mining can be a technique where valuable data is extracted from huge databases. The supervised classification technique assigns knowledge samples to target teams. during this system, it uses completely different classification algorithms, especially calling trees, Extreme Boost, SVM, random forest, linear models and neural network models. this method can classify and analyze the best-fit rule that provides the highest accuracy among different algorithms. The accuracy of these algorithms was calculated according to sensitivity and specificity. The ranking of these models was calculated according to the error rate relative to the categories. It uses the Lung. Cancer dataset to determine whether or not it is benign or malignant. The error matrix consists of true positives, neutrals, true negatives, and false negatives. supported true positive and false negative values, specificity is set. supported true negative and false positive values, the sensitivity is set. algorithmic analysis that finds a much better rule in terms of accuracy, error rate, and potency.

Keywords: *Decision tree, Extreme Boost model, linear model, neural network model, Random forest model, SVM.*

ISBN: 978-93-94412-02-6

A NOVEL FACE DETECTION APPROACH USING LOCAL BINARY PATTERN HISTOGRAM AND SUPPORT VECTOR MACHINE

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Abstract:

Biometrics plays a major role in the evolution of pattern recognition and security system throughout the entire world. In recent days, the most used sensor is either electrical or optical such as camera devices, including scanners to obtain images and recording of unique traits and other measurements. This technology has made a major contribution to many fields like security, healthcare, biometrics, identification, customs, prevention of cybercrime, and also for commercial organizations' uses. In most of the recent technologies which incorporate biometric systems, only one biometric trait is used to ascertain the identity and it also has the same drawback such as noise in recorded data. This noise increases the False Acceptance Rate (FAR) which in turn causes false recognition. The lesser the number of unique traits lower will be the Genuine Acceptance Rate (GAR). hence the security provided by biometrics diminishes its benefits. In this paper, we have come up with the idea of combining two biometrics of an individual to improve security. It is a well-known fact that fingerprint and face recognition can make a decent combination that has been studied, applied, and proved in our project. The proposed method relies on feature extraction using fingerprint and face and key generation using result set analysis (RSR). The experiment has been evaluated in MATLAB 2013b and thus provides a result that increases security having a GAR of 95.3%.

Keywords*:* Biometrics, Fingerprint detection, Face detection, Multimodal, Matching, Machine learning algorithm, Matlab;

AI IN HEALTHCARE: AUTISM PREDICTION USING DEEP LEARNING AND ANALYTICAL TECHNIQUES

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***Abstract*:**

Developmental impairment known as autism spectrum disorder (ASD) is brought on by variations in the brain. Some ASD sufferers have a recognized distinction, like a genetic disorder. Other factors are still unknown. ASD is thought to have a number of underlying reasons that interact to alter how people typically develop. Autism affects millions of people worldwide. Rarely fatal, however they can develop into autism, are the early symptoms of autism. The disease must be predicted as early as possible in order to treat autistic individuals appropriately. People who have autism need special consideration and care from those around them. Successful treatment can also occasionally even reverse the problem. Instead of manually diagnosing the illness, we may alternatively apply deep learning and analytical approaches after gathering the appropriate data. The disease will be identified in this study using analytical techniques.

***Keywords*:** *Decision Tree, Random Forest, kNN, Neural Network, Deep learning, Machine learning.*

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ARTIFICIAL INTELLIGENCE IN AGRICULTURE AND FOOD INDUSTRY

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Abstract:

The application of AI in agriculture has been widely considered as one of the most viable solutions to address food inadequacy and to adapt to the need of growing population Soil and weed control are two areas where AI may be crucial, and the Internet of Things (IoT), a technology with enormous potential for the future, is also discussed. Uneven mechanised distribution, algorithms' capacity to swiftly and accurately handle huge amounts of data, and data security and privacy are the three issues that must be resolved for AI-based technology to become widely accepted in the market. Although pointing out the difficulty of adapting machines and algorithms demonstrated in experimental conditions to actual situations, the study emphasises an already profitable progress and a future that promises even greater advancements in the field of agricultural robotics. Due to rising food demand in tandem with the growing global population over the past few decades, artificial intelligence (AI) has become the latest technology in the food industry. The capacity of the aforementioned intelligent systems to perform a variety of activities, including determining food quality, providing control mechanisms, categorising foods, and making predictions has increased demand for them in the food sector. In order to help choose the best strategies for advancing future developments related to AI and the food industry, this paper reviews a variety of applications and compares their benefits, drawbacks, and formulations. Additionally, this system may be integrated with additional gadgets like an electronic tongue, nose, and computer vision system.

Keywords: AI in agriculture, Food, Computer vision system and Agricultural robotics

INTELLIGENT AGRICULTURAL FIELD USING IOT AND MACHINE LEARNING

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Abstract:

IOT-based Smart Agriculture improves the entire Agriculture system by monitoring the field in real-time. With the help of sensors and interconnectivity, the Internet of Things and Machine Learning in Agriculture is used to detect various factors like Climate and wind speed using API calls, and some parameters like PH, soil moisture, temperature, and Humidity are determined using sensors which give as a crystal clear real-time observation. Here the LDR sensor and LASER are used to detect the entry of animals so that protection of the field is highly maintained and all the field information like Pump status, temperature, moisture content, and humidity will be sent as alerts to farmers via SMS. The soil moisture and PH sensor is used to view the quality of the soil through which the automatic irrigation is carried out, after predicting the nature of the soil. Machine Learning is used to predict the upcoming process with the help of these data.

Keywords: LDR sensor, LASER and PH sensor.

ISBN: 978-93-94412-02-6

PREDICT LOAN ELIGIBILITY USING MACHINE LEARNING

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,

***Abstract*:**
Loans are one of the large portions of a bank's profit. When the method is done manually, there is a danger of making mistakes when selecting the appropriate applicant. As a result, using machine learning to create a loan prediction system that automatically selects the optimal loan. Both the applicant and bank benefited from this. It also takes less time when compared to manual work. In this paper, we have to use various algorithms in machine learning to predict the loan eligibility of an applicant using machine learning.
Keywords

PREDICTION OF HEART DISEASE USING CLASSIFICATION ALGORITHMS

Dhanushree N[1], Deenadhayalan M[2], Surya M[3], Yunothini V[4]

Abstract:
Heart plays a vast role in living organisms. Diagnosis and prediction of heart related diseases requires more precision, perfection and correctness due to the fact a touch mistake can cause fatigue problems or dying of the person. There are numerous dying instances associated with the heart and their counting is growing exponentially daily. To address the hassle there may be a crucial need for a prediction gadget for attention about diseases. Machine getting to know is the branch of Artificial Intelligence (AI), it offers prestigious aid in predicting any sort of event which takes schooling from herbal events. In this paper, we calculate accuracy of system learning algorithms for predicting coronary heart disorder, for this algorithms are logistic regression , naive bayes classification and Decision tree by implementation of Python programming colab notebook is nice device, which have many kind of library, header record, that make the work extra correct and specific.

Keywords: Heart Disease: logistic regression; naive bayes classification and Decision tree

ISBN: 978-93-94412-02-6

YOGA POSE ESTIMATION USING DEEP LEARNING

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***Abstract*:**

Yoga is a centuries-old technique that is employed by physiotherapists, patients, and sportsmen. The key to getting the most out of yoga is having the proper posture and technique. Therefore, creating a model to accurately categorize yoga poses is a contemporary research issue. In order to categorize numerous yoga poses, the study provides a revolutionary architecture. The proposed method estimates yoga poses and divides them into five major categories with minimal latency. The photos are skeletonized in the proposed design before being input into the model. TheMedia Pipe library is used for body key point identification throughout the skeletonization process.The ever-expanding new range of applications (e.g., human-robot interaction, gaming, and sports performance monitoring) enabled by contemporary technological breakthroughs are the main drivers of this movement. Camera modules with more than three cameras capture human movements and save them as video clips. The Multi-view Matching Module chooses the 2D poses ofthe same person among all 2D poses and groups them, while the 2D Pose Detection Module accurately identifies 2D joints in human bodies from video clips. Finally, the 3D Pose ReconstructionModule converts two-dimensional poses into three-dimensional stances. All of the high-level requirements will be met if the four primary modules listed above perform properly.

Keywords: *MediaPipe, Convolutional neural networks, Deep learning, Computer vision, Classification, Skeletonization*

MACHINE LARNING-ARIMA MODEL

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Abstract:

With the emergence of competitive new electric power markets, price forecasting is becoming more and more important to producers and consumers. Price projections are important to create bidding tactics or negotiating techniques in order to maximize profit on both spot markets and long-term contracts. Based on the ARIMA methodology, this paper offers a technique for forecasting electricity costs for the following day. Due to its accuracy and mathematical soundness, ARIMA techniques are used to evaluate time series and, in the past, have been primarily employed for load forecasting. Results from the Spanish mainland and the Californian markets are presented, together with a thorough description of the aforementioned ARIMA models.

Keywords: ARIMA models, electricity markets, forecasting, market clearing price, time series analysis.

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DETECTION AND CLASSIFICATION OF POWER QUALITY ISSUES USING WAVELET AND RBFNN-PSO

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NPR College of Engineering and Technology, Dindigul, India.

Abstract:

This paper introduces a new approach to detect and classify power quality disturbances in the power system using Radial Basis Function Neural Networks (RBFNN) trained by Particle Swarm Optimization (PSO). Back Propagation (BP) algorithm is the most frequently used for training, but it suffers from extensive computation and also convergence speed is relatively slow. Feature mined through the wavelet is used for training. After training, the weight obtained is used to classify the power quality issues. For classification, 8 types of disturbance are taken in to explanation. The classification performance of RBFNN trained PSO algorithm is matched with BP algorithm. The simulation result using PSO have significant improvement over BP methods in signal detection and classification.

Keywords: Power Quality, Radial basis function neural network, wavelet transformation, Back Propagation, Particle Swarm Optimization

WAVELET BASED POWER QUALITY DISTURBANCE DETECTION AND CLASSIFICATIONUSING SVM AND PSO

Abstract*:*

This paper introduces a novel approach to detect and classify power quality disturbance in the power system using Support Vector Machine (SVM). The proposed method requires a smaller number of features as compared to conventional approach for the identification. For the classification, 8 types of disturbances are taken in to account. The classification performance of SVM is compared with Probabilistic neural network (PNN).Theclassification accuracy of the SVM network is improved, just by rewriting the weights and updating the weights with the help of cognitive as well as the social behavior of particles along with fitness value by using Particle Swarm Optimization (PSO). The simulation results possess significant improvement over existing methods in signal detection and classification with lesser number of features.

Keywords: Support Vector Machine, Probabilistic neural network, Particle Swarm Optimization.

ISBN: 978-93-94412-02-6

AGRICULTURE SOIL SAMPLING WITH LEAST SQUARE ALGORITHM

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Abstract:

Soil samples are analyzed to determine the composition, characteristics or nutrient levels of the soil. Smallholder farmers can use simple hand-held field-testing kits. However, in the case of large farms where plants are grown upon hundreds of hectares, the autonomous mobile platform with a soil sampler would be the optimal solution. However, in the case of large farms where plants are grown upon hundreds of hectares, the autonomous mobile platform with a soil sampler would be the optimal solution. Accurate solution of Green's function for layered soil is important to grounding parameters calculation. Segmented sampling method based on the extreme points of the integral kernel function and 3-order least square method are combined to innovatively propose the segmented sampling least square algorithm (SSLSA) for solution of Green's function. Only 6 sampling points are required in each sampling segment, which greatly reduces the amount of calculation. The results show that the SSLSA can approximate the integral kernel function better, solve some complicated cases that the conventional complex image method can't, and has the advantages of higher efficiency and better accuracy.

Keywords: Segmented Sampling Least Square Algorithm, Sampling points.

JARVIS: ARTIFICIAL INTELLIGENCE-BASED VOICE ASSISTANT

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Abstract:

In this project, we'll create a voice assistant named Jarvis that can open files, conduct web searches, retrieve Wikipedia results, read PDF files, launch applications, and even make jokes and provide you advice. Artificial Intelligence based Voice assistants are the working frameworks that can perceive human voice and answer through coordinated voices. The voice assistant will collect audio from the microphone, convert it to text, and send it over GTTS (Google text to speech). The English-language audio file created by the GTTS engine will be played using the play sound module of the Python programming language. We are importing libraries such as "os" for operating system tasks, "speech recognition" for voice command analysis, "pyttsx3" for voice command into text strings, "Time" for fetching the current time and date, "web browser" for web-based tasks on default web browsers, and "SMTP" (Simple Mail Transfer Protocol) for email transmission between accounts over the internet.

Keywords: *GTTS, pyttsx3, SMTP, Speech Recognition.*

ISBN: 978-93-94412-02-6

DEEP LEARNING FOR MEDICAL IMAGEPROCESSING

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Abstract:

The medical services area is very surprising from some other industry. It isa high need area and purchasers expect the most significant level of care and administrations paying little heed to cost. The medical services area has not accomplished society's assumptions, despite the fact that the area consumes anenormous level of public spending plans. Generally, the translations of clinicalinformation are dissected by clinical specialists. As far as a medical expert interpreting image, this is very restricted because of its subjectivity and the intricacy of the pictures; broad varieties exist among specialists and weakness sets in because of their weighty responsibility. Following the progress of deep learning in other true applications, it is viewed as likewise giving energizing andprecise answers for medical imaging, and is viewed as a critical strategy for future applications in the medical services area. In this chapter, we discuss state-of-the-art deep learning architecture and its optimization when used for medical image segmentation and classification. The chapter closes with a discussion of the challenges of deep learning methods with regard to medical imaging and open research issue.

Keyword: Deep learning, Medical services area, Image processing.

CONVOLUTIONAL NEURAL NETWORKS FOR PREDICTIVE RECOGNITION OF WHITE BLOOD CELL CANCER FROM BONE MARROW MICROSCOPIC IMAGES

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Abstract:

One percent of all blood cells are leukocytes, which are produced in the bone marrow. Blood cancer develops as a result of the unchecked proliferation of these white blood cells. The suggested study offers a reliable method for the classification of Acute Lymphoblastic Leukemia (ALL) and Multiple Myeloma (MM) utilising the SN-AM dataset, out of the three main forms of malignancy. A malignancy when too many lymphocytes are produced by the bone marrow is called acute lymphoblastic leukaemia (ALL). Instead of releasing cancer cells into the circulation, Multiple Myeloma (MM), a separate type of cancer, causes them to build up in the bone marrow. As a result, they compete with and suppress the growth of healthy blood cells. Traditionally, the procedure was completed manually over a long period of time by a qualified expert. The suggested model uses deep learning methods, namely convolutional neural networks, to completely eliminate the possibility of mistakes in the human process. The model retrieves the best characteristics from the pre-processed photos after being trained on images of cells. The model is then trained using an enhanced Dense Convolutional neural network framework (hence referred to as DCNN), and it is then predicted which form of cancer is present in the cells. The model correctly retrieved the samples 94 out of 100 times and was capable of reproducing all measurements. In contrast to traditional machine learning techniques like Support Vector Machines (SVMs), Decision Trees, Random Forests, Naive Bayes, etc., the aggregate accuracy was estimated to be 97.2%. Based on this study, the DCNN model's effectiveness on the retrieved dataset is comparable to that of the well-known CNN architectures while having many less parameters and a lower computation time. In order to accurately identify the kind of cancer in the bone marrow, the model can be employed.

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Keywords: Multiple Myeloma, Acute Lymphoblastic Leukaemia , Dense Convolutional Neural Network.

SMART AIR QUALITY INDEX MONITORING USING AI

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Abstract:

Nowadays the air pollution is increasing day by day which contains harmful gasses that can causecancer and other respiratory disorders, or lung diseases.one of the most polluted places are ports where harmful gasses and wastes are released from the ships. People can't tell when will air condition goes worst that lead to dangerous diseases. The Proposal idea of this project is to predict when the air condition goes dangerous to breath. It will alert the people that the air quality is not good to breath. So, people can be moved to safe place. The air condition is monitored by our project in real time. It collects from data and stored in cloud where it is used to predict the air quality. Data are recorded from ship by ship when it reach the port and leave the port.

Keywords: MQ Series, Dashboard, Algorithm.

RESISTOR COLOR CODE DETECTION BY ARTIFICIAL INTELLIGENCE

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Abstract:

Artificial intelligence-based resistor color code detector is designed by with the help of python and Open CV, it also helps us to calculate the resistance of a resistor by taking picture of a resistor, the image is processed through the code that we have wrote, then the color bands printed on the resistor is detected and the resistance value is calculated by a method where first two color bands represent the first two digits of resistance value, the third color band represents the multiplier value of resistance and the last color band represents the toleranceof the resistance value. Usually, the resistor has four bands but it can also have 5 or 6 bands too. Each and every circuit used for all the electronics-based projects consist of a large number of differently valued resistors, to assemble them as wellas to dismantle them the resistors has to be categorized based on their resistancevalues, to aid this process our invention will be of great help. The other uses of our invention will be to detect number of colors present in an image, with slight modifications in the code we have written this process can be used to help color blind people identify the colors present in any of pictures shown to them throughinternet, it can also in entertaining kids who likes to play with color identification games. Many schools, institutes, electronics-based industries will be the ones to get majority of the benefits from our invention. This invention will be created intoan app that allows us to calculate the resistance value of a resistor just by capturing an image of it. The basic buildup of this app consists of programming languages like java, hyper-text markup language (HTML), also involves coding of open CV-python. We can also include other useful things which will be very usefullike checking of resistor's working properly, whether the resistor will suitable to place in between electronic components, we must include separate section for allthese extra works which are optional. Another important feature to be added is the very reverse of our invention which is to show color code band order whenresistance value of resistor given as input by the user.

Keywords: Hyper-Text Markup Language, CV-python.

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APPLICATION TO DETECT THE DISEASE PREDICTION IN PLANT

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Abstract:

As the human population increases day by day, the demand for food also increases. In Agriculture field the yield of crops is reduced due to the microbial disease attack in the plant leaf is one of the major problems. Identification of the plant diseases is one of the keys to prevent the losses in the yield and quantity of the agricultural product. The studies of the plant diseases mean the studies of visually observable patterns seen on the plant. To handle this disease, the first step is identifying the disease and observing them in large scale. Our model find the area of the leaf that has been affected and also the disease that the plant is affected. For this detection of plant leaf disease of tomato plant the input image is taken. Then the image is pre-processed and the clustering is done to find the affected area of the leaf. The disease in the leaf is determined by using the trained dataset of tomato leaf images. This test says the image is entered or not. Machine learning algorithm is effectively used for identification. In This Machine Learning process, Open CV allows our system to detect the pattern in images, CNN (Convolutional neural network) algorithm is used to identify the leaf disease using image segmentation.

Keywords: Image segmentation, Open CV, Keras, Tensor Flow, CNN (Convolutional neural network), and Plant Leaf Disease Prediction.

A NOVEL FACE DETECTION APPROACH USING LOCAL BINARY PATTERN HISTOGRAM AND SUPPORT VECTOR MACHINE

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Abstract:

The global development of classification techniques and security systems is significantly influenced by biometrics. The most popular type of sensor nowadays is either electronic or optical, such those used in cameras, scanners, and other devices that take pictures or record distinctive characteristics and other measures. This technology has significantly impacted a number of industries, including security, healthcare, biometric identity, customs, piracy prevention, and purposes for large corporations. The majority of current technologies that use digital authentication use only the one facial characteristic to determine identity, which comes with the same flaw as noise in recorded information. This noise level rises. Erroneous recognition due to the false admission (FAR). The Genuine Adoption Rate will be lower the fewer distinctive qualities there are (GAR). Hence the benefits of biometrics are outweighed by the security they offer. This study examines have proposed using a patient's two biometrics together to bolster safety. The ability of face and thumbprint recognition to work well together has been explored, put to use, and demonstrated in our study. The suggested approach depends on image retrieval from fingerprint and creation of faces and keys using output set analysis (RSR). The test has been a analyzed with MATLAB 2013b, resulting in a more favourable outcome. Security with a 95.3% GAR.

Keywords: Biometrics, Fingerprint detection, Face detection, Multimodal, Matching, Machine learning algorithm, Matlab.

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FEDERATED MACHINE LEARNING

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Abstract:

Data privacy and information security pose significant challenges to the big data and artificial intelligence(AI) community as these communities are increasingly under pressure to adhere to regulatory requirements, such as the European Union's General Data Protection Regulation. Many routine operations in big data applications, such as merging user data from various sources in order to build a machine learning model, are considered to be illegal under current regulatory frameworks. The purpose of federated machine learning is to provide a feasible solution that enables machine learning applications to utilize the data in a distributed manner that does not exchange raw data directly and does not allow any party to infer private information of other parties. This white paper intends to present an overview of the Federated Machine Learning (FML) technology that can be used as a basis for standards, certifications, laws, policies, and/or product ratings. This white paper targets an educated audience, including lawmakers, corporate and governmental policy makers, manufacturers, engineers, and standard setting bodies.

Keywords: Big data, Artificial intelligence and European Union's General Data Protection Regulation.

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PREDICTION OF HEART DISEASE USING CLASSIFICATION ALGORITHMS

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Abstract:

Heart plays a vast role in living organisms. Diagnosis and prediction of heart related diseases requires more precision, perfection and correctness due to the fact a touch mistake can cause fatigue problems or dying of the person. There are numerous dying instances associated with the heart and their counting is growing exponentially daily. To address the hassle there may be a crucial need for a prediction gadget for attention about diseases. Machine getting to know is the branch of Artificial Intelligence (AI), it offers prestigious aid in predicting any sort of event which takes schooling from herbal events. In this paper, we calculate accuracy of system learning algorithms for predicting coronary heart disorder, for this algorithms are logistic regression , naive bayes classification and Decision tree by implementation of Python programming colab notebook is nice device, which have many kind of library, header record, that make the work extra correct and specific.

Keywords: Heart Disease, logistic regression, naive bayes classification and Decision tree.

APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN BRAIN COMPUTER INTERFACE

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Abstract:

BCI is a device that enables translation of neuronal information into commands capable of controlling external software or hardware. Brain-computer interfaces (BCIs) have shown broad prospects as real- time bidirectional links between human brains and actuators. Artificial intelligence (AI), which can facilitate the analysis and decoding of neural activity, has boosted the field of BCIs. In the past ten years, various BCI applications with artificial intelligence assistance have emerged. These “smart” BCIs consisting of motor and sensory BCIs have shown remarkable clinical success, improved the quality of paralyzed patients’ lives, expanded the athletic ability of ordinary people and accelerated the development in the field of robotics and neurophysiological discoveries. However, despite technical progress, challenges remain with respect to technical progress, long-term training, real-time feedback and monitoring of BCI. In this article, the authors review the application of BCI in the current state of AI, their challenges and future directions.

Keywords: Brain-computer interface (BCI); artificial intelligence (AI); encoding and decoding; computational neuroscience; machine learning.

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FAKE PRODUCT REVIEW DETECTION AND DELETION WITH SENTIMENT ANALYSIS

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Abstract:

We will propose a framework to detect fake product reviews and spam reviews by using Opinion Mining. The Opinion Mining we try to figure out the opinion of customer through a piece of text. We first take the review and check whether the review is positive or negative or neutral using opinion mining. We use Ontology to detect the spam words in the reviews. In that we will apply Naïve Bayes classifier and SVM classifier and on the basis of these algorithms we get specific results. We are using the NLTK (Natural Language Tool Kit) to classify this technics.

Keywords: Opinion Mining, Ontology, Naïve Bayes, SVM, NLTK.

NON INVASIVE DETECTION OF BLOOD GLUCOSE LEVEL IN SMART WATCHES USING BREATH ACETONE

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Abstract:

The number of volatile organic compounds (VOCs) in human breath ranges from part-per-trillion (ppt) to part-per-million concentrations (ppm). Many of these VOCs' cellular and molecular origins remain unknown, and some of them may even have external origins. In healthy persons, the concentration of acetone in the breath ranges from 300 to 900 ppb to more than 1800 ppb. Acetone can therefore serve as a biomarker for metabolic disorders in the circulation. The liver creates ketones to function as a supplementary energy source in some circumstances, such as fasting, exercise, and diabetes, which are then converted into acetone and other ketone bodies. Acetone concentrations in exhaled breath have been demonstrated to correlate with acetone concentrations in the blood as well as with other ketones such beta-hydroxybutyrate using breath analysis methods. Additionally, it has been discovered that levels of volatile organic compounds like acetone and blood glucose might be connected. A mouthpiece is created to analyze the levels of glucose in the breath, and sensors that can measure voltage, resistance, pressure, temperature, and humidity may be inserted within the mouthpiece. Breathing through the mouthpiece cannot be regulated and varies depending on the individual. In order to make up for this, in addition to the actual parameters, the impacts of pressure, temperature, and humidity levels have been taken into account for each and every person. These gas sensors function primarily on the basis of changes in conductivities brought on by interactions with oxidizing and reducing gas molecules. The comparison between the glucose content estimate using acetone gas and the glucose content estimation utilizing intrusive Technology has been made using a data set of 1000 samples.

Keywords: Volatile organic compounds, Part-per-million concentrations, Beta-hydroxybutyrate, Artificial neural network.

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ANALYSIS OF VARIOUS BLOCK MATCHING ALGORITHMS USING MOTION ESTIMATION

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Abstract:

For applications involving digital multimedia video compression, numerous video coding standards and methods have been developed. The amount of data is decreased using these video coding standards. Since it eliminates the temporal redundancy between subsequent frames of video sequences, the motion estimation method is an essential component of video coding. The various motion estimating methods and search techniques are examined in this research. A review of motion estimating algorithms has been provided, covering full search and numerous quick block search strategies. Additionally, a review of current motion estimation algorithms is provided. This review is based on a number of actual findings from test video sequences.

NOVEL PROBABLISTIC CLUSTERING WITH MODIFIED ACTOR CRITIC NEURAL NETWORK (MACN) FOR INTRUSION DETECTION METHODS

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Abstract:

The intrusion detection process is used to identify attacks in computer. The rise of web-based devices, however, has complicated the detection process and necessitated the deployment of a robotized framework to detect attacks. The study suggests a method of intrusion detection utilizing the Modified Actor Critic Neural Network in light of this. The process of grouping concepts into classes of comparable items is called clustering. The clusters are subjected to the different-advance arrangement that is advanced utilizing the proposed enhancement calculation, and in the second dimension of characterization, the interruption in the information is distinguished. The experimentation of the proposed strategy utilizing the KDD Cup dataset yields a precision of 0.70, True Positive Rate of 0.69, and False Positive Rate of 0.58.

Keywords: Intrusion Detection, Neural Network, Cluster, True positive Rate

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IMPROVEMENT OF POWER QUALITY IN A THREE-PHASE FOUR WIRE SYSTEM USING A HYBRID FUZZY BASED MULTILEVEL INVERTER

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Abstract:

The existence of harmonics in the power distribution system (PDS) is treated as the most serious issue that affects its stability and reliability. The active power filter (APF) therefore plays a vital role in PDS to compensate for the harmonics for the improvement of the power quality (PQ) and to keep the total harmonic distortion (THD) below 5% as per IEEE-519. In this work, a three-phase four-wire (3P-4W) multi-level inverter (MLI)-based APF is proposed to overcome the shoot-through effect (STE) and reduce the distortions in the supply current. The control of the voltage source inverter (VSI) is achieved using a Bio inspired algorithm with a Fuzzy logic controller. Traditionally, a recursive least square (RLS) is employed, which offers improved performance, simplicity, robustness, and a lower computational burden. However, they are still altered due to factors like a slow convergence rate, longer iteration rate, and large storage capacity. Nowadays computational intelligence techniques are applied in many science and engineering applications for information processing, decision making and optimization objectives. Bio-inspired computing is a research method aimed at solving problems using computer models based on the principle of biology and nature of the work.This proposed approach is mainly operated for maintaining the dc link voltage of MLI, which follows the principle of capacitor energy and reduces the total harmonic distortion (THD) under different load variations. The performance of MLI under different load conditions is designed, developed, and validated by using a MATLAB/Simulink environment and the preeminent features are established.

Keywords: Active power filter, Three-phase four-wire, Shoot-through effect, Harmonic distortion.

INTELLIGENT AGRICULTURAL FIELD USING IOT AND MACHINE LEARNING

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Abstract:

IOT-based Smart Agriculture improves the entire Agriculture system by monitoring the field in real-time. With the help of sensors and interconnectivity, the Internet of Things and Machine Learning in Agriculture is used to detect various factors like Climate and wind speed using API calls, and some parameters like PH, soil moisture, temperature, and Humidity are determined using sensors which give as a crystal clear real-time observation. Here the LDR sensor and LASER are used to detect the entry of animals so that protection of the field is highly maintained and all the field information like Pump status, temperature, moisture content, and humidity will be sent as alerts to farmers via SMS. The soil moisture and PH sensor is used to view the quality of the soil through which the automatic irrigation is carried out, after predicting the nature of the soil. Machine Learning is used to predict the upcoming process with the help of these data.

Keywords: Internet of Things, Smart Agriculture.

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POSITION CONTROL OF A NON-LINEAR SPECTRAL TANK SYSTEM

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Abstract:

Power systems are complex networks consisting of generation, transmission and distribution of electricity to customers over a large geographical area. Power systems are interconnected to enable a secure and economical supply. Automatic Generation Control (AGC) or Load Frequency Control (LFC) is a very important subject in power systems for a reliable and quality of electricity supply to costumer. Load Frequency Control helps to reduce deviations during transient processes by moving the error to zero value in steady state. The main objective of Load Frequency Control (LFC) in interconnected systems is to maintain the frequency at nominal values of the desired generation power output. To control load frequency of power systems various controllers are used in different areas, but due to non-linearity's in the system components and alternators, these controllers cannot control the frequency quickly and efficiently. The simple neural networks can alleviate this difficulty. This paper deals with the advanced Artificial Neural Network (ANN) is applied to self-tune the parameters of Proportional-Integral-Derivative (PID) controller in Hydro – Thermal Interconnected Power system. The single, Two Area non-reheat system has been considered for simulation of the proposed self-tuning advanced ANN based PID controller. In the PID controller parameters are continuously adjusted according to the change in area-control error (ACE). Simulations of the networks are carried out for different load changes 1% and change of 1% in governor time constant and turbine time constant parameters. The proposed method for simulation results are obtained by the other controllers of PI and PID compared highlighting the performance of PID-ANN controller. The simulation works developed by MATLAB- SIMULINK Environment.

***Keywords*:** Automatic Generation Control, Proportional-Integral-Derivative, Area-control error.

DESIGN AND DEVELOPMENTOF SOLAR HYBRID BICYCLE

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Abstract:

As everyone is aware, the cost of fuel is progressively growing every day. Again, vehicle-related pollution in major cities and urban regions is constantly rising. An effort is being made to look for some other alternate sources of energy for vehicles in order to solve these issues. A BLDC motor housed in the front axle housing propels the newly created solar-powered bike. The lithium ion battery will be charged by the flexible solar panels positioned on the roof, and it will then power the BLDC hub motor. The solar panel will recharge the lithium ion battery while the bike is not in use. In the case of a two-wheeler or the chain sprocket, chain, and gear shifting system of a traditional cycle used by the majority of people, this arrangement will take the place of the petrol engine, the gearbox, and the fuel tank. The solar-assisted bike has a 48 V, 250 W BLDC hub motor mounted on the front axle as part of the dissertation project. It can move at a speed of roughly 15-20 kmph. It has 10 Ah lithium ion batteries, a flexible 50 Watts photovoltaic solar panel, a 48 V, 10 A MPPT DC-DC voltage regulator, and a 48 V, 15 A motor and accelerator controller. In the event that the solar power is inadequate due to cloudy weather, a provision for charging the battery with 220-240V, AC wall outlet supply, is also present.

***Keywords**:* Photovoltaic solar panel, BLDC hub motor, solar-powered bike.

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AN OPTIMIZATION OF POWER QUALITY INTEGRATED OPTIMAL FACTS ALLOCATION WITH POWER SYSTEM STABILITY CONSTRAINT

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Abstract:

The power system performance can be enhanced by using the Flexible AC transmission System (FACTS) devices such as, Interline Power Flow controller (IPFC) and Static Series Synchronous Compensator (SSSC). Due to its considerable cost, it is important to limit the number of these controllers and locate them optimally in the power system in order to achieve a better use of FACTS devices. Firstly, we have applied optimization techniques, namely, Artificial Neural Network (ANN), Elitist Non-dominated Sorting Genetic Algorithm (NSGA-II) and Perturb and Observe Method Algorithm to find out the optimal number of multi-devices of Interline Power Flow Controller and Static Series Synchronous Compensator in order to improve the system load ability and to ensure the steady state security of the network. Secondly, we performed a contingency analysis procedure based on severity index (SI) to identify and classify the most severe line contingencies. Then, we determined the optimal placement and parameter setting of FACTS devices in power system by using the above optimization approach to alleviate the line overloads. To ensure the robustness and effectiveness of the proposed method, the optimization problem presented in this project aims at reducing FACTS installation cost and decreasing total real and reactive power losses.

Keywords: FACTS, Synchronous.

AN OPTIMIZATION OF POWER QUALITY IMPROVEMENT USING DVR AND D-STATCOM IN SHIPBOARD NETWORK

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Abstract:

Now a days the power quality improvement is becoming very complicate due variations of increasing number of electrical loads used for household and industrial purpose. Power quality illustrates the strength of electric power to consumer devices i.e. Synchronization of the voltage frequency and phase allow electrical system to function without any significant loss in performance. In modern power electronics technology on board shipboard power systems (SPSs), Sag/swell has become one of the main concerns like harmonic contamination. Moreover, the SPSs are characterized by heavy pulsed loads, which can draw a large amount of power in a short duration, which usually causes a voltage drop. If the latter exceeds the norms, a voltage collapse might occur and leads to the blackout of the ship. The contribution of this system is to propose a combined topology, which consists of Dynamic Voltage Restorer (DVR) and DSTATCOM (Distributed Static Compensator) to overcome the deficiencies of the SPS. Based on the Model Predictive Control (NMPC) technique, and Metaheuristic algorithms, the conditioners guesstimates the power quality issues of the system and counter them, while the DVR and DSTATCOM are designed to act as a low-pass filter and a reactive power compensator to enhance the stability and reduce the distortion of the voltage. The modelling and control of the proposed topology are presented.

Keywords: shipboard power systems, Dynamic Voltage Restorer and Model Predictive Control (NMPC) technique.

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AERIFORM DRONE PLUNDER BASED SECURITY FRAMEWORK

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***Abstract*:**

Unmanned Ariel Vehicles (UAVs) are increasingly used in recent times. Though this technology has many pros and it also brings new challenges in industries. Since UAVs are not bound to use existing infrastructure, current laws and rules cannot be applied to them. Even critical situations, they can easily overcome existing infrastructural barriers and be a potential harm to society. Therefore, this structure focus on developing a Drone Protection System (DPS). The use of drones for military and civilian purposes has evaluates in India in the past decade. At the meantime, counter-drone systems are also being assembled to address the threats posed by UAVs. How effective are these counter-drone mechanisms. This brief explores this question, and offers suggestions for India to reduce the growing menace from drones. Any evaluation of the adequacy of anti-drone systems has to be conducted in view of current technologies such as Artificial Intelligence (AI), Cognitive global positioning System avoidance, and hardware sandboxing—and such is the aim of this brief. In this system, a concept for an UAV-System capable of catching possibly dangerous UAVs in aerial. After describing the system, the state of the art with different existing solutions to stop none unnamed drones, this presents the concept of developing our system in detail for future. Derive a way to get the optimal point of bisecting the target and further describe our planned master-slave system for the formation flight. In this, the structure conclude the work with first preliminary results on catching drones in nets and flying our UAVs in formation as well as a short outlook on the next steps

***Keywords*:** Net gun, drone defender.