International Conference on " Innovations and Recent Trends in Computer Science "

St. MARTIN'S Engineering College

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10608 Research papers

National ranking by ARIIA

594 crores funding received

Ranked 2nd by 'Wikipedia'

108 MOUs

Ranked TOP by Competition Success Review

228 patents

Department of *Computer Science Engineering* Presents

International conference on

"Innovations and Recent Trends in Computer Science" on 24th & 25th February 2023

ISBN:
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Editor in chief
Dr.P.Santosh Kumar Patra

(ICIRTCS-23)

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Department of Computer Science and Engineering

2nd "International Conference on Innovations and Recent Trends in Computer Science"
(ICIRTCS-23)

Organized on 24th & 25th February, 2023

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Principal, SMEC

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ISBN No: 978-93-91420-22-2

Sri. M. LAXMAN REDDY
CHAIRMAN

MESSAGE

I am extremely pleased to know that the Department of Computer Science and Engineering of SMEC is organizing 2nd **"International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 23) on 24th and 25th of February 2023. I understand that the large number of researchers has submitted their research papers for presentation in the conference and for publication. The response to this conference from all over India and Foreign countries is most encouraging. I am sure all the participants will be benefitted by their interaction with their fellow researchers and engineers which will help for their research work and subsequently to the society at large.

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

M. Laxman Reddy

M.LAXMANREDDY
Chairman

Sri. G. CHANDRASEKHAR YADAV
EXECUTIVE DIRECTOR

MESSAGE

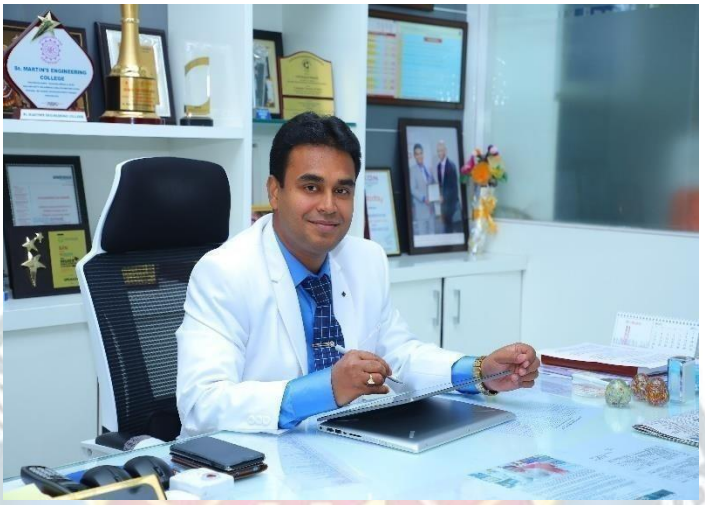
I am pleased to state that the Department of Computer Science and Engineering of SMEC is organizing 2nd International Conference on **"Innovations and Recent Trends in Computer Science"** (ICIRTCS – 23) on 24th and 25th of February 2023. For strengthening the "MAKE IN INDIA" concept many innovations need to be translated in to workable product. Concept to commissioning is along route. The academicians can play a major role in bringing out new products through innovations.

I am delighted to know that there are large numbers of researchers has submitted the papers on Engineering and Technology streams. I wish all the best to the participants of the conference additional insight to their subjects of interest.

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

G. CHANDRASEKHAR YADAV
Executive Director

Dr. P. SANTOSH KUMAR PATRA
PRINCIPAL and GROUP DIRECTOR



I am delighted to be the Patron & Program Chair for the 2nd **"International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 23) organized by the Department of Computer Science and Engineering on 24th and 25th of February 2023. I have strong desire that the conference to unfold new domains of research among the Artificial Intelligence, Machine Learning, Block chain Technology, Internet of Things, Deep Learning, Data Analytics and will boost the knowledge level of many participating budding scholars throughout the world by opening a plethora of future developments in the field of Computer Science and Engineering.

The Conference aims to bring different ideologies under one roof and provide opportunities to exchange ideas, to establish research relations and to find many more global partners for future collaboration. About 200 research papers have been submitted to this conference, this itself is a great achievement and I wish the conference a grand success.

I appreciate the faculties, coordinators and Department Heads of Computer Science and Engineering for their continuous untiring contribution in making the conference a reality.

Dr. P. Santosh Kumar Patra
Principal and Group Director
St. Martin's Engineering College and
St. Martin's Children's Education Society

Dr. Sanjay Kumar Suman
Dean R&D

MESSAGE

Research, curiosity and discovery has been in existence ever since man's presence on this planet millions of years ago, civilization has been characterized by curiosity and discovery. Therefore, the curiosity to explore what will happen, how it happens, is there a better way to do it, has been the driving force behind all research efforts. During the past few decades, the engineering faculties have taken a number of initiatives to reorient the engineering machinery to play leading roles in the industrial development process.

I am delighted to acknowledge the 2nd "**International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 23) organized by the Department of Computer Science and Engineering on 24th and 25th of February 2023. I appreciate organizing team for showing their keen interest in organizing a successful conference to provide a platform for contributors to explore new ideas and exchange research findings among researchers. I thank the support of all students, authors, reviewers, conference team, faculty members, and conference Convenor for making the conference a grand success.

Best Wishes

Dr. Sanjay Kumar Suman

Dean R&D

Dr. S V S Rama Krishnam Raju
Dean Academics

MESSAGE

It gives me immense pleasure to know that St. Martin's Engineering College, 2nd "**International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 23) organized by the Department of Computer Science and Engineering on 24th and 25th of February 2023. I am sure that this conference will provide a forum to national and international students, academicians, researchers and industrialists to interact and involve in Research andInnovation. Such academic events benefit the students, teachers and researchers immensely and widen thehorizons of their knowledge and work experience in the field of Deep Learning, Machine Learning, Data Mining Engineering and Innovation.

I sincerely appreciate the humble efforts of the Institute in providing a platform for students, academicians, researchers and industrialists to share their ideas and research outcome through the forumof this Conference.

I give my best wishes to all delegates and organizing committee to make this event a grand success.

Best Wishes

Dr. S V S Rama Krishnam Raju

Dean Academics

Dr. D V Sreekanth
Dean Administration

MESSAGE

I am delighted to acknowledge the 2nd **"International Conference on Innovations and Recent Trends in Computer Science"**(ICIRTCS – 23) organized by the Department of Computer Science and Engineering on 24th and 25th of February 2023 in St. Martin's Engineering College (SMEC), Hyderabad, India. The objective of this conference was to bring together experts from academic institutions, industries, research organizations for sharing of knowledge and experience in the recent trends and revolutionary technologies in Computer Science and engineering. The conference programme featured a wide variety of invited and contributed lectures from national and international speakers with expertise in their respective fields. The ICIRTCS-2023 has become one of the most extensive, spectacular international events hosted by St. Martin's Engineering College (SMEC), for its high-level quality and the large size of participation. Well- known international and national invited speakers addressed the audience, shared knowledge, and richexperiences on Revolutionary Technology in Computer Science and Engineering.

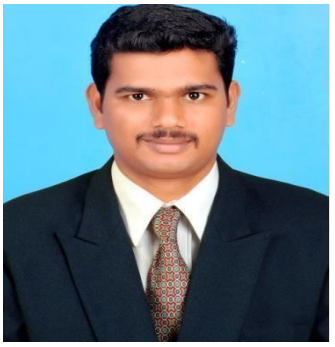
I am sure that this conference will provide a forum to national and international students, academicians, researchers and industrialists to interact and involve in Research and Innovation. Such academic events benefit the students, teachers and researchers immensely and widen the horizons of their knowledge.

Best Wishes

Dr. D V Sreekanth

Dean Administration

Dr. R. Santhoshkumar
Associate Professor & HOD



MESSAGE

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

The aim of the 2nd **"International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 23) being conducted by the Department of Computer Science and Engineering of SMEC, is to create a platform for academicians and researchers to exchange their innovative ideas and interact with researchers of the same field of interest. This will enable to accelerate the work to progress faster to achieve the individuals end goals, which will ultimately benefit the larger society of India.

We, the organizers of the conference are glad to note that more than 200 papers have been received for presentation during the online conference. After scrutiny by specialist 124 papers have been selected, and the authors have been informed to be there at the online platform for presentations. Steps have been to publish these papers with ISBN number in the Conference Proceedings and all the selected papers will be published in Scopus/UGC recognized reputed journals.

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

Dr. R. SANTHOSHKUMAR
HOD - CSE

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Dr. M. Vadivukarasi, Associate Professor, Dept. of CSE**.**

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PAPER ID: ICIRTCS-23-0097

Smart Convolutional Neural Networks (SCNN): Recognition of Human Activity using Wearable Sensors

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ABSTRACT

Several scientists have developed techniques for recognising human actions based on what they see. Illumination shifts in human activity recognition, interclass resemblance between scenes, environmental and record-setting shifts, and temporal variation are all challenges for the development of vision-based human activity recognition systems. Research into detecting human physical activities from sensor data, particularly one-dimensional time series data, is known as "Human Activity Recognition." With the use of 1D-Convolutional Neural Network (CNN) models, this study aims to introduce a unique approach to human activity recognition. This dissertation trains and evaluates a 1D- CNN model using the open-source Wireless Sensor Data Mining (WISDM) dataset. In addition, kernel based discriminant analysis (KDA) is utilised to better observe the clustering of features from various activity classes by reducing the amount of scattering with in each class and increasing the amount of scattering across classes. Neural Structured Learning (NSL), built on LSTM, is then used to model actions based on the robust time-sequential characteristics. On a public dataset, the suggested method has a recall rate of almost 98.1%. The highest recall rate of 94.2% is also compared to the results. For better comprehension of how individuals operate in a variety of settings, including homes, clinics, and workplaces, the comprehensive activity recognition system may be implemented. At 95.4%, the CNN model outperforms both baseline and state-of-the-art methods.

Keywords: Convolutional Neural Network, Recognition, Human Activity, Wearable Sensors, Neural Structured Learning.

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PAPER ID: ICIRTCS-23-001

Blockchain-Based Outsourced Storage Schema in Untrusted Environment

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ABSTRACT

Due to its ease of use, low overhead, and high flexibility, the cloud service provider (CSP)'s outsourced data service is gaining a lot of attention in both industry and academia. In this project, we concentrate on the issue of providing a dependable outsourced data service to multiple CSPs in an untrusted environment. More specifically, we want to know how to dependable store and verify the metadata of data replications in an untrusted environment with multiple CSPs. We create a reliable outsourced service platform by utilizing cutting-edge blockchain technology as a medium to address the issue. In addition, we take into account the novel aspects of blockchain, such as its decentralized architecture, redundant storage, collective maintenance, and tamper resistance, to guarantee that the data cannot be altered maliciously. First, we create a blockchain-based outsourced service framework with three key layers—a storage layer, a verification layer, and a blockchain layer—for storing data replications in an untrusted environment. After that, we come up with a novel idea for verification peers (VPs) to keep track of metadata stored on a type of blockchain. Each VP holds the entire blockchain locally to keep metadata from being tampered with maliciously. Lastly, we introduce a collaborative algorithm that VPs use to store and verify replication metadata based on the proposed model. On a multi-CSP scenario, we conduct extensive experiments and present a finished analysis. The results of the evaluation show that our proposed method performs better.

Keywords: CSP,VP, Metadata, untrusted environment, decentralized, tamper resistance..

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PAPER ID: ICIRTCS-23-002

Blockchain E-Voting Done Right: Privacy and Transparency with Public Blockchain

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ABSTRACT

Some forms of voting have been here ever since. Mostly used form all over the world are paper ballots. Electronic voting schemes are being popular only in the last decade and they are still unsolved. E-voting schemes bring problems mainly regarding security, credibility, transparency, reliability, and functionality. Estonia is the pioneer in this field and may be considered the state of the art. But there are only a few solutions using blockchain. Blockchain can deliver an answer to all of the mentioned problems and furthermore bring some advantages such as immutability and decentralization. The main problems of technologies utilizing blockchain for e-voting are their focus on only one field or lack of testing and comparison. In this project, we present a blockchain based e- voting platform, which can be used for any kind of voting. The data are fully transparent,but the identity of voters is secured by homomorphic encryption. We have tested and compared our solution in three different blockchains. The results show, that both public and private block chains can be used with only a little difference in the speed. The key novelty of our solution is a fully decentralized management of e-voting platform throughblock chain, transparency of the whole process and at the same time security and privacyof the voters thanks to homomorphic encryption.

Keywords: E-voting, blockchain, immutability, decentralization, transparency, homomorphic encryption.

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PAPER ID: ICIRTCS-23-003

Smart Vehicle with Finger Print Access System

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ABSTRACT

Biometric system is a technological system that uses information about a person to identify such the person. It relies on specific data about unique biological trait to work effectively. This system involves running data through algorithms for a particular result, usually related to a positive identification of a user or other individuals. These eliminates the need for keeping trackof keys or remembering a combination password, or PIN. This report focuses on the use of fingerprints to unlock locks, as opposed to the established method of using keys. To prevent unauthorized access to these devices, passwords and other pattern-based authentication methodare being used in recent time. However, password-based authentication has an intrinsic weakness in password leakage. While the patterns are easy to steal and reproduce. In this paper,we introduce an implicit authentication approach that enhanced the password pattern with additional security layer. Biometric systems have overtime served as robust security mechanisms in various domains. Fingerprints are the oldest and most widely used form of biometric identification. Most of the advanced vehicle security systems best suit the four wheelers. As of the security system for two wheelers is concerned, the systems available in market are of no match to the well-equipped thieves. When under attack, these systems can onlyimmobilize the engine and sound a loud alarm. The proposed reliable and robust design of Vehicle Security System with features enhancing the security of the vehicle and ensuring the safety of the rider
.

Keywords: Vehicle security, Biometric system, Arduino, Fingerprint

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PAPER ID: ICIRTCS-23-004

Fan Speed Control Based on Temperature for Public Place to Save Power

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ABSTRACT

This project is a standalone automatic fan speed controller that controls the speed of an electric fan according to our requirement. Use of embedded technology makes this closed loop feedback control system efficient and reliable. Microcontroller (ATMega8 / 168 / 328) allows dynamic and faster control. Liquid crystal display (LCD) makes the system user-friendly. The sensed temperature and fan speed level values are simultaneously displayed on the LCD panel. It is very compact using few components and can be implemented for several applications including air-conditioners, water heaters, snow-milters, ovens, heat-exchangers, mixers, furnaces, incubators, thermal bath, and veterinary operating tables. ARDUINO micro controller is the heart of the circuit as it controls all the functions. The temperature sensor LM35 senses the temperature and converts it into an electrical (analog) signal, which is applied to the microcontroller. The sensed and set values of the temperature are displayed on the 16x2-line LCD. The micro controller drives Transistor to control the fan speed. This project uses regulated 12V, 2A power supply. This project is useful in process industries for maintenance and controlling of Boilers temperature.

Keywords: Liquid Crystal Diode (LCD), LM35 Temperature Sensor, Arduino Uno, Internet of Things, Integrated Development Environment (IDE), Micro Controller.

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PAPER ID: ICIRTCS-23-005

Energy and Memory Efficient Clone Detection in Wireless Sensor Networks

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ABSTRACT

Wireless sensors have been widely deployed for a variety of applications, ranging from environment monitoring to telemedicine and objects tracking, etc. For example, a malicious user may compromise some sensors and acquire their private information. Then, it can duplicatethe sensors and deploy clones in a wireless sensor network (WSN) to launch a variety of attacks, which is referred to as the clone attack. We propose an energy-efficient location-aware clone detection protocol in densely deployed WSNs, which can guarantee successful clone attack detection and maintain satisfactory network lifetime. Specifically, we exploit the location information of sensors and randomly select witnesses located in a ring area to verify the legitimacy of sensors and to report detected clone attacks. The ring structure facilitates energy-efficient data forwarding along the path towards the witnesses and the sink. We theoretically prove that the proposed protocol can achieve 100 percent clone detection probability with trustful witnesses. We further extend the work by studying the clone detection performance with untruthful witnesses and show that the clone detection probability still approaches 98 percent when 10 percent of witnesses are compromised. Moreover, in most existing clone detection protocols with random witness selection scheme, the required buffer storage of sensors is usually dependent on the node density, i.e., O(Square Root(n)), while in our proposedprotocol, the required buffer storage of sensors is independent of n but a function of the hop length

Keywords: Sensor, tamper proof, wireless sensor network, clone attack, witnesses, ring structure, malicious user.

ISBN No. 978-93-91420-22-2

PAPER ID: ICIRTCS-23-006

Location Privacy Preservation in Database-Driven Wirelesscognitive Networks through Encrypted Probabilistic Data Structures

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ABSTRACT

In this project, we propose new location privacy preserving schemes for database- driven cognitive radio networks (CRN s) that protect secondary users' (SU s) location privacy while allowing them to learn spectrum availability in their vicinity. Our schemes harness probabilistic set membership data structures to exploit the structured nature of spectrum databases (DBs) and SU s' queries. This enables us to create a compact representation of DB that could be queried by SU s without having to share their location with DB, thus guaranteeing their location privacy. Our proposed schemes offer different cost performance characteristics. Our first scheme relies on a simple yet powerful two-party protocol that achieves unconditional security with a plausible communication overhead by making DB send a compacted version of its content to SU which needs only to query this data structure to learn spectrum availability. Our second scheme achieves significantly lower communication and computation overhead for SU s, but requires an additional architectural entity which receives the compacted version of the database and fetches the spectrum availability information in lieu of SU s to alleviate the overhead on the latter. We show that our schemes are secure, and also demonstrate that they offer significant advantages over existing alternatives for various performance and/or security metrics

Keywords: Location privacy, chcukoo filters, database server, query server.

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PAPER ID: ICIRTCS-23-007

Spammer Detect and Fake User Identification on Social Networks

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ABSTRACT

In this project, we are describing concept to detect spam tweets and fake user account from online social network called twitter. To perform detection we are using twitter dataset and 4 different techniques called Fake Content, Spam URL Detection, Spam Trending Topic and Fake User Identification. Using above 4 techniques we can identify whether tweet is normal or spam and then using Random Forest data Mining algorithm we will train above dataset to classify number of spam and non-spam tweets or fake or non-fake accounts. For each technique we are using different data mining techniques to classify tweets as spam or non-spam but here we are using Random Forest classifier. There is also a demand to combat and place a control on the people who use OSNs only for advertisements and thus spam other people's accounts. Recently, the detection of spam in social networking sites attracted the attention of researchers. Spam detection is a difficult task in maintaining the security of social networks. It is essential to recognize spams in the OSN sites to save users from various kinds of malicious attacks and to preserve their security and privacy.

Keywords: Spam tweets, Fake user account, Trending topics, Data set, and Random forest data mining algorithm.

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PAPER ID: ICIRTCS-23-008

Real Time Fire and Smoke Detection and Alert System

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ABSTRACT

Fire plays an important role in our daily life, but it is also a serious threat to human life and properties. Along with the growing science and technology, fire prevention technologies are also constantly innovating. This system is designed to detect the fire and smoke at the earlystageandnotifythenearestfirestationthroughapushnotification.Ten silica ESP 8266 processor is used as the brain of the system. The appearance of the fire is often accompanied by the generation of smoke. Actually in the early stages of the fire, a lot of smoke is produced due to the fuel temperature and combustion is not high enough. Smoke cannot be covered by a large area, and the mobility is relatively high. If the fire can be detected before the occurrence of fire and sent an early warning to the nearest fire station, the occurrence of fire and a large area spreading of fire can be avoided so as to reduce people's material and financial damage. A real time fire and smoke detection system can solve this issue and inform nearest fire station. This system is cheaper compared to all currently available systems in market. This real time fire and smoke detection system is designed to detect the fire and smoke at the early stage and notify the nearest fire station through a push notification. The notification contains the fire or smoke warning and the location information's. Tensilica ESP 8266 processor is used in this system. This processor is selected for the system only because it contains a built in Wi-Fi and is available at a cheap cost.

Keywords: Tensilica ESP 8266, Node MCU, Fire Sensor, Buzzer, Arduino IDE, Smoke Sensor, Fire Detection, Smoke Detection, Micro controller..

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PAPER ID: ICIRTCS-23-009

Blockchain Based Online E-Commerce Application

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ABSTRACT

With the rapid advancement of cryptography and distributed computing systems, blockchain technologies are highly anticipated to transform many industries with better transparency, high security, and low transaction costs. However, the scalability and performance of blockchains are limiting their utility and suitability in online services, especially e-commerce. This project provides a survey of blockchain technologies to highlight their benefits and challenges in online shopping. We, therefore, propose two blockchain-based e-commerce applications with detailed design guidelines: social shopping and loyalty program. the whole foundation of e-commerce is based on the online transfer of goods and transactions without the need to travel. Transferring transactional data and transactions in e-commerce are prone to cyber threats. Our research's major objective is to develop a system that protects against such mishaps, especially during the transfer of transactional data, and also implement an automated system that ensures these transactions occur without any errors. To implement this, we are taking advantage of new emerging technologies called blockchain and smart contract. Blockchain allows a decentralized, immutable digital ledger to safely store and transfer data across the network. Blockchain technology is used in e-commerce to transfer transactions in a safe, secure, and faster way. Blockchain enables a peer-to-peer transaction system and data encryption that enables the safe transfer of transactional data.

Keywords: Cryptography, Blockchain, Digital Ledger, Peer to peer transactions, Encryption, E-commerce, Online shopping.

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PAPER ID: ICIRTCS-23-010

Embedded System for Hazardous Gas Detection and Alerting

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ABSTRACT

There have been many incidents like explosions and fire due to LPG gas leakage. Such incidents can cause dangerous effects if the leakage is not detected at an early stage. Arduino and IoT based LPG leakage detection system is a project which will help in determining gas leakage in the surrounding and send data to an IOT module. Internet of Things (IoT) is the networking of 'things' by which physical things can communicate with the help of sensors, electronics, software, and connectivity. These systems do not require any human interaction and same is the case with IoT based gas detection system, it does not require human attention. Safety plays a major role in today's world and it is necessary that good safety systems are to be implemented in places of education and work. This work modifies the existing safety model installed in industries and this system also be used in homes and offices. The main objective of the work is designing microcontroller based toxic gas detecting and alerting system. The hazardous gases like LPG and propane were sensed and displayed each and every second in the LCD display. If these gases exceed the normal level then an alarm is generated immediately and also an alert message (SMS) is sent to the authorized person through the GSM. The advantage of this automated detection and alerting system over the manual method is that it offers quick response time and accurate detection of an emergency and in turn leading faster diffusion of the critical situation.

Keywords: Air pollution monitoring, gas sensors, GSM modules, wireless network.

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PAPER ID: ICIRTCS-23-011

Smart Home using Bluetooth

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ABSTRACT

In modern day's everyone using smartphones and the internet. Therefore, every smartphone has Bluetooth System. In this project, we will design a simple Arduino Bluetooth Control Home Automation using the HC-05 Bluetooth module, which is used to switch ON or OFF different electrical appliances remotely. Home Automation system can make our life easy and secure. Home automation is constructing automation for a domestic, mentioned as a sensible home or smart house. In the home automation ecosystem, you can control your devices like light, fan, TV, etc. Here we will control 18 different home appliances using Smartphone App through Bluetooth communication. The communication between the cell phone and the Arduino BT board is wireless. This system is designed to be low cost and scalable allowing variety of devices to be controlled with minimum changes to its core. Technology is a never-ending process. To be able to design a product using the current technology that will be beneficial to the lives of others is a huge contribution to the community. This work presents the design and implementation of a low cost but yet flexible and secure cell phone-based home automation system.

Keywords: Arduino BT

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Iot Based Attendance Management System using Rfid

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ABSTRACT

Attendance management is one of the most crucial tasks in an educational institution- school, college, or university. Daily student attendance allows teachers to keep a tab on students' activities. It also enables parents to understand whether their children are attentive towards studies & attend their class regularly. However, managing the daily attendance of thousands of students is quite a challenging task for teachers. Traditional means of registering daily students' attendance may result in errors & tremendous manual work. An RFID based attendance system can be a great solution to overcome such challenges as it automates the students' attendance process & enables teachers and parents to track & monitor students' activities effortlessly. Besides student attendance management, the RFID attendance system can also be used to track the attendance of faculty or staff to simplify the payroll management procedure.

Keywords: Attendance Management, RFID, Automate, Payroll Management.

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PAPER ID: ICIRTCS-23-013

Iot and Wireless Sensor Network Based Autonomous Farming Robot

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ABSTRACT

Agri-bot is a gadget that makes complex tasks easy to perform by making use of software programs. It substitutes the convectional techniques to perform similar tasks with more efficiency. Affixing automation in agriculture has helped create various advancements to the industry, it saves farmer's time and money. By making use of Bluetooth medium of an android smartphone the agricultural robot can be monitored. The sensors interfaced with microcontroller and motors designs the entire calculation process, monitoring and processing. Usually people are careless to water the plants on their gardens and rooftops daily, this part explains an in complex and appealing automatic plant watering system which can be built by ourselves in just few hours, by making use of an IR sensor, automatic plant watering system is created, which is based on raspberry and raspberry pi.These agribots can be used for harvesting pesticide spraying, controlling weed and manyother applications.

Keywords: Agri-Bot, Bluetooth, IR Sensor, automation.

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PAPER ID: ICIRTCS-23-014

Interactive Intelligent Shopping Cart using Iot

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ABSTRACT

The various items are purchase in shopping mall or markets with help of shopping trolley. This product acquirement is some difficult process. In customer convenience they must pull the trolley for each time to collecting items and simultaneously. After purchasing, customer want to pay the bill for their purchasing. In that time, they must wait in a long queue to get their products scanned using RFID reader with help of barcode Scanner and get their billed. To modify that and customer must purchase in smart way in shopping mall. Each product must place a RFID barcode to scan the product with RFID reader. The smart trolley will consist of a RFID reader, LCD display. When customer if want to buy any product is insert in the trolley. It will scan and read the product and display the cost and the name of the product in LCD. The total cost of all the purchased products will be added to the final bill, in that final bill will be saved in the Node MCU will be act as a memory. These are all performed in the trolly.

Keywords: Shopping trolley, RFID reader, RFID cards, LCD display, Node MCU, Wi-Fi module, Billing system using RFID technology.

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PAPER ID: ICIRTCS-23-015

A Time Frequency Based Suspicious Activity Detection for Anti-Money Laundering

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ABSTRACT

This project mainly concentrates on the implementation of a Detection of Anti-Money Laundering. Money laundering is the crucial mechanism utilized by criminals to inject proceeds of crime into the financial system. The primary responsibility of the detection of suspicious activity related to money laundering is with the financial institutions. Most of the current systems in these institutions are rule-based and ineffective (over 90 % false positives). The available data science-based anti-money laundering (AML) models to replace the existing rule-based systems work on customer relationship management (CRM) features and time characteristics of transaction behaviour. Due to thousands of possible account features, customer features, and their combinations, it is challenging to perform feature engineering to achieve reasonable accuracy. Therefore, these features substantially improve the area under curve results (over 1%) of the existing data science-based transaction monitoring systems. Using time-frequency features alone, a false positive rate of 14.9% has been achieved, with an F-score of 59.05%. When combined with transaction and CRM features, the false positive rate is 11.85%, and the F-Score is improved to 74.06%.

Keywords: Anti-Money Laundering (AML)

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PAPER ID: ICIRTCS-23-016

Voice Based Heart Beat Monitoring and Alerting System for Elder People

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ABSTRACT

The main aim of this paper is to design a "Wireless Health Monitoring System" that can monitor our heart rate and SpO2 (oxygen-carrying haemoglobin in blood)/ Wireless Health Monitoring in a systematic manner. In this amplifying world, health is a very important topic for every human being and to monitor it is also a major thing to be done. Health professionals play a very big role for monitoring health of every individual, but nowadays the population is becoming large and it is very difficult for them to monitor health. In this pandemic situation, health is a most prior thing for every people around the world. There are many devices that has been already developed for monitoring health, but this device is very much convenient as well as efficient. For aged people monitoring them health by visiting Hospitals daily is a big burden and also, for new born it is very necessary for their regular check-ups. Looking into all these situations we have made a Device that can monitor our health wirelessly. This device basicallyconsists of Arduino Nano, OLED Display, MAX30100 Pulse oximeter, HC-05 Bluetooth Module along with two capacitors of different values and two Resistors of same value. In futureby adding more sensors this device can be more effective and it can have many new functions.

Keywords: SpO2, Heartbeat, Haemoglobin.

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PAPER ID: ICIRTCS-23-017

Iot and Wireless Sensor Network Based Autonomous Farming Robot

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ABSTRACT

The main aim of this paper is to design a "Wireless Health Monitoring System" that can monitor our heart rate and SpO2 (oxygen-carrying haemoglobin in blood)/ Wireless Health Monitoring in a systematic manner. In this amplifying world, health is a very important topic for every human being and to monitor it is also a major thing to be done. Health professionals play a very big role for monitoring health of every individual, but nowadays the population is becoming large and it is very difficult for them to monitor health. In this pandemic situation, health is a most prior thing for every people around the world. There are many devices that has been already developed for monitoring health, but this device is very much convenient as well as efficient. For aged people monitoring them health by visiting Hospitals daily is a big burden and also, for newborns it is very necessary for their regular check-ups. Looking into all these situations we have made a Device that can monitor our health wirelessly. This device basicallyconsists of Arduino Nano, OLED Display, MAX30100 Pulse oximeter, HC-05 Bluetooth Module along with two capacitors of different values and two Resistors of same value. In futureby adding more sensors this device can be more effective and it can have many new functions.

Keywords: Body Sensor Network, Pulse Oximeter, Micro controller, LCD.

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PAPER ID: ICIRTCS-23-018

Deep Learning Approach for Intelligent Intrusion Detection System

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ABSTRACT

An IDS is a proactive intrusion detection tool used to detect and classify intrusions, attacks, and violations of the security policies automatically at network-level and host-level infrastructure in a timely manner. Based on intrusive behaviours, intrusion detection is classified into network-based intrusion detection system (NIDS) and host-based intrusion detection system (HIDS). An IDS system which uses network behaviour is called as NIDS. The network behaviours are collected using network equipment via mirroring by networking devices, such as switches, routers, and network taps and analysed in order to identify attacks and possible threats concealed within in network traffic. An IDS system which uses system activities in the form of various log files running on the local host computer in order to detect attacks is called as HIDS.

***Keywords*:** Network-Based Intrusion Detection System (NIDS)

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PAPER ID: ICIRTCS-23-019

Fall Detection for Elderly People Using Machine Learning

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ABSTRACT

Health is the major worry, and its impalpability increases with increasing age. Thus, taking care of elders is a very important responsibility. In such a scenario, technology helps people by providing living assistance. One of the major causes of health degradation or death in elders is 'fall'. In this paper, a fall detection system based on machine learning is proposed. Now-a-days elderly people live alone at home because of poor conditions, different working culture of people and due to many other reasons. According to World Health Organization (WHO) studies,falls cause many accidental deaths. Greatest number of fatal falls is seen in adults older than 65leading to health problems or injuries. Thus, elderly people require attention at the times of emergencies at their residence because they cannot call for help due to lack of technology accessin rural areas or due to their physical conditions The system detects falls by classifying differentactivities into fall and non-fall actions. The dataset SisFall with a variety of activities of multiple participants is used to calculate features. Machine learning algorithms such as SVM and decision trees are used to detect falls on the basis of calculated features. The system acquiresaccuracy up to 96% by using a decision tree algorithm.

***Keywords*:** Health, living assistance, fall, non-fall, deaths, SVM, Decision Tree, calculated features, accuracy.

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PAPER ID: ICIRTCS-23-020

IOT Based Agri Soil Maintenance through Micro- Nutrients and Protection of Crops from Excess Water

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ABSTRACT

The productivity of the crop depends on the soil, fertilizers, and water. The fertilizers provide micronutrients for vegetable farming like nitrogen, zinc, and others. To meet the increasing demand for food, crops should be able to withstand the adverse effects produced by the environment and unpredictable sources. The structure of smart agriculture is similar to networks, which are designed in 3 layers. Sensor layer to get information about various parameters, products, and operating environment. Transport layer to communicate the obtained information in between the various devices and as well as to and from a remote server. Application layer to analyse, visualize and predict the data for further actions to be implemented. In the proposed system, it uses multilinear regression to predict the water levels and micro-nutrients that are excess for the crop cultivation because farmers need analog data, not digital data. So that they can take necessary precautionary steps to protect the field from getting damaged.

***Keywords*:** Microcontroller, Wi-Fi, Water Sensor, LCD Display.

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PAPER ID: ICIRTCS-23-021

Field Monitoring and Automation Using IOT in Agriculture

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ABSTRACT

Water is an essential component used for agriculture. Agriculture plays a vital role in the development of agricultural country. A farmer do cultivation by monitoring the fields day and night for watering the plants if the field is dry and draining of water when water is in excess quantities which causes harm to the crop and the soil To reduce burden to the farmer we come up with a solution called Smart Irrigation and draining system . Earlier system deals with only watering the crop without draining and our project deals with watering crop by checking soil moisture conditions and also draining of excess water from fields automatically by using the concept of IOT with the help of sensors and Arduino. The equipment's that are used in this system helps farmer to know about the status of fields. This project reduces human effort and avoids human monitoring in case of watering the crop and draining of excess water

***Keywords*:** DHT sensor, Water Level Sensor, Pump Motor, Micro controller, LCD.

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PAPER ID: ICIRTCS-23-022

Agriculture Insects Trapper for Crop Protection from Insects

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ABSTRACT

The impulsively fluctuating climatic conditions and the supplementary effects demand the protection of forestry and cultivation. Pests, bugs, and insects are the vital issues that distress the development of crop. Eventually, monitoring and trapping of bugs becomes a more challenging task. The traditional human operators execute surveys of the traps dispersed over the field at regular intervals. This encompasses more work, requires considerable time and is not consistent. It is not effective on economic grounds too. These limitations in the existing systems call for automation with affordable cost. An electronic trap for pest insects by an autonomous monitoring system using black lights (Ultraviolet) and LED lights is suggested in this paper. A statistical analysis is made on the probable time of high pest population and a trap with three layers of different thickness is designed to capture various sizes of prominent pests. A low-cost image sensor is used to capture the images of trapped pests and the images are sent to a remote-control station. The information thus acquired enhances the estimation of pest concentrations in farms. The entire analysis is carried out in paddy and brinjal fields and is supported by MSSRF (M S Swaminathan Research Foundation), Chennai.

***Keywords*:** Liquid Crystal Diode (LCD), Light dependent resistor, Ultra violet light emitting diodes (UV LED's), Arduino Uno, Internet of Things, Integrated Development Environment (IDE), Micro Controller.

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PAPER ID: ICIRTCS-23-023

Pathole Detection and Alert System for Vehicles

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ABSTRACT

One among the main problems in developing countries is maintenance of roads. Roads are the heart of a country. Roads connect schools, hospitals, industries and everything else and are the core of any development agenda... The roads' condition and effort put into maintaining roads reflects the country's economic status. Road maintenance is thus a vital concept and includes identifying and correcting abnormalities on the roads such as potholes to potentially avoid accidents and the casualties that might be caused as a result. In view of the above problems and taking into account some earlier methods considered a cost- effective solution is presented to find potholes and alert of them to the driver. The depth of the potholes on the road can be effectively measured using an Ultrasonic sensor. Dangerous conditions can also arise from the poor physical condition of a road and its surroundings. It may cause road accidents. Also while driving in the night just the headlights might not be a sufficient assistance for driver. Unexpected hurdles on road may cause more accidents. Also because of bad road conditions, fuel consumption of the vehicle increases causing wastage of precious fuel. We proposed this system 'Pothole and hump Detection and vehicle speed control System' to inform the driver about the pothole or hump and controlling the speed of vehicle.

***Keywords*:** Pothole and hump Detection.

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PAPER ID: ICIRTCS-23-024

Intelligent Video Surveillance System using Deep Learning

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ABSTRACT

During these recent years, applications of video surveillance have attracted more and more researchers. Particularly, many pieces of research are involved in the recognition and detection of human activities in general and especially abnormal activities. Abnormal activity detection plays a very important role in surveillance applications. To capture the abnormal activity of humans without the intervention of the system i.e. automatically captures the video can be implemented. This work proposes a framework for activity detection. First, we detect abnormal activity with humans in the surveillance stream using an effective CNN model. The detected individual is tracked throughout the video stream via an ultrafast object tracker called 'minimum output sum of squared error' {MOSSE), Next, for each Tracked individual, pyramidal convolutional features are extracted from two consecutive frames using the efficient LiteFlowNet CNN. Finally, a novel deep skip connection gated recurrent unit is trained to learn different temporal changes in the sequence of frames for activity recognition and detection.

***Keywords*:** Convolutional Neural Network(CNN), Probabilistic Neural Network(PNN) ,Minimum output sum of squared error (MOSSE), Support vector data description (SVDD), STAE (Spatial Temporal Auto Encoder),Hidden Markov Model (HMM).

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PAPER ID: ICIRTCS-23-025

A Recurrent CNN for Automatic Detection and Classification of Coronary Artery Plaque and Stenosis in Coronary Ct Angiography

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ABSTRACT

Various types of atherosclerotic plaque and varying grades of stenosis could lead to different management of patients with coronary artery disease. Therefore, it is crucial to detect and classify the type of coronary artery plaque, as well as to detect and determine the degree of coronary artery stenosis. This study includes retrospectively collected clinically obtained coronary CT angiography (CCTA) scans of 163 patients. In these, the centrelines of the coronary arteries were extracted and used to reconstruct multi-planar reformatted (MPR) images for the coronary arteries. To perform automatic analysis, a multi-task recurrent convolutional neural network is applied on coronary artery MPR images. First, a 3D convolutional neural network is utilized to extract features along the coronary artery. Subsequently, the extracted features are aggregated by a recurrent neural network that performs two simultaneous multiclass classification tasks. In the first task, the network detects and characterizes the type of the coronary artery plaque. In the second task, the network detects anddetermines the anatomical significance of the coronary artery stenosis. The results demonstratethat automatic detection and classification of coronary artery plaque and stenosis are feasible. This may enable automated triage of patients to those without coronary plaque and those with coronary plaque and stenosis in need for further cardiovascular workup.

***Keywords*:** Coronary CT Angiography (CCTA), Multi-Planar Reformatted (MPR), Convolutional Neural Network(CNN), Coronary Artery Disease(CAD).

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PAPER ID: ICIRTCS-23-026

Real Time Localized Air Quality Monitoring and Prediction through Mobile and Fixed IOT Sensing Network

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ABSTRACT

Air pollution and its harm to human health has become a serious problem in many cities around the world. In recent years, research interests in measuring and predicting the quality of air around people has spiked. Since the Internet of Things (IoT) has been widely used in different domains to improve the quality life for people by connecting multiple sensors in different places, it also makes the air pollution monitoring more easily than before. The traditional way of using fixed sensors cannot effectively provide a comprehensive view of air pollution in people's immediate surroundings, since the closest sensors can be possibly miles away. Our research focuses on modeling the air quality pattern in each region by adopting both fixed and moving IOT sensors, which are placed on vehicles patrolling around the region. With our approach, a full spectrum of how air quality varies in nearby regions can be analyzed. We demonstrate the feasibility of our approach in effectively measuring and predicting air quality using different machine learning algorithms with real world data. Our evaluation shows a promising result for effective air quality monitoring and prediction for a smart city application.

***Keywords*:** Air pollution, Air Quality Prediction, IOT Sensor.

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PAPER ID: ICIRTCS-23-027

Light Repository Blockchain System with Multisecret Sharing For Industrial Big Data

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ABSTRACT

Blockchain is an emerging technology that promises many exciting applications in various fields, including financial, medical, energy, and logistics management. However, there are still some limitations in the existing blockchain framework that prevents its widespread adoption in the commercial world. One important limitation is the storage requirement, wherein each blockchain node has to store a copy of the distributed ledger. Thus, as the number of transactions increases, this storage requirement grows quadratically, eventually limiting the scalability of a blockchain system. In this paper, a secret-sharing scheme is proposed to reduce the size of the blockchain transactions. Each transaction block is divided into t parts, and the size of each part is 1/ t size of transaction block. We use the secret-sharing mechanism to share t parts into n shares. Hence, each node stores not one transaction but one share in the blockchain system. The proposed scheme can eventually reduce the storage cost of a blockchain transaction by 1/ t without introducing an additional recovery communication cost; however, robustness is reduced in node failure as a trade-off. Meanwhile, the proposed scheme was more efficient and secure compared to other state-of-the-art schemes that aim to reduce blockchain storage for industrial big data.

***Keywords*:** Blockchain, ledger, secret-sharing, big data.

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PAPER ID: ICIRTCS-23-029

Monitoring Covid-19 Social Distancing With Person Detection and Tracking via Fine-Tuned Yolo V3 and Deep Sort Techniques

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ABSTRACT

The rampant corona virus disease 2019 (COVID-19) has brought global crisis with its deadly spread to more than 180 countries, and about 3,519,901 confirmed cases along with 247,630 deaths globally as on May 4, 2020. The absence of any active therapeutic agents and the lack of immunity against COVID19 increase the vulnerability of the population. The proposed framework utilizes the YOLO v3 object detection model to segregate humans from the background and Deep sort approach to track the identified people with the help of bounding boxes and assigned IDs. The results of the YOLO v3 model are further compared with other popular state-of-the-art models, e.g. faster region-based CNN (convolution neural network) and single shot detector (SSD) in terms of mean average precision (map), frames per second (FPS) and loss values defined by object classification and localization. Later, the pair wise vectorised L2 norm is computed based on the three-dimensional feature space obtained by using the centroid coordinates and dimensions of the bounding box. The violation index term is proposed to quantize the non adoption of social distancing protocol. From the experimental analysis, it is observed that the YOLO v3 with Deep sort tracking scheme displayed best results with balanced map and FPS score to monitor the social distancing in real-time.

***Keywords*:**Deep sort technique, Yolo v3 Algorithm, Fine-tuned, Social distancing, Covid-19.

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PAPER ID: ICIRTCS-23-028

Implementation of Speech Based Home Automation Using Bluetooth

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ABSTRACT

Home automation means controlling of home functions and features automatically and sometimes remotely using one or more computers. An automated home is also called as a smart home. Speech based home automation uses human voice commands to operate the electrical appliances in the home. In this work, we present the implementation details of two schemes for speech-based home automation and control. The first scheme uses the Bluetoothtechnology for controlling of electrical appliances when we are at home. It uses a HC-05 Bluetooth module and Arduino Bluetooth controller mobile application for switching on or off the appliances. The second scheme uses GSM/GPRS technology for controlling the electrical appliances. The developed system also alerts the user about any intrusion into the house when we are away from the home. This system is implemented on ARM11 Raspberry Pi microcontroller board. Python integrated development environment (IDE) is used for developing the necessary software. Relays and bulbs are used as load to demonstrate the working of the prototype system. Home automation system gives accessibility, comfort, energy efficiency, security by providing control and monitoring of appliances, securitysurveillance.

***Keywords*:** Used in homes, offices, etc... Mainly used for elderly, physically disabledpeoples. Smart Home Appliances Lighting Control Improved Home Safety and Security

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PAPER ID: ICIRTCS-22-030

Secure Data Sharing and Searching At the Edge of Cloud Assisted IOT

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ABSTRACT

Smart gadgets can now communicate from close to a long distance with one another and with the Internet or cloud. As a result, the Internet of Things represents a brand-new paradigm (IoT).However, by employing cloud computing, resource-constrained IoT smart devices can gain a number of advantages, such as offloading the burden of data processing and storage to the cloud. Working at the network's edge offers more advantages than using the cloud for IoT applications that require high data rates, mobility, and latency-sensitive real-time data processing. In this paper, we suggest a productive data-sharing system that enables smart devices to safely communicate data with others at the edge of cloud-assisted IoT. We also suggest a secure searching method to look for desired data among one's personal or shared data on storage. Finally, we evaluate the processing-time performance of our suggested approach. The outcomes show that our strategy has a chance of working well in IoT applications. Because security-oriented operations will increase the heavy computational burden, IoT's resource-constrained smart devices cannot handle these computation-intensive operations.

***Keywords*:** Internet of Things(IoT)

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Home Automation Systems Control using TV Remote

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ABSTRACT

Traditionally electrical appliances in a home are controlled via switches that regulate the electricity to these devices. As the world gets more and more technologically advanced, we find new technology coming in deeper and deeper into our personal lives even at home. Home automation is becoming more and more popular around the world and is becoming a common practice. Home automation takes care of a lot of different activities in the house. The main objective of this project is that we are controlling our home appliances using a simple circuit. That circuit consist of a IR module. The appliance to be controlled is connected between the pole of the relay and neutral terminal of mains. It gets connected to live terminal of AC mains via normally opened (N/O) contact when the relay energises. Our project is a Remote Operated Home Appliance or Remote controlled Home appliance. The circuit is connected to any of the home appliances (lamp, fan, radio, etc) to make the appliance turn on/off from a TV, VCD, VCR, Air Conditioner or DVD remote control. The circuit can be activated from up to 10 meters. It is very easy to build and can be assembled on a general-purpose PCB. The circuit essentially consists of a transmitter consisting of a 555 IC, the receiver consisting of an IR module, CD4017 IC, LED‟s to indicate the reception of the IR radiations, otherwise indicatingthe ON/OFF state, relay and other components.

***Keywords*:** Arduino IDE, Digital to Analog converter (DAC), ESP12E(Express if system), Microcontroller, Transformer.

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PAPER ID: ICIRTCS-23-032

A Deep Learning Facial Expression Recognition Based Scoring System for Restaurants

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ABSTRACT

Recently, the popularity of automated and unmanned restaurants has increased. Due to the absence of staff, there is no direct perception of the customers' impressions in order to find out what their experiences with the restaurant concept are like. For this purpose, this paper presents a rating system based on facial expression recognition with pre-trained convolutional neural network (CNN) models. For interactive human and computer interface (HCI) it is important that the computer understand facial expressions of human. With HCI the gap between computers and humans will reduce. The computers can interact in more appropriate way with humans by judging their expressions. There are various techniques for facial expression recognition which focuses on getting good results of human expressions and then the food is supposed to be rated. Currently, three expressions (satisfied, neutral and disappointed) are provided by the scoring system

***Keywords*:** Covolutional Neural Network (CNN), Human and Interface(HCI), FacialExpression

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PAPER ID: ICIRTCS-23-033

Feature Extraction for Classifying Students Based on the Academic Performance

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ABSTRACT

Deep Learning and Educational data have gained a considerable amount of attention in these past years. In this Project, Neural Network (NN) model is proposed that shows students which class category it belongs to. This provides knowledge to the institution so that they can offer a remedy to the potential failing students. The applications of Machine Learning methods to predict students' performance based on student's background and term examination performances has turn to be helpful for foreseeing the different performance in various level. Using such machine learning methods enables to timely predict the students who has a high chance of failing so that a remedy can be provided by a teacher to the student. we will predict student's yearly performance in the form of Cumulative Grade Point Average (CGPA) using neural network and compare that with real CGPA. It can even help to detect high caliber students of the institution and help him providing scholarship. Decision tree algorithms are applied on students' past performance data to generate the model and this model can be used topredict the students' performance. A comparison with existing machine learning algorithm which uses the same dataset with the proposed model. The proposed neural network model achieved more accuracy and outperforms other machine learning algorithms in accuracy.

***Keywords*:** Neural Network, CGPA, Decision Tree Algorithms.

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PAPER ID: ICIRTCS-23-034

Towards Secure Industrial IOT: Blockchain System with Credit-Based Consensus Mechanism

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ABSTRACT

Industrial Internet of Things (IIoT) plays an indispensable role for Industry 4.0, where people are committed to implement a general, scalable, and secure IIoT system to be adopted across various industries. However, existing IIoT systems are vulnerable to single point of failure and malicious attacks, which cannot provide stable services. Due to the resilience and security promise of blockchain, the idea of combining blockchain and Internet of Things (IoT) gains considerable interest. However, blockchains are power-intensive and low-throughput, which are not suitable for power-constrained IoT devices. To tackle these challenges, we present a blockchain system with credit-based consensus mechanism for IIoT. We propose a credit-based proof-of-work (PoW) mechanism for IoT devices, which can guarantee system security and transaction efficiency simultaneously. In order to protect sensitive data confidentiality, we design a data authority management method to regulate the access to sensor data. In addition, our system is built based on directed acyclic graph -structured blockchains, which is more efficient than the Satoshi-style blockchain in performance. We implement the system on Raspberry Pi, and conduct a case study for the smart factory. Extensive evaluation and analysis results demonstrate that credit based PoW mechanism and data access control are secure and efficient in IoT.

Keywords: Blockchain , Industrial Internet of Things (IIoT) , Internet of Things (IoT) ,proof-of-work (PoW) , Directed Acyclic Graph(DAG)

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PAPER ID: ICIRTCS-23-035

Implementation of Block Chain in Financial Sector to Improve Scalability

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ABSTRACT

A Blockchain is a distributed ledger shared between nodes within a computer network. As a database, a blockchain stores information electronically in a digital format. Blockchain is best known for keeping a secure and decentralized ledger of transactions. Including Blockchain in an application ensures the legality and security of a data record; it also generates trust without the necessity of a trusted third party. Blockchain works on improving data storage and transmutation security; As a result, a decentralized and transparent network infrastructure is developed that drastically reduces operating costs. These remarkable features make Blockchain an outstanding and sought-after solution, even in an industry like banking. The digitization of financial instruments – comprising digital assets, smart contracts, and programmable money – takes the benefits of Blockchain further by forging unprecedented levels of connectivity and management of products, services, assets, and holdings. These digitized instruments will redefine commercial and financial market processes, creating a new paradigm in which value is produced at each point of contact. This work explores the potential use of Blockchain Technology in the financial sector through a simple banking application.

***Keywords*:** Blockchain, Byzantine Fault Tolerance (BFT), Decentralized Finance, Digital Ledgers, Crypto-Currency, Smart-Contracts, Solidity, Ethereum.

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PAPER ID: ICIRTCS-23-036

A Deep Transfer Learning Based Edge Computing Method for Fall Detection Monitoring

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ABSTRACT

The health-care gets huge stress in a pandemic or epidemic situation. Some diseases such as COVID-19 that causes a pandemic is highly spreadable from an infected person to others. Therefore, providing health services at home for noncritical infected patients with isolation shall assist to mitigate this kind of stress. In addition, this practice is also very useful for monitoring the health-related activities of elders who live at home. The fall detection monitoring, a continuous monitoring of a patient or elder at home using visual sensors is one such nonintrusive sub-area of health services at home. In this project, we propose a transfer learning-based edge computing method for fall detection monitoring. Specifically, a pre-trained convolutional neural network-based model can leverage edge devices with a small amount of ground-labeled data and fine-tuning method to train the model. Therefore, on-site computing of visual data captured by RGB, depth, or thermal sensor could be possible in an affordable way. As a result, raw data captured by these types of sensors is not required to be sent outside from home. Therefore, privacy, security, and bandwidth scarcity shall not be issues. Moreover, real-time computing for the above-mentioned purposes shall be possible in an economical way.

***Keywords*:** AI-enabled Health Monitoring, Ambient Intelligence, Computer Vision, COVID-19 Pandemic, Deep Learning, Edge Computing, Transfer Learning, Visual Sensors.

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PAPER ID: ICIRTCS-23-037

Density Based Street Light Controller for Making Villages Smart

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ABSTRACT

Now-a-days the amount of power consumed by lighting and streets shares a major energy demand. The vehicles are passing over always and a part of places will be consisting of less density areas and even no vehicle moments itself in few areas. But during night all street lights will be on in conventional street lighting system. To overcome from this issue, a proper energy saving methods and lighting control to be implemented. The proposed work is to have two controls like, one is to switch of lights during no vehicle moments in streets and automatically switch it on when vehicles arrive and the other modes are to give less intensity light for pedestrian and to switch on bright mode during vehicle moments at sides on the roads. In this work the LED lights are used for street arrangement, the Photo diodes and IR sensors are used to sense vehicle moments. The control signals of sensors have been fed to microcontroller 8051. In the microcontroller the control logic is implemented to control lights based on vehicles and pedestrian moments with bright and dim mode of operation and to switch off lights during no vehicles and pedestrian. From the proposed method the overall energy being utilized now-a-days for lighting can be minimized. Moreover the automatic and intelligent control schemes are required to control the complex lighting system due to growth of cities and standard of living.

***Keywords*:** LCD,LED, Microcontroller, LDR, VR(voltage regulator), HID(High density discharge),IR(infrared sensor), WNS(wireless sensor network)

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PAPER ID: ICIRTCS-23-038

Intelligent Intrusion Detection System Using DNN

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ABSTRACT

Machine learning techniques are being widely used to develop an intrusion detection system (IDS) for detecting and classifying cyber-attacks at the network-level and host-level in a timely and automatic manner. However, no existing study has shown the detailed analysis of the performance of various machine learning algorithms on various publicly available datasets. In this project, deep neural network (DNN), a type of deep learning model is explored to develop flexible and effective IDS to detect and classify unforeseen and unpredictable cyber-attacks. The continuous change in network behaviour and rapid evolution of attacks makes it necessary to evaluate various datasets which are generated over the years through static and dynamic approaches. Finally, we propose a highly scalable and hybrid DNNs framework called Scale-Hybrid-IDS-AlertNet (SHIA) which can be used in real time to effectively monitor the network traffic and host-level events to proactively alert possible cyber-attacks.

Keywords: Intrusion Detection system, Machine Learning, Deep Learning, Deep Neural Networks, cyberattacks.

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Android Mobile Phone Controlled Robot

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ABSTRACT

The project aim is to design an android interface, Arduino bot and write program into the Arduino microprocessor. Arduino car contains Arduino microcontroller with basic mobility features. Arduino programs contains instructions mediating between android controller and Arduino car. Android mobile controller uses different mobile sensors to supervise motion. An appropriate program in the Arduino microprocessor to interact with the android controller has to be created. The program has been successfully complied through Arduino IDE to the Arduino microprocessor & loaded into it after proper checking of logic to decrease any loss/damage of hardware. We must create an android application that will provide user an interface to interact with the Arduino powered car. The interface is easy to use and provide feedback from the Arduino microprocessor through the Bluetooth after giving instruction to Arduino for various actions through interface via Bluetooth module. The android application is to create with the help of android studio that provide us with more capability & stability. After doing all of this we have test this project thoroughly and find the maximum no. of error & wrong logic in the microprocessor program. After doing this only we can say that we have been able to create as per our goal described.

***Keywords*:** Microcontroller, ESP32 , L293D Driver , Motors, Transformer, Power Supply , Bluetooth HC05,Integrated Development Environment(IDE)

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Accident Identification System and Locating Using Gsm and GPS

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ABSTRACT

Increment in population is the significant purpose behind quick development of innovation and vehicles, which is additionally liable for some number of accidents in this quick moving world. Numerous passing is caused because of absence of crisis administrations. Along these lines, in this undertaking we intend to give crisis administrations to the individual who meet with an accident as quickly as time permits. At the point when a vehicle meets with a accident, promptly the accelerometer sends varieties to the Arduino and subsequently the Arduino sends the alarm message through the GSM MODULE, including the area which is distinguished by GPS MODULE to recently shared crisis contacts. In the event that the mishap is not serious, at that point the alarm message can be ended by the driver by a key gave. This paper points in giving crisis benefits as quickly as time permits for future extension, we include numerous applications like liquor recognition and rest discovery.

Keywords: Accident, GPSModule, GSM Module, Accelerometer, Arduino,Sensors

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PAPER ID: ICIRTCS-23-041

QOS - Aware Fog Resource Provisioning and Mobile Device Power Control in IOT Networks

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ABSTRACT

Fog-aided Internet of Things (IoT) addresses the resource limitations of IoT devices in terms of computing and energy capacities, and enables computational intensive and delay sensitive tasks to be offloaded to the fog nodes attached to the IoT gateways. A fog node, utilizing the cloud technologies, can lease and release virtual machines (VMs) in an on-demand fashion. For the power-limited mobile IoT devices (e.g., wearable devices and smart phones), their quality of service (QoS) may be degraded owing to the varying wireless channel conditions. Power control helps maintain the wireless transmission rate and hence the QoS. The QoS (i.e., task completion time) is affected by both the fog processing and wireless transmission; it is thus important to jointly optimize fog resource provisioning (i.e., decisions on the number of VMs to rent) and power control. Our work addresses this joint optimization problem to minimize the system cost(VM rentals) while guaranteeing QoS requirements, formulated as a mixed integer non linear programming (MINLP) problem. An approximation algorithm is then proposed to solve theproblem.An ever-increasing number of services are provisioned for mobile IoT devices (e.g., wearable devices and smart phones), including cognitive assistance, face recognition, object recognition, etc. Owing to the resource-limited IoT devices, the computing tasks are usually offloaded to fog nodes for processing. Hence, the communication between advice and its corresponding fog node should be efficient.

Keywords: QoS (Quality of Service), MINLP (Mixed Integer nonlinear programming, VM (VirtualMachines), IoT (Internet of Things).

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PAPER ID: ICIRTCS-23-042

Finger Print based Bank Locker Security System

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ABSTRACT

Many of the systems available today, allowing the entrance only to those persons who know a specific code, own a card or have determined physic marks. The more complex is the system, the most difficult is to be attacked, although it will be more expensive and will require more software and hardware resources. The password method is the cheapest and simplest technology, because it only requires elementary software resources. On the other hand, this system is easily attackable, since it is quite simple to obtain the password data from a person. The Smart Cards based systems are very useful, but used like the only identification system, are not excessively trustworthy, since cards can be easily stolen, lost or simply forgotten at home. Our system is going to use fingerprint from pc as password for authentication. The advantage of biometrics is that the information is unique for each individual and that it can identify the individual in spite of variations in the time (it does not matter if the first biometric sample was taken year ago). The advantage of our system is that, it not only collects single fingerprint from user as password. Instead, our system will randomly collect few fingerprints from either hands of the user and gives authentication. Since the biometric data cannot be stolen, the system would be safe and secured.

Keywords: Fingerprint, Microcontroller, LCD, Buzzer, Servo Motor.

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PAPER ID: ICIRTCS-23-043

Inference Attack on Browsing History of Twitter Users using Public Click Analytics and Twitter Meta Data

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ABSTRACT

Twitter is a popular online social network service for sharing short messages (tweets) among friends. Its users frequently use URL shortening services that provide (i) a short alias of a long URL for sharing it via tweets and (ii) public click analytics of shortened URLs. The public click analytics is provided in an aggregated form to preserve the privacy of individual users. In this paper, we propose practical attack techniques inferring who clicks which shortened URLs on Twitter using the combination of public information: Twitter metadata and public click analytics. Unlike the conventional browser history stealing attacks, our attacks only demand publicly available information provided by Twitter and URL shortening services. Evaluation results show that our attack can compromise Twitter users' privacy with high accuracy.

Keywords–Twitter, URL

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PAPER ID: ICIRTCS-23-044

Garbage Monitoring and Auto Alerting System to Municipality

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ABSTRACT

Because of urbanization, a lot of waste accumulates in major metropolitan towns and developed regions, and strong waste control is a major challenge confronted by municipalities, wherein the accumulated dirt must be well disposed of as soon as possible to keep the environment clean. When done manually, this work requires a large amount of manpower. So, if you want to solve this problem, we use an IoT technology-based project in which the device detects the amount of waste amassed within the bins and when the bin is full, it indicates to the concerned government to ease the packing containers and keep the environment clean. This undertaking describes the advent of a smart garbage monitoring system that measures waste tiers in garbage bins in actual time and signals the municipality, specifically through SMS. An ultrasonic sensor for measuring bin degrees and a GPS module for retrieving bin area information is used in this task. GSM module to send the message to the concerned government, with a Node MCU to control the entire process. When the waste bin is complete or almost complete, it is meant to generate and send SMS caution messages to the municipality so that the rubbish may be accumulated immediately. This could help the concerned government clean up the environment and keep it simple and tidy.

Keywords: Smart garbage monitoring system, GPS module, GSM module, Node MCU, SMS.

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Collaborative Key Management Protocol in Cipher Text Policy Attribute-Based Encryption for Cloud Data Sharing

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ABSTRACT

Cipher text policy attribute-based encryption (CP-ABE) is a promising cryptographic technique for fine-grained access control of outsourced data in the cloud. However, some drawbacks of key management hinder the popularity of its application. One drawback in urgent need of solution is the key escrow problem. We indicate that front-end devices of clients like smart phones generally have limited privacy protection, so if private keys are entirely held by them, clients risk key exposure that is hardly noticed but inherently existed in previous research. Furthermore, enormous client decryption overhead limits the practical use of ABE. In this paper, we propose a collaborative key management protocol in CP-ABE. Our construction realizes distributed generation, issue and storage of private keys without adding any extra infrastructure. A fine-grained and immediate attribute revocation is provided for key update. The proposed collaborative mechanism effectively solves not only key escrow problem but alsokey exposure. Meanwhile, it helps markedly reduce client decryption overhead. A comparison with other representative CP-ABE schemes demonstrates that our scheme has somewhat better performance in terms of cloud-based outsourced data sharing on mobile devices. Finally, we provide proof of security for the proposed protocol.

Keywords: Attribute Based Encryption, Cipher text Policy, Key Policy, Cloud Server, Collaborative Key Management

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An Automated Parking Allocation using IOT

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ABSTRACT

The main objective is to avoid the cramming in the car parking area by implementing an efficient car parking system along with a user-friendly application for an ease of use. Normallyat public places such as multiplex theatres, market areas, hospitals, function-halls, offices and shopping malls, one experiences the discomfort in looking out for a vacant parking slot, thoughit's a paid facility with an attendant/ security guard. The parking management system is proposed to demonstrate hazel free parking. The proposed system uses infrared transmitter- receiver pairs that remotely communicate the status of parking occupancy to the controller anddisplays the vacant slots on the display at the entrance of the parking so that the user gets to know the availability /unavailability of parking space prior to his/her entry into the parking place. Implementation involves minimal human interaction and provides a seamless parking experience thereby reducing a lot of time wasted by the user in parking his/her vehicle.

Keywords: Car parking

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Price Negotiating Chatbot on E-Commerce website

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ABSTRACT

In recent years online shopping has gained a huge boom. With this increase, most of the features of online shopping are developed but some features like negotiating with shopkeepers are not available which is sometimes possible in offline purchasing. We have implemented a chatbot for negotiating on the products. The chatbot interacts with customers and assists them to get a satisfactory price on product(s). With such a system, which impacts on major areas of online shopping there are possibilities in which either the seller of the product or customer's budget gets compromised. To avoid such situations we have developed an algorithm which works along with prediction of old available data to provide a price. Price prediction has less accuracy at times because either irrelevant features/attributes of data are used or some algorithms are not suitable for a particular dataset. Due to this, Ecommerce business does not directly rely on price prediction systems since even a wrong prediction of a single product can result in business losses. Some models also fail when data scales or some feature is unavailable after time on which model prediction was dependent. Then those changes are to be managed to maintain the accuracy and reliability of the model. In our chatbot system we have tried to resolve some of such issues.

Keywords: Chatbot

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PAPER ID: ICIRTCS-23-048

Smart Control of Traffic Lights using Artificial Intelligence

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ABSTRACT

Traffic light management is one of the intense technical hazards of urban areas in almost every country around the world. This is due to the speedy increase in the number of vehicles in order to decrease the time and complexity. The project developed by us will enable the traffic light to switch from red to green based on traffic density. The easy way to control a traffic light is by using the timer for each section since we proposed a system for controlling the traffic light by image processing. The system can notice vehicles through pictures and also the image sequence can then be analysed victimization digital image process for vehicle detection, and in line with traffic conditions on the road, stoplight will be controlled.

Keywords: Traffic light management

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PAPER ID: ICIRTCS-23-049

Ssla Based Traffic Sign and Lane Detection for Autonomous Cars

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ABSTRACT

The Self-Driving Cars are also known as Autonomous Vehicles. This Car can sense around the environment. These sensed parameters are processed and according to it the different actuators in the car will work without any human involvement. An Autonomous car work like a normal car but without any human driver. Autonomous cars rely on sensors, actuators, machine learning algorithms and Software to perform all the Automated Functions. The Software part is very important for Autonomous vehicles. The Software architecture acts as a bridge between Hardware Components and Application. The Standardized Software for Automotive cars is AUTOSAR. The AUTOSAR is a Standardized Architecture between Application Software and Hardware. This Standardized Architecture provide all Communication Interfaces, Device Drivers, Basic Software and Run-Time Environment. There are two important modules in Self-Driving Cars. They are Lane Detection and Traffic Signal detection which works automatically without any Human Intervention. A Machine Learning Algorithm is proposed in this paper. This Algorithm is mainly used to train the shape models and helps to detect the shape for TrafficSign detection and Lane Detection. These both tasks are programmed using python with Open cv2 library file, Matplotlib, NumPy library file and Hough Detection technique is used to detectthe appropriate circles of the traffic signals. By using all these tools, all the shape models are trained using supervised training Algorithm and the detection is performed in such a way to help Autonomous cars to detect the lane and traffic Sign.

Keywords: AUTOSAR, Matplotlib, NumPy, Open CV2, Hough Detection, Supervised Learning Algorithm.

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PAPER ID: ICIRTCS-23-055

Image Forgery Detection based on Fusion of Light Weight Deep Learning Models

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ABSTRACT

In recent years, digital image forgery detection has become an active research area due to the advancement of photo editing software. This paper focuses on passive forgery detection on images tampered using copy move technique, better known as Copy Move Forgery Detection (CMFD). A CMFD technique consisting of oriented Features from Accelerated Segment Test and rotated Binary Robust Independent Elementary Features (Oriented FAST and rotated BRIEF) as the feature extraction method and 2 Nearest Neighbor (2NN) with Hierarchical Agglomerative Clustering (HAC) as the feature matching method is proposed. Evaluation of the proposed CMFD technique was performed on images that underwent various geometrical attacks. With the proposed technique, an overall accuracy rate of 84.33% and 82.79% are obtained for evaluation carried out with images from the MICC-F600 and MICC-F2000 databases. Forgery detection achieved True Positive Rate of more than 91% for tampered images with object translation, different degree of rotation and enlargement.

Keywords: Copy Move Forgery Detection, Binary Robust Independent Elementary Features, 2 Nearest Neighbor, Hierarchical Agglomerative Clustering

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PAPER ID: ICIRTCS-23-056

Smart Sensorized Home

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ABSTRACT

Smart Home Wireless Sensor Networks (SHWSN) are now capable of incorporating large amounts of computing power to monitor the activities of its occupants and anticipate their needs. This work will give a snapshot on the state of the art in the smart home technology for elders and disabilities people. Also, it proposes a new Elders/Disabilities Wireless Smart Home for assistive independent living (E/D-WSH) with its approximate cost compared with the Indian home automation market. To provide information based on the user query often fail to land the required page because of the very short context text of the query. Heterogeneous data sources from the various domains in real world application are currently being described with multiple labels identified as multi-label entities. Efficient learning and constructing classifiers for heterogeneous datasets.

Keywords: Internet of things (IoT), Smart Home Wireless Sensor Networks, Smart Home Technology, Elders/Disabilities Wireless Smart Home, Indian Home Automation.

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PAPER ID: ICIRTCS-23-057

IOT Module for Air Quality Measurement

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ABSTRACT

This project discusses securities and cryptocurrency trading using artificial intelligence (AI) in the sense that it focuses on performing Exploratory Data Analysis (EDA) on selected technical indicators before proceeding to modelling, and then to develop more practical models by introducing new reward loss function that maximizes the returns during training phase. The results of EDA reveal that the complex patterns within the data can be better captured by discriminative classification models and this was endorsed by performing back-testing on two securities using Artificial Neural Network (ANN) and Random Forests (RF) as discriminative models .The overall results of this work suggest that there should be larger focus on EDA and more practical losses in the research of machine learning modelling for stock market prediction applications.

Keywords: Exploratory Data Analysis(EDA) , Artificial Neural Network (ANN) , Random Forests (RF) ,Artificial Intelligence (AI).

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PAPER ID: ICIRTCS-23-058

Pulse and Spo2 Monitoring for Health Care

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ABSTRACT

The main aim of this paper is to design a "Wireless Health Monitoring System" that can monitor our heart rate and SpO2 (oxygen-carrying hemoglobin in blood)/ Wireless Health Monitoring in a systematic manner. In this amplifying world, health is a very important topic for every human being and to monitor it is also a major thing to be done. Health professionals play a very big role for monitoring health of every individual, but nowadays the population is becoming large and it is very difficult for them to monitor health. In this pandemic situation, health is a most prior thing for every people around the world. There are many devices that has been already developed for monitoring health, but this device is very much convenient as well as efficient. For aged people monitoring them health by visiting Hospitals daily is a big burden and also, for newborns it is very necessary for their regular check-ups. Looking into all these situations we have made a Device that can monitor our health wirelessly. This device basicallyconsists of Arduino Nano, OLED Display, MAX30100 Pulse oximeter, HC-05 Bluetooth Module along with two capacitors of different values and two Resistors of same value. In futureby adding more sensors this device can be more effective and it can have many new functions.

Keywords: Speak To Text, Text to Speech, Application Program Interface, Unified Modelling Language, Google Text To Speech, Hyper Text Markup Language, Extensible Markup Language, JavaScript.

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Feature Extraction and Analysis of Natural Language Processing for Deep Learning English Language

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ABSTRACT

This project mainly concentrates on the implementation of a completely capable model which performs word segmentation based on the dataset uploaded. The technology that we are using here is Natural Language Processing (NLP) for achieving word segmentation through Feature Extraction method. NLP (Natural Language Processing) is a technology that enables computers to understand human languages. This paper proposes a multi-modal neural network. For each mode, there is a multi layer sub-neural network with an independent structure corresponding to it. It is used to convert the features in different modes to the same- modal features. In terms of word segmentation processing, in view of the problems that existing word segmentation methods can hardly guarantee long-term dependency of text semantics and long training prediction time, a hybrid network English word segmentation processing method is proposed. This method applies BI-GRU (Bidirectional Gated Recurrent Unit) to English word segmentation, and uses the CRF (Conditional Random Field) model to annotate sentences in sequence, effectively solving the long-distance dependency of text semantics, shortening network training and predicted time. Experiments show that the processing effect of this method on word segmentation is similar to that of BI-LSTM- CRF (Bidirectional- Long Short Term Memory-Conditional Random Field) model, but the average predicted processing speed is 1.94 times that of BI-LSTM-CRF, effectively improving the efficiency of word segmentation processing

Keywords: Natural Language Processing(NLP),Bidirectional Gated Recurrent Unit (Bi-GRU),Conditional Random Field(CRF),Bidirectional-Long Short Term(BLSTM).

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PAPER ID: ICIRTCS-23-060

Analysis and Detection of Autism Spectrum Disorder using Machine Learning Techniques

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ABSTRACT

Autism Spectrum Disorder (ASD) is a neuro-disorder in which a person has a lifelong effect on interaction and communication with others. Autism can be diagnosed at any stage in once life and is said to be a "behavioural disease" because in the first two years of life symptoms usually appear. According to the ASD problem starts with childhood and continues to keep going on into adolescence and adulthood. Propelled with the rise in use of machine learning techniques in the research dimensions of medical diagnosis, in this paper there is an attempt to explore the possibility to use Naïve Bayes, Support Vector Machine, Logistic Regression, KNN, Neural Network and Convolutional Neural Network for predicting and analysis of ASD problems in a child, adolescents, and adults. The proposed techniques are evaluated on publicly available three different non-clinically ASD datasets. First dataset related to ASD screening in children has 292 instances and 21 attributes. Second dataset related to ASD screening Adult subjects contains a total of 704 instances and 21 attributes. Third dataset related to ASD screening in Adolescent subjects comprises of 104 instances and 21 attributes. After applying various machine learning techniques and handling missing values, results strongly suggest that CNN based prediction models work better on all these datasets with higher accuracy of 99.53%, 98.30%, 96.88% for Autistic Spectrum Disorder Screening in Data for Adult, Children, and Adolescents respectively.

Keywords: Autism, Machine learning, CNN, SVM, KNN, Logistic Regression, Naïve Bayes, Convolutional Neural Network.

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PAPER ID: ICIRTCS-23-061

Waste Management Improvement In Cities Using IOT

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ABSTRACT

The uncollected waste material when the waste receptacle is full is a typical issue these days. Accordingly, a proficient waste administration for the waste material is fundamental in guaranteeing a spotless and green general climate. This venture presents an Internet of Things (IoT) based Smart Waste Collection Monitoring System to screen the waste material at the chose website of trash assortment region. The framework is executed utilizing a ultrasonic sensor which is associated with hub MCU gadget as to screen squander container trash level. Inthis framework, squander canister profundity level will be sent by means of hub MCU Ethernet Shield with an Internet association with the IoT Cloud. The smell sensor is additionally used to distinguish any awful scent from trash container. The cloud information base store the gathered waste container level information and smell level information into IoT data set and show the waste receptacle profundity level on online dashboard for ongoing perception. Hence, the waste assortment turned out to be more compelling and efficient. This task IoT Garbage Monitoring framework is an extremely inventive framework which will assist with keeping the urban areas clean. This framework screens the trash canisters and educates about the degree of trash gathered in the trash containers by means of a page.

Keywords: Internet of Things (IoT), IoT Cloud, Framework, Microcontroller, MCU Ethernet Shield, Ultrasonic sensor, Garbage Monitoring Framework, LCD Display.

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PAPER ID: ICIRTCS-23-062

IOT Based Patient Health Monitoring System

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ABSTRACT

Healthcare is given the extreme importance now a- days by each country with the advent of the novel corona virus. So in this aspect, an IoT based health monitoring system is the best solution for such an epidemic. Internet of Things (IoT) is the new revolution of internet which is the growing research area especially in the health care. With the increase in use of wearable sensors and the smart phones, these remote health care monitoring has evolved in such a pace. IoT monitoring of health helps in preventing the spread of disease as well as to get a proper diagnosis of the state of health, even if the doctor is at far distance. In this paper, a portable physiological checking framework is displayed, which can constantly screen the patient's heartbeat, temperature and other basic parameters of the room. We proposed a nonstop checking and control instrument to screen the patient condition and store the patient information's in server utilizing Wi-Fi Module based remote correspondence. A remote health monitoring system using IoT is proposed where the authorized personal can access these data stored using any IoT platform and based on these values received, the diseases are diagnosed by the doctors from a distance.

Keywords: Health Monitoring system, Controller, Pulse sensor, Temperature Sensor

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PAPER ID: ICIRTCS-23-064

Road Traffic Vehicle Detection and Tracking Using Deep Learning with Custom Collected and Public Datasets

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ABSTRACT

Deep learning is a type of machine learning and artificial intelligence that imitates the way humans gain certain types of knowledge. Deep learning is revolutionizing smart cities and societies, solving many longstanding problems. Transportation is continuing to cause unbelievable damages including 1.25million deaths and trillions dollars annually. This paper presents a study on the use of YOLOv4 for vehicle detection and Deep SORT for tracking the detected vehicles on roads. We have used three different variations of the deep learning models and compare their performance; a pre-trained model with COCO dataset, two custom-trained models with the Berkeley Deep-Drive dataset our custom-developed dataset obtained by a Dash Cam installed onboard vehicle driven on KSA road in five different traffic conditions. City traffic in day and night, highway traffic in day and night, and traffic in rain. We have used Google Colab platform to harness GPU power, CUDA and OpenCV. The results have been evaluated using precision and other metrics.

Keywords: Recommender System (RS), Sentimental Analysis (SA), LSTM (Long Short-Term Memory Algorithm), Security. Vehicle detection, tracking-by-detection, YOLO, DeepSORT, road traffic data.

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PAPER ID: ICIRTCS-23-065

CNN Based Speaker Recognition in Language Text Independent Small-Scale System

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ABSTRACT

Speech processing has emerged as one of the important application area of digital signal processing. The objective of automatic speaker recognition is to extract, characterize and recognize the information about speaker identity. To remove the noise from the audio signal a low pass filter is utilized. Feature vectors from speech are extracted by using Mel frequency Cepstral coefficients (MFCC) which carry the speaker's identity characteristics. These features are used to train the network. In this paper implementation we are using a random forest network. This network gives the classified audio signal as output with more accuracy which is about 95-100% than existing methods. Here, the classified output is then converted into the speech.

Keywords: Speaker Recognition, Neural Network, Voice Sample, Language-Independent Speaker Recognition, Independent Speaker Recognition System.

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PAPER ID: ICIRTCS-23-066

Optimization of the Hybrid Movie Recommendation System Based on Weighted Classification and User Collaborative Filtering Algorithms

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ABSTRACT

Aiming at the problem that the single model of the traditional recommendation system cannot accurately capture user preferences, this paper proposes a hybrid movie recommendation system and optimization method based on weighted classification and user collaborative filtering algorithm. The sparse linear model is used as the basic recommendation model, and the local recommendation model is trained based on user clustering, and the top-N personalized recommendation of movies is realized by fusion with the weighted classification model. According to the item category preference, the scoring matrix is converted into a low-dimensional, dense item category preference matrix, multiple cluster centers are obtained, the distance between the target user and each cluster center is calculated, and the target user is classified into the closest cluster. Finally, the collaborative filtering algorithm is used to predict the scores for the unrated items of the target user to form a recommendation list. The items are clustered through the item category preference, and the high-dimensional rating matrix is converted into a low dimensional item category preference matrix, which further reduces the sparsity of the data.

Keywords: The sparse linear model, the local recommendation model, top-N personalized recommendation, the category preference matrix, the scoring matrix.

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PAPER ID: ICIRTCS-23-067

The CNN and DPM Based Approach for Multiple Object Detection in Images

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ABSTRACT

With the development of intelligent and social media, the bulk of data on internet has grown high speed. There are so many important aspect in image processing, object detection is one of the international demanded research field .Multiple object detection is an important concept in object detection. In object detection extracting the features and handling the occlusion are two most important components. A Region-based Convolution Neural Network (RCNN) has achieved great success in extracting the region-based features which may used for extracting multiple regions from the images. Deformable Part Based Model (DPM) improve the ability for handling the occlusion. Occlusion handling is nothing but when multiple objects are near to each other that time some objects are not detected so this drawback will be handled by DPM. In this paper RCNN and DPM are to be integrated to detect multiple objects.

Keywords: Convolutional Neural Network (CNN), Deformable Part-Based Model (DPM), Occlusion, Region based Convolutional Neural Network(R-CNN)

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PAPER ID: ICIRTCS-23-068

Energy Efficient IOT Virtualization Framework using Peer to Peer Networking and Processing

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ABSTRACT

We are investigating the energy efficiency of an IoT virtualization framework with P2P network and edge computing. A MILP was developed to maximize the number of processing tasks served by peers and minimize the total power consumption of the network. An energy efficient IoT virtualization framework with peer-to-peer (P2P) networking and edge processingis proposed. The first scenario is a 'relays only' scenario, where the task requests are processedusing relays only. The second scenario is an 'objects only' scenario, where the task requests areprocessed using the IoT objects only. The last scenario is a hybrid scenario, where the task requests are processed using both IoT objects and VMs. We have developed a mixed integer linear programming (MILP) model to maximize the number of processing tasks served by the system, and minimize the total power consumed by the IoT network. Based on the MILP model principles, we developed an energy efficient virtualized IoT P2P networks heuristic (EEVIPN). Our results show that the hybrid scenario serves up to 77% (57% on average) processing task requests. The relays only scenario serves 74% (57% on average) of the processing task requests with 8% saving in power consumption compared to the hybrid scenario.

***Keywords*:** Edge Computing, Mixed Integer Linear Programming (MILP), Virtual Machines (VMs), Energy Efficient Virtualized IoT P2P Networks Heuristic (EEVIPN).

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PAPER ID: ICIRTCS-23-069

Blockchain Based Milk Delivery Platform for Stallholder Dairy Farmers in Kenya: Enforcing Transparency and Fair Payment

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ABSTRACT

Kenya's dairy industry represents 4% of the country's GDP and provides a significant portion of Kenya's population with a source of income and livelihoods. The sector currently provides revenues and jobs to more than 2 million people throughout the dairy value chain. These records have been susceptible to manipulations by such centers to cut down on their payments to farmers. This work explores the potential use of blockchain technology in milk delivery among smallholder farmers in rural areas in developing nations towards creating transparency, trustworthiness, and fairness in payment to these farmers. The goal is to seek and design a farmer-centric blockchain based platform that ensures that farmers are protected from unscrupulous/predatory intermediaries in the milk delivery chain that exploit the illiterate and the unsuspecting farmers. In addition to providing traceability and supply chain transparency, the blockchain reduces operational costs and helps automate decision-making. Blockchain technology makes it possible for a client to know the nature and quality of a product and its origin. Blockchain technology, coupled with the Internet of Things (IoT) and the Cloud, has the potential to monitor critical parameters of a dairy product along the entire supply chain. Blockchain allows the creation of a decentralized supply chain with immutable transaction records.

***Keywords*:** Blockchain, Information and Communication Technology (ICT), Supply-Chain Management, Ethereum, Smart-Contract, Solidity, Internet of Things (IoT)

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PAPER ID: ICIRTCS-23-070

A New Learning Approach to Malware Classification using Discriminative Feature Extraction

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ABSTRACT

With the development of Internet, malware has become one of the most significant threats. Recognizing specific types of malware is an important step towards effective removal. Malware visualization is an important branch of malware static analysis techniques, where a piece of malware is turned into an image for visualization and classification. Despite great success, it is still difficult to extract effective texture feature representations for challenging datasets. Existing methods use global image features which are sensitive to relative code locations. In this project, we present a new learning framework to obtain more discriminative and robust feature descriptors. Our method works with existing local descriptors such as LBP (Local Binary Patterns) and dense SIFT (Scale-invariant feature transform), by grouping them into blocks and using a new bag-of-visual-words (BoVW) model to obtain robust features, which are more flexible than global features and more robust than local features.

***Keywords*:** Malware, Malware Visualization, Feature representations, Image Features, Descriptors, LBP, Dense SIFT, BoVW.

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PAPER ID: ICIRTCS-23-071

Efficient Local Secret Sharing for Distributed Blockchain Systems

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ABSTRACT

Blockchain systems store transaction data in the form of a distributed ledger where each peer is to maintain an identical copy. This Project is proposed to improve storage efficiency by incorporating secret sharing, private key encryption, and information dispersal algorithms. However, the DSB results in significant communication cost when peer failures occur due to denial of service (DoS) attacks. In this project, we propose a new DSB approach based on a local secret sharing (LSS) scheme with a hierarchical secret structure of one global secret and several local secrets. The proposed DSB approach with LSS improves the storage and recovery communication costs. In the original DSB, the private keys act as the local secrets for subsets of peers and the hashes are the global secrets. These local and global secrets are stored by using two independent secret sharing schemes. On the other hand, the LSS efficiently incorporates local secrets and global secrets into a hierarchical secret sharing scheme. We characterize trade offs between storage and communication cost of traditional blockchain, original DSB and proposed Distributed Storage Blockchain (DSB) with Local Secret Sharing (LSS). These trade offs explicitlyshow how the proposed approach improves the storage and communication costs.

***Keywords*:** Distributed Storage Blockchain (DSB).

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Land Mine Detectors with Automatic Indication using Wi-Fi

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ABSTRACT

In today's world Nation security is most important thing today and therefore there is a need to consider safety of the soldiers and army who fight for the nation's security. One of the major concerns is the mine that is laid by the enemy on the way. So, it becomes very important to detect this mine and diffuse them to save the lives of soldiers and armies. This is now made possible with Landmine Detection Robotic Vehicle with Wi-Fi. Land mines impose humanities, social, psychological and economic consequences. To eliminate the threat of mines, the only possible solution is to remove them individually without causing any damage. In this project we design and developed simple and cost-effective system that can used to detect the buried controlled wirelessly to avoid human causalities. Our proposed system aims to detect the landmine without any physical contact with landmine detector by a robotic vehicle operated by robotic car and signal at mobile. There are currently more than 500 million landmines are buried in more than 70 countries and demining of these mines will take decades. A satisfactory demining rate can only be accomplished by using new and enhanced technologies such as enriched sensors, well-organized manipulators and mobile unmanned robots. The concept and idea are formed into physical hardware mechanisms from theoretical stages by construction of prototype and then software program combined into the proposed system so to investigate and test the model that had been developed. The designed model is skilled of spotting mines, controlling himself from stepping over it and notifying the operator about the location of the mine. This helps to minimizing risk to a soldier's health.

***Keywords*:** Land Mine, WIFI, Metal Detector, ESP, Buzzer.

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Remote Sensing Identification and Analysis of Various Crop Management Systems

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ABSTRACT

Mapping and classification crop by using satellite image is challenging task. Remote Sensing Classification Techniques Methods Examples Characteristics Parametric Maximum Likelihood classification and Unsupervised classification etc Assumptions: Data area normally distributed Prior Knowledge of class density functions Non-Parametric Nearest-neighbor classification, Fuzzy classification , Neural networks and support Vector machines etc No prior assumptions are made Non-metric Rule-based Decision tree classification Can operate on both real-valued data and nominal scaled data statistical analysis Supervised Maximum Likelihood, Minimum Distance , and Parallelepiped classification etc Analyst Identifies training sites to represent in classes and each pixel is classified based on statistical analysis Unsupervised ISODATA and K-means etc Prior ground information not known. SVM classifier, deep semantic segmentation used for patter recognition and used fusion image of Original RGB and near -infrared under improved segment method highest accuracy was 89.8%.CIG base identification method used NIR image used CIG vegetative index for stressed area of maize crop and image acquired by multispectral camera on UAV.The classification of crop used GLCM and SVM .The data were collected by LIIS iv sensor with 5.8 resolution of 3 spectral band and the accuracy of GLCM was 90.29 with kappa coefficient 0.88.The classification of spatial pattern of crop area the data were used IRS P6-LISS III and maximum likelihood result was 96.99% and fuzzy convolution was 96.24 the maximum likelihood more better than fuzzy convolution.

Keywords: Remote Sensing Classification, Support Vector Machine

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Recent Trends in Crop Assessment and Identification based on Spatial and Spectral Features using Geo Spatial Technology

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ABSTRACT

Precision agriculture is a farming technique that makes use of geographic data to evaluate field variance in order to ensure the most effective use of inputs and maximize agricultural output. Geospatial data on crop requirements is gathered in real time, and it is utilized to identify and carry out site-specific treatments. The benefits of using various crop identification and analysis methodologies are examined in this research. The chosen approach entails gathering crop data from a wide range of satellite platforms and pre-processing collected data using various techniques. Crop analysis may be done effectively using satellite images. Utilizing a variety of different techniques, many crop identification procedures have been discovered and analyzed.

Keywords: Precision agriculture, Remote Sensing and GIS, Satellite Sensors.

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Local Information and Kernel Metric Fuzzy C-Means Segmentation and Hybrid CNN-LSTM Architecture for Skin Cancer Classification

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ABSTRACT

Skin cancer is one of the basic cancer forms, which may be further classified in few kinds based on morphologic characteristics, colour, structure and texture due to various dermatologic problems. Detection and diagnostic of malignant skin carcinogenic cells are dependent on the death rate of individuals with skin cancer. Restrictions, including shadow, artifact and noise, in present dermoscopic images influence the image quality that could hinder detection attempt. Tentatives have been made to solve these difficulties by evaluating photos via deep neural learning networks to detect skin cancer. In this paper, two datasets such as PH2 and Kaggle are used as input images for skin cancer detection. To keep the sharp edges of the images, the research work uses Bilateral filter as pre-processing technique. Then, the affected areas are segmented using Local Information and Kernel Metric fuzzy C-means (LIKM-FCM) and the features of texture based and colour based features are extracted. Finally, the classification process is carried out by using hybrid Convolutional Neural Network (CNN) with Long Short Term Memory (LSTM) network. The experimental analysis are described the performance of both LIKM-FCM and CNN-LSTM networks with existing techniques in terms of various parameters. The results proved that the proposed LIKM-FCM method achieved 92.8% of accuracy and proposed CNN-LSTM achieved 96% of accuracy on PH2 dataset.

***Keywords*:** Bilateral filter; Convolutional Neural Network; Local Information and Kernel Metric fuzzy C-means; Long Short Term Memory; Skin Cancer Detection.

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PAPER ID: ICIRTCS-23-105

Disease Prediction using Artificial Intelligence Techniques: A Review

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ABSTRACT

Medical diagnosis requires a lot of time and is hard for humans when done without the aid of clever machines. Technology was therefore required to improve quality and accuracy, it support medical professionals in their decision-making processes. It aids medical professionals in the development of drugs, the identification of patterns, and awareness of advances in the field. Artificial Intelligence in Medical (AIM) technologies are utilised in the healthcare system mostly for diagnosis. This strategy is being quickly pursued by clinical and scientific researchers in an effort to improve the effectiveness of healthcare delivery. The best odds for success and accuracy are provided by the branch of computer science known as artificial intelligence (AI), which focuses on machine intelligence. This paper's main goal is a survey ofAI methods used in medical research to identify various disorders.

***Keywords*:** Artificial Intelligence; Medical Diagnosis; Medical Artificial Intelligence.

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PAPER ID: ICIRTCS-23-103

Review of Energy Efficient Clustering and Swarm Intelligence Based Clustering Routing Protocols for Wireless Sensor Networks

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ABSTRACT

Wireless Sensor Network (WSN) is a wireless network consists of large number of sensor nodes. Routing protocols are used for communication in the network. The most important feature of a routing protocol, in order to be efficient for WSNs, is the energy consumption and the extension of the network's lifetime. Routing protocols discover the appropriate path to transmit the data and maintain the routes in the network. Therefore, a comprehensive review isneeded which can review state-of-the-art technologies, analyse functional and performance aspects, and highlight routing protocol issues and challenges in WSNs. This paper proposes a review of existing clustering-based hierarchical routing protocols, and swarm intelligence (SI) based routing methods for WSNs. In the present

Keywords: Swarm Intelligence (SI), Wireless Sensor Network (WSN).

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Deep Learning Approach using Prophet Algorithm for the Human Activity Recognition with UCI Dataset

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ABSTRACT

The vital and crucial problem today is the detection and recognition of human activities. It has a wide range of uses in industries like entertainment, security, and health care. The ability to foresee the future is an important skill because human behaviour differs from person to person. The recognition of human activities uses a variety of deep learning techniques. Along with detailing the LSTM results, this study also discusses a novel strategy using the prophet algorithm. Prophet has a lot of benefits. It is quick and offers fully automated projections that data scientists and analysts can manually adjust. It has excellent outlier management. It works well with time series data. The article suggests using the prophet algorithm to find human activity. The experimental goal makes use of the UCI dataset. It is producing superior outcomes to the LSTM technique. The accuracy attained with the LSTM technique is 97.81%, whereas the accuracy provided by the prophet algorithm is 98.02%.

Keywords: Human Activity Recognition, Deep Learning, Long Short Term Memory (LSTM), Prophet.

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PAPER ID: ICIRTCS-23-093

A Literature Survey on Advanced Face Recognition System for Security Using Various Dimensions

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ABSTRACT

This abstract provides a critical analysis and comparison of modern face recognition methodologies, their benefits, previous algorithms Results limitations and areas for future development. The survey will help researchers understand the challenges associated with face recognition tasks such as occlusion, illumination and pose invariance which cause a decline in accuracy when using traditional technique solutions or deep neural networks. Facial recognition systems are a sub-field of AI technology that can identify individuals from video and images based on an analysis of their facial features. Today, facial recognition systems are powered by deep learning, a form of AI that operates by passing inputs through multiple stacked layers of simulated neurons in order to process information. These neural networks are trained on thousand or even millions of examples of the types of problems the system is likely to encounter, allowing the model to "learn" how to correctly identify pattern from the data. Facial recognition systems use this method to isolate certain features in a face that has been detected in an image like the distance between certain features, the texture of an individual's skin, or even the thermal profile of face and compare the result facial profile to other known faces to identify the person.

Keywords: PCA, SPCA, Image Processing, Face Recognition, 2D,3D,AI, IOT, FR, DCNN, LDA, NFL.

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PAPER ID: ICIRTCS-22-118

A Trap for Any Attackers through Honeypot Network in the Security of Systems.

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ABSTRACT

In the technology development and the evolving and expanding of networks is increasing day by day. Users interact with each other through networks more efficiently. Therefore, safety is very important in preserving the network and database and the need to detect a potential attack before an attack occurs. The main issue is the network security, particularly in the industries, and many techniques are there in the networks to protect network systems. One among them is Honeypot, a software that is used to detect unauthorized misuse of information systems and to evaluate the actions and behaviour of the attacker. Honeypot, in other words, a trap for any attackers to log in to the network. If the behaviour of these attackers is detected, the information will be used to improve security of the networks. Using Honeypot does not cause attackers to notice they are being detected. This paper is focused primarily on Honeypot, which is a new technology that has the potential to provide security with protection by detecting network threats and to enhance the network security framework.

Keywords: Honeypot, Network security, Network threats

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PAPER ID: ICIRTCS-22-085

Prediction of Infectious Disease in Smart Health System Using Machine Learning and IOT Techniques

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ABSTRACT

Machine learning (ML) is a strong tool for uncovering Internet of Things (IoT) data insights. These hybrid technologies help improve decision-making in fields like education, security, business, and healthcare. This study discusses the use of IoT and ML based systems to detect infectious diseases in health care applications. The built ML and IoT system tracks infectious diseases using parallel computing. The use of ML-based IoT in health care applications has proven effective in tracking and preventing disease spread. It also reduces medical expenditures and improves treatment for infected people. In this paper, new proposed Multivariate Linear Regression (MvLR) technique is used to detect the infectious diseases. In comparison to other algorithms, such as Naive Bayes, Decision Tree, Support Vector Machine, and K-Nearest Neighbor algorithms, the Proposed MvLR method shows the best performance, with anaccuracy of 93.40 percent. The proposed strategy is helpful for keeping track of the infectious disease as well as detecting it. The findings gained contribute to reducing the likelihood of the infectious disease being passed on to others and offer assistance to the healthcare Monitoring.

Keywords: Internet of Things, Machine Learning, Multivariate Linear Regression, Infectious diseases

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PAPER ID: ICIRTCS-23-078

Multiface Recognition for Attendance Management System

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ABSTRACT

Keeping track of pupils' attendance. Accessing the numerous classes is a challenging task and calling each student's name once an hour .Maintaining attendance records is time-consuming, and there is also the potential for false signs and names going missing. Putting information manually into computers and papers .There is also a potential that a proxy will show up. The. Using the following technique, attendance is recorded using Face detection and recognition theory. The every student's daily attendance is tracked by subject which the administrator keeps tracks as a result, accessing also easier and more convenient for storing the attendance efficient. It makes excellent and efficient use of resources and manpower.

Keywords: Deep learning, python, Face Recognition, Image Processing.

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PAPER ID: ICIRTCS-23-074

An Approximate Adiabatic Logic Based on Lector Approach for Security Enhancement

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ABSTRACT

Approximate calculation is utilized in the places where to improve the accuracy and an effective option for cutting power consumption on Internet of Things edge devices. Differential power analysis (DPA) is one form of an attack through a side channel; nonetheless, it may be used to undermine approximation calculations. In estimate edge computing, the application of adiabatic logic may assist to cut down on energy utilization while boosting security against side-channel attacks. Less accurate and adiabatic logic-based solutions are more power and time intensive, but they also reduce space and enhance security. The suggested approximation adders utilize the parallel capabilities of adiabatic logic to reduce area, which is distinct from reducing the consumption of power and energy. The second suggested design of a True carry Less accurate adder follows the first proposed design of a True Sum Approximate Adder (TSAA). A CMOS-based Accurate Mirror Adder(AMA) uses more transistors than TSAA and TCAA based on adiabatic logic. The first and second suggested adiabatic designs shows considerable power and energy reductions over the traditional CMOS AMA at a certain operational frequency and a 45 nm technology node.

Keywords: Differential Power Analysis, Accurate Mirror Adder, True Sum Approximate Adder(TSAA), True Carry Approximate Adder(TCAA).

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PAPER ID: ICIRTCS-23-113

Breast Cancer Detection using Various Machine Learning Algorithms: An Application of Machine Learning in Medical Data

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ABSTRACT

In earlier days, Breast cancer is inevitable for women due to lifestyle-related risk factors, and it has become a complex disease. Almost not only women get breast cancer, but also men can get it globally. In the present study, with the help of various machine learning algorithms like Support Vector Machine (SVM), Logistic Regression (LR). Linear discriminative analysis (LDA), K- Nearest Neighbours (KNN), Naïve Bayes, Classification, and training tree (CART) were deployed to predict breast cancer with reasonable accuracy. To create more accuracy effectively, the UCI Machine Learning Repository dataset has been used. Among machine learning experiments, it has been observed that the Logistic regression technique substantially increases the prediction ona large dataset.

Keywords: SVM, Logistic Regression, KNN, Naïve Bayes, CART, LDA

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PAPER ID: ICIRTCS-23-101

Detection of Malicious Bots in Twitter Using RNN

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ABSTRACT

The rise of web services and the popularity of online social networks (OSNs) such as Facebook, Twitter, and LinkedIn have proliferated unsolicited social bots as automated social agents. These actors can play a variety of malicious roles, including intruders on human conversations and scammers. scammers, disinformation spreaders, stock market manipulators, astronomical miners and content polluters of all kinds (spammers, malware distributors), it is undeniable that social bots are very important in social networks. Therefore, we use RNN algorithms to detect these malicious social bots in social networks. This algorithm provides an exit from the previous step to the current step. This algorithm has a high detection rate compared to all other machine learning algorithms. Therefore, this article reveals the potential dangers of malicious social bots, discusses detection methods within methodological classifiers, and provides directions for future research.

Keywords:-RNN, malicious social bots, online social networks(OSNs)

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PAPER ID: ICIRTCS-23-094

Review on Native Language Translation to English Using Bert Model

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ABSTRACT

In the present communication-based society, no natural language seems to have been unscathe d by the trends of code-mixing in the current communication-based culture. An individual lang uage employs linguistic codes from other languages for various communicative objectives. Th is results in a hybrid language that isn't entirely either the native tongue or the foreign tongue. The issue of machine translation is complicated by the mixed language. The "foreign" element s in the source language must be recognised and handled appropriately. It's possible that the fo reign elements will change morphologically to fit the host language and won't emerge in their original form. Code-mixing is a common occurrence in everyday natural language interaction i n large cities, especially among educated individuals. Since the occurrence is so frequent, this i s frequently regarded as a distinct (developing) variety of the language. We have examined dif ferent machine translation methodologies as well as current machine translation systems. The n umerous formalisms most suited to their applications have been employed by various MT grou ps. In a multilingual setting, transfer-based systems are more adaptable and can be expanded t o support language pairs using BERT Model. As a result, attempts to comprehend the structure of code-mixing are cumbersome and inadequately descriptive. We took into account the mingl ing of Kannada and English codes in this project.

KeyWords : Machine Learning , Natural Language Processing , Bert Model , CodeMixing.

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PAPER ID: ICIRTCS-23-111

Diabetic Nephropathy Disease Prediction

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ABSTRACT

Diabetic is one of the leading causes of Chronic Kidney Disease which develops into an end-st age renal disease. The study of Diabetic effects on Kidneys is termed Diabetes Nephropathy or Diabetic Kidney Disease. Most individuals develop disease complications due to missed diagn oses. There is a lack of prediction of DN risk factor development in patients at the time of DM diagnosis. The purpose of this study was to predict the DN disease at its early stages, with a m inimal number of clinical features using machine learning techniques.

Keywords: diabetic, machine learning

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PAPER ID: ICIRTCS-23-116

Music Recommendation Based on Facial Expression Recognition using Convolutional Neural Networks

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ABSTRACT

Finding out which tune to pay attention to from the huge series of current options is often puzzling. Relying to your temper, numerous thought frames are available on topics which includes music, food, and purchasing. The principal cause of our tune advice gadget is to offer guidelines that in shape the consumer's flavor. by way of reading the user's facial expressions and feelings, it is possible to recognize the person's contemporary emotional and mental state. Song and video are fields that provide remarkable possibilities to provide a wide variety of picks to customers, thinking of their passions and recorded information. People are recognized to use facial expressions to more certainly explicit what they imply and in what context theysuggest a word. I hold thinking that I cannot maintain music of which song wishes to be performed. via developing a recommendation machine, the consumer can determine which music to concentrate to and decrease her level of strain. customers do not have to waste time looking for songs. It recognizes the track that quality fits the user's temper and gives songs to the user according to the person's temper. User pics are captured using webcams. A person's image is taken and relying at the person'stemper/feeling, appropriate songs from the person's playlist are displayed to meet the user's needs.

Keywords: Face Recognition, Feature Extraction, Emotion Detection, Pygame, Tkinter, Music Player, Camera, or a Convolutional Neural Network

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PAPER ID: ICIRTCS-23-117

Hand Gesture Recognition for Enabling Specific Task Using Machine Learning

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ABSTRACT

Hand gesture popularity systems have received lots interest in current years because of their va rious packages and potential to efficiently interact with machines through human- laptop inter play. On this work, we introduce hand segmentation the usage of a colour model to capture ha nd he gestures and use shade segmentation strategies to recognize a person's hand for faster, hi gher, strong and correct recognize actual-time packages. There are many such color models to be had for taking pictures human arms and human skin, however they've relative strengths and weaknesses in the discipline of photo processing. For hand segmentation functions, This mode l method is chosen for first-class consequences. Understand through hand from the picture. Th e proposed technique has been validated to be accurate and powerful for multiple conditions.

Keywords: Hand Gesture, Human computer Interaction, Computer vision

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PAPER ID: ICIRTCS-23-077

Learn Ar - An Augmented Reality Based Learning Platform Empowering Rural Education and Its Growth.

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ABSTRACT

Augmented Reality has quickly become the maximum appealing topics inside the studies as an essential academic tool which could improve getting to know at most academic stages. Throughout this time, myriad ground-breaking packages had been substantiated, enhancing the importance of Augmented Reality in everyday lifestyles. Such evolution has not remained outdoor the scholastic area; as an alternative, they've had a big amount of have an effect on this region thru the start of latest spreading equipment, knowledge, and mastering systems. We are developing an Android Application which can be helpful in understanding some Molecular structures, Human body parts, Solar System and other things using 3D AR models. We have compiled substantial set of cases and summaries prepared by professionals, that portray different fields where AR can be implemented and prove to be ultimately helpful. To improve the case summary, it's very important to comprehend how the Augmented Reality actually helps in automating certain things and analysing complex structures. Numerous papers that offer comprehensive view of the state of research in this area have been published as a result of numerous achievements in the acquisition of datasets, methods, and techniques. A scientific investigation was done for identifying every literature bearing on blessings & benefits of the usage of Augmented Reality in educational field, and particularly, in E-studying contexts.

Keywords: Augmented Reality, Android Application

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PAPER ID: ICIRTCS-23-119

Neural Network based Medical Self-Diagnostic System Using Artificial Intelligence

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ABSTRACT

Diseases such as disorders in health condition among the people can be identified and diagnos ed with the help of Artificial Intelligence techniques. Accurate predictions in the field of medi cal diagnosis in diversified fields are required by application of accurate algorithms. Earlier co nventional practices of diagnosis were practiced manually which are prone to errors. Compare d with human expertise practice utilization of predictive techniques of Artificial Intelligence (AI) supports auto diagnosis and it reduces the error rate. In this paper an analysis is made on v arious artificial intelligence techniques that are used presently such as Support Vector Machin e (SVM),K-means algorithm, Fuzzy logic, neural network are considered and an optimized fuz zy logic based neural network method is designed. Observing the working model of current pr actices a new technique is developed for obtaining accurate results by considering different pa rameters. Finally, future developments on research work are explained with the help of Artifici al Intelligence based diagnosis system on the challenges faced into day's medical self-diagnost ic system.

Keywords: Machine Learning, fuzzylogic, Artificial Intelligence, clustering, medical d iagnosis, Clustering.

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Carbon Emission Analysis Using Gaussian Method

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ABSTRACT

In this paper, a non-parametric kernel prediction algorithm in machine learning is applied to pr edict CO2 emissions. In previous work, related to CO2 emissions has been studied, so that pro per independent variables cannot be defined. In this proposed work in Traditional parametric m odelling approaches and the Gaussian Process Regression (GPR) algorithms were introduced, and their prediction performance was summarized. The reliability and efficiency of the propos ed algorithms were then demonstrated through the comparison of the actual and the predicted r esults. The results showed that the GPR method can be give the most accurate predictions on C O2 emissions. Given the importance of climate change must get the numbers right to make cer tain that the work on its biggest challenges.

***Keywords*:** Machine learning , Artificial intelligence , Natural language processing, Gaussian.

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PAPER ID: ICIRTCS-23-120

Measuring of Average Fuel Consumption in Heavy Vehicles Using Machine Learning Algorithms

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ABSTRACT

This research suggests a data summarising strategy based on distance rather than the typical ti me span for constructing personalised machine learning models for fuel economy. This strateg y is integrated with seven variables obtained from vehicle speed and road grade to build a high ly predictive neural network model for average fuel consumption in large vehicles. The propos ed model may be readily constructed and deployed for each individual vehicle in a fleet to max imise fuel usage. The predictors of the model are averaged over a range of distance window si zes. For routes involving both city and highway duty cycle segments, the results show that a 1 km window can predict fuel consumption with a 0.91 coefficient of determination and a mean absolute peak-to-peak percent error of less than 4% for routes with a 0.91 coefficient of determ ination and a mean absolute peak-to-peak percent error of less than 4%.

Keywords: vehicle modeling, neural networks, average fuel consumption, data summarization, fleet management

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Multimodal Chain-Of-Thought Reasoning in Language Models

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ABSTRACT

By the use of chain-of-thought (CoT) prompting to produce intermediate reasoning chains as t he justification for inferring the answer, large language models (LLMs) have demonstrated exc ellent performance on complex reasoning. Yet, the present The language modality has been th e focus of CoT studies. We suggest Multimodal-CoT, a two-stage paradigm that divides questi on inference and justification production into language (text) and visual (pictures) modalities. I n this manner, response inference can take advantage of more effective justifications that are b ased on multimodal data. Our model exceeds the previous state-of-the-art LLM (GPT-3.5) wit h Multimodal-CoT under 1 billion parameters by 16 percentage points(75.17%91.68% accurac y) and even excels human performance on the Science QA benchmark. There is open access to the code.

Keywords: Computer Science - Computation and Language, Artificial Intelligence, Computer Vision and Pattern Recognition, Machine Learning, Multimedia.

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PAPER ID: ICIRTCS-23-122

Efresh - A Device to Detect Food Freshness

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ABSTRACT

The food we consumes provide nourishment and gives energy to our body, it gives us the ability to do daily activities and help improves our health in direct as well as indirect ways. A healthy and fresh diet is the most important way to keep ourselves fit. The food items kept at room temperature undergo rapid bacterial growth and chemical changes in food. Taking unhealthy food leads to bad health, and can cause different food borne diseases. The purpose to use biosensor and electrical sensors is to determine the freshness of food. A smart system which can detect the freshness of household food like dairy items, meat, and fruits. The identification and selection of pH sensor, Moisture sensor, and Gas sensor to develop a smart food freshness detector ensures the freshness of food and tells whether to eat it or bin it. An android application is developed to select the type of food to be checked.

Keywords: Food Freshness; pH Sensor; Moisture Sensor; Gas Sensor; Arduino Uno.

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PAPER ID: ICIRTCS-23-125

Deep Learning Methods For Human Eye Detection: A Comparison

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ABSTRACT

The classic tiredness driving detection method cannot reliably detect the face in the case of a d river wearing a mask for the purpose of detecting their level of exhaustion. Due to the mask s occlusion, the mouth regions characteristics are lost. As a result, it is crucial to eradicate fatig ue features from the eye area. The effectiveness of the algorithm used to detect fatigued drivin g will be directly impacted by the precision of the eye area detection. Right now, the models Y OLOv3and Faster RCNN are both top-notch at target detection. As a result, the data set and tra ining settings used in this study are the same. The YOLOv3 model and the Faster RCNN mod el are assessed using one assessment standard. According to experimental findings, YOLOv3 h as a better impact on human eye detection under the same circumstances.

Keywords: Fatigue driving, Mask, Eye detection, YOLOv3, Faster-RCNN

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PAPER ID: ICIRTCS-23-126

Enhanced Secured Personal Health Records Using Pattern-Based Verification and Two-Way Polynomial Protocol in Cloud Infrastructure

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ABSTRACT

This present research proposes the digitalised healthcare system that enables patients to generate, aggregate and store in the form of personal health records (PHRs). This requires more attention non cost effectiveness and less response time on public cloud platform. The migration of cloud and big data era is witnessed more than 2.8 quintillion data are generated through various sources on daily basis. Nevertheless, the medical paradigm has grown seamlessly across the globe to acquire and predict diseases accurately. Moreover, cloud systems need more attention on security and privacy breaches. In this proposed model the publisher-observer pattern-based healthcare systems allow the patients to verify and correct the PHRs before any type of computations. The cloud system acts as a backend framework that offers openness and easy accessibility. The experimental segment ensures the computational cost and response time for multiple polynomial PHR variations. The details evaluation also ensures the security and privacy preservation on sensitive healthcare datasets.

Keywords: privacy; security; correctness; healthcare; two-way polynomial; patient healthe records.

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Load Balancing System for Distributed Storage and Enhancing Performance

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ABSTRACT

National Data Storage is a distributed data storage system intended to provide high quality bac kup, archiving and data access services. These services guarantee high level of data protection as well as high performance of data storing and retrieval by using replication techniques. Moni toring and data access prediction are necessary for successful deployment of replication. Com mon Mass Storage System Model (CMSSM) is used to present a storage performance view of storage nodes in unified way for monitoring and prediction purposes. In this paper some conce ptual and implementation details on using CMSSM for creating a Prediction and Load Balanci ng Subsystem for replica management are presented. Real system test results are also shown. In this paper the application of CMSSM in the national distributed storage system, NDS, has been described. The PLBS subsystem being a part of the NDS system and providing advanc ed monitoring and prediction functionalities has been presented. The system makes use of repl ication techniques to increase availability and performance of data access. Monitoring param eters, methods for re- thieving them and replication policies have been described.

Keywords: Common Mass Storage System Model (CMSSM).

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Underwater Sonar Signal Recognition by Incremental Data Stream Mining Using Machine Learning

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ABSTRACT

Sonar signals are used to detect objects underwater.Thedetectionofsubmarinesunderwaterusing thissonarsignals helps in alerting the navy if any enemy submarine is found .The location of th e object is also found. Sonar stands for Sound Navigation Ranging This technology is used to d etect the object which are under water by sending sound waves into the water up to a particula r distance. When the sound wave hits any object it bounces back and the data is collected in th e form of streams. Choosing the right and best classification model is a very important task in order to detect the object with good accuracy. In this paper, we are trying to detect the object u sing better algorithms in machine leaning to detect the object with the best possible accuracy r ate and to detect the location of the object with the data collected. The traditional approach lik e classification algorithms of data mining are used for detecting the objects with good accurac y .But these approaches detect all the objects like rocks ,fishes and some unwanted materials u nder the sea along with submarines and noisy data causes disturbance .To overcome this probl em we are implementing new algorithms using machine learning.

Keywords: Sound Navigation Ranging.

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PAPER ID: ICIRTCS-23-129

Natural Language Processing and Its Applications in Machine Translation: A Diachronic Review

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ABSTRACT

Natural language processing, a key component of artificial intelligence technology, has roots i n a number of fields, including linguistics, computer science, and mathematics. Strong support for machine translation research is provided by the quick developments in natural language pr ocessing. This paper initially outlines the fundamental ideas and primary material of natural la nguage processing before reviewing briefly the background and current state of NLP research both domestically and internationally. The report then outlines the three phases of machine t ranslation and the current state of the field's research. Natural language processing and m achine translation have made similar historical strides, and the two technologies work best t ogether. Based on this, the studyexamines how natural language processing is used in m achine translation and highlights the issues and developments in the field. The author then exp lores the interplay between machine translation and human translation in the era of artificial intelligence and paints a picture of machine translations potential in the future.

Keywords: natural language processing, machine translation, artificial intelligence, translation technology, machine learning.

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PAPER ID: ICIRTCS-23-110

Whole Organ Thermoacoustics with A clinical Array Plus One Very Low Frequency Channel Applied To Prostate Cancer Imaging

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ABSTRACT

Thermo acoustics has the potential to provide quantitative images of intrinsic tissue properties, most notably electrical conductivity in Siemens/meter, much as shear wave elastography provides tissue stiffness in k Pa. Although thermos acoustic imaging with optical excitation has been commercialized for small animals, it has not yet made the transition to clinic for whole organ imaging in humans. The purpose of this work was to develop and validate specifications for a clinical ultrasound array for quantitative whole organ thermos acoustic imaging. Imaging a large organ requires exciting thermos acoustic pulses throughout the volume and broadband detection of those pulses because tomographic image reconstruction preserves frequency content. The array provided volumetric imaging capability with superior resolution whereas the single element transducer provided superior quantitative accuracy in axial images. Combining axial images from both transducers preserved resolution of the P4-1 array and improved image contrast. Neither transducer was sensitive to frequencies below 50 kHz, resulting in a DC offset and low-frequency shading over fields of view exceeding 15 mm. Fresh human prostates were imaged ex vivo and volumetric reconstructions reveal structures rarely seen in diagnostic images. In conclusion, quantitative whole-organ thermos acoustic tomography will be feasible by sparsely interspersing transducer elements sensitive to the low end of the ultrasonic range.

Keywords: clinical ultrasound.

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PAPER ID: ICIRTCS-23-102

Secured Ids against Ddos Attacks in Manet

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ABSTRACT

Wireless Mobile ad-hoc network (MANET) is an emerging technology and have great strength to be applied in critical situations like battlefields and commercial applications such as building, traffic surveillance, MANET is infrastructure less, with no any centralized controller exist and also each node contain routing capability, Each device in a MANET is independently free to move in any direction, and will therefore change its connections to other devices frequently. So one of the major challenges wireless mobile ad-hoc networks face today is security, because no central controller exists. MANETs are a kind of wireless ad hoc networks that usually has a routable networking environment ontop of a link layer ad hoc network. The scope of this work is to see the effect of DDoS in routing load, packet drop rate, end to end delay, i.e. maximizing due to attack on network prevent it from intruders. Building secure an IDS to detect this kind of attack.

Keywords: Wireless Mobile ad-hoc network (MANET).

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PAPER ID: ICIRTCS-23-130

Electronic Voting System with Privacy, Transparency, and Security Using Public Blockchain

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ABSTRACT

With the advanced technology and developments since the 20 th century, new procedure of casting votes in an election is developed every now and then. This project uses advanced technology like block chain and homomorphic encryption in order to make the election more safe and secure. By implementing the idea of block chain e-voting the elections can be made fairer, as it double checks the votes casted by the voters before and after the elections. Moreover, it eliminates the chances of malpractices as images of voters are taken into consideration. Hence, a voter can only vote once and can recheck their vote. At present the voting is done using paper ballots and electronic voting but it has problems mainly regarding security, credibility, transparency, reliability, and functionality. So, block chain e-voting can deliver an answer to all these problems and further can add advantages like as immutability and decentralization.

Keywords: Blockchain: immutability: decentralization: transparency: homomorphic encryption

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PAPER ID: ICIRTCS-23-100

Magneto Cardiography-Based Ischemic Heart Disease Detection and Localization Using Machine Learning Methods

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ABSTRACT

This study focused on developing a fast and accurate automatic scheme heart disease detection/localization methodology. Methods: T wave was segmented from averaged Magneto cardiography (MCG) recordings and 164 features were subsequently extracted. To identify ischemia heart disease (IHD) case, we selected three classifiers with best performance and applied model ensemble to average results. All 164 features were used in this stage. To localize ischemia, we classified IHD group according to stenosis locations, including left anterior descending (LAD), left circumflex artery (LCX), and right coronary artery (RCA). For this task, we used XGBoost classifier and 18 time domain features. Results: For IHD detection, the SVM-XGBoost model achieved best results with accuracy = 94.03%, precision = 86.56%, recall = 97.78%, F-score = 92.79%, AUC = 0.98, and average precision = 0.98. For ischemia localization, XGBoost model achieved accuracy = 0.74, 0.68, and 0.65, for LAD, LCX, and RCA, respectively. Conclusion: we have developed an automatic IHD detection and localization system. We find that 1. T wave repolarization synchronicity is an important factor to distinguish IHD from normal subjects 2. Magnetic field pattern is associated with stenosis location. Significance: The proposed machine learning method provides the clinicians a fast andaccurate diagnosis tool to interpret MCG data, boosting its acceptance into clinics. Furthermore, the magnetic pole characteristics revealed by the method shows to be related to ischemia location, presenting the opportunity to noninvasively locate ischemia.

Keywords: Magneto cardiography (MCG), Left Circumflex Artery (LCX), Ischemia Heart Disease (IHD).

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Integration of a Charging Station for Electric Vehicles with an Internet of Things Device

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ABSTRACT

A less common or standardised kind of inter-vehicle communication is vehicle to vehicle communication. Operators have given V 2 V high marks for its capacity to address significant concerns with communication between cars and road traffic safety, which hasspurred interest in the technology. The Message Queuing Telemetry Transport (MQTT)protocol, which is a lightweight protocol that uses relatively little system resources, was used in the design of this system. The paper objective is to develop an Internet of Things (IoT)architecture that will enable communication between an electric vehicle and a chargingstation.As they don't emit any pollutants and are good for the environment, electric vehiclesare growing in popularity.Customers waste time using charging stations that can only charge one electric vehicle (EV)at a time. Design and creation of an IOT-based EV communication system that is optimisedfor automatic delivery of battery information to the user and aids in locating the closest charging station. One may simply control EV communication using this IOT technology,which would save time. The reliable vehicle to vehicle and vehicle to infrastructurecommunication is proposed in this article.

Keywords: Message Queuing Telemetry Transport (MQTT)

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PAPER ID: ICIRTCS-23-095

Advanced Deep Learning Techniques: A Disease Hypothesis System

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ABSTRACT

Health, defined as a state of complete physical and mental well-being, is an essential component of humankind. The healthcare sector has been a capital incentive sector with complicated entry barriers for investors such as acquiring land for building a hospital, stamp duties on it, and a shortage of human resources, all of which act as roadblocks for the government in providing universal good healthcare services to its citizens. Furthermore, the division of healthcare services between the centre and the states, as stipulated in the seventh schedule of the Indian Constitution, complicates matters. So, leveraging the opportunities provided by the COVID and keeping in mind the government's relaxations in Telehealth regularization in the law of the land, It will also help to relieve the doctor's and healthcare system's patient load because our solution can provide a basic idea of the severity of the disease to the patient's treating doctor via image processing technology at an early stage. It consists of image capture, image pre-processing, image segmentation, feature extraction, and disease classification. In this study, we proposed a system in which a web application can detect various types of diseases such as cancer, diabetes, heart, liver, and kidney diseases, malaria, and pneumonia. This is possible if the associated disease parameters are well understood.

Keywords: Disease Detection, Artificial Intelligence, Healthcare, Machine Learning, Convolutional Neural Networks.

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PAPER ID: ICIRTCS-23-096

Cognitive Internet of Vehicles: An Intelligent Multimode System Using Driving Pattern Recognition

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ABSTRACT

When it comes to driving safety and steadiness, connected autonomous cars can use communication and AI technology to efficiently overcome the limits people feel themselves to have. However, providing solid communication links between cars is still difficult due to the high dynamics of the vehicular network and the many disruptions and handovers that occur, which can lead to disastrous outcomes. This work proposes a technique for intelligently grouping vehicles in the heterogeneous Cognitive Internet of Vehicles based on their driving behaviours (CIoVs). The driving mode with numerous feature parameters is analysed in the proposed method to precisely capture driving traits. With the goal of facilitating trustworthy clustering of networked autonomous cars, a method based on neural network pattern recognition and the principles of evolutionary algorithms is developed. The cognitive engines can identify the different driving styles and cluster cars that share that style together. We also study the clustering mechanism's communication performance and construct the stability and life duration of clusters. Data from simulations shows that compared to state-of-the-art methods, the suggested mechanism increases reliable communication throughput by around 14.4% and average cluster lifespan by about 11.5%.

Keywords: Cognitive Internet of Vehicles, artificial intelligence, autonomous driving, genetic algorithm, clustering mechanism.

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Fuzzy-C-Means Query Recommendation

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ABSTRACT

In this research, the Spatial Online Analytical Process (SOLAP) is used to exploit spatial data in the warehouse and Similarity Measurement for the Text Prediction (SMTP) is used to recommend the relevant queries. SOLAP retrieves the relevant information and recommend the queries with the help of SMTP, Fuzzy-c-means (FCM). FCM retrieves the similar features in between text and SMTP relates the similarity between the current queries to the previous queries in the log. The experimental result showed that this method provided higher relevant queries to the user.

Keywords: Fuzzy-c-means, Similarity Measurement for the Text Prediction, Spatial data, Spatial Datawarehouse, Spatial Online Analytical Process.

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Review of Regional Languages using Speech Recognition Models

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ABSTRACT

In the 21st century, communication and technology have undergone revolutionary shifts, and speech has played a crucial part in helping us achieve and feel these changes. In a global society, it is essential that only strong languages, take the initiative and maintain their dominance. Most Indian languages are influenced by another language, particularly English. The use of machine learning for speech-processing applications, particularly speech recognition, has been the subject of extensive research over the past few decades. But in recent years, the study has concentrated on using deep learning for speech-related applications. When compared to existing machine learning techniques, this new one has produced noticeably superior outcomes in a range of applications, including voice, making it a very appealing research topic. This study offers a comprehensive analysis of the various experiments that were carried out when deep learning emerged as a field of machine learning for speech applications. As a result, it comparesthe various speech recognition algorithms to identify the model with the best performance and most appropriate properties.

Keywords: speech applications.

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Intelligent Spatial Based Queue Management System

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ABSTRACT

Lining for a long time to be served is an issue facing nearly everyone in diurnal base in numerous places similar as hospitals, banks and cafeterias. Most people get frustrated because their precious time is being wasted in staying to be served. Also, service agents feel stress whichmay affect poor service. The thing of this paper is to suggest an intelligent system, to manage effectively queuing of guests until getting the service. The suggested result provides A mobile Operation that manages the customer requests as well as a web based operation to manage ranges in the service association. The framework uses spatial Global Positioning System elements to deal with the lining of every client continuously.

Keywords: Lining, intelligent system, web based operation.

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PAPER ID: ICIRTCS-23-135

Internet of Things Based Water Quality Monitoring

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ABSTRACT

The process of monitoring the implementation of the repository system, reliability and feasibility, along with the performance of the monitor of the four parameters of the water. First all the sensor gives an input to the microcontroller. Then real-time data will be uploaded to the cloud storage using a Wi-Fi module. Next user will get a notification if the remote device network has found abnormal circumstances, then the alarm is turned on. Finally website page can retrieve the analysis data. The time interval associated with the control can easily be changed if we are to address one of the biggest weaknesses in this study, time, and cost. The study of this paper reduces the time and cost of the environment. In addition, in the present study, the preserved environment, and water resources. uploaded the data collected onto the webserver which can be easily accessed from anywhere around the world.

Keywords: Internet of Things (IoT), Wi-Fi, Parameters of Water, Water Resources, Health care.

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PAPER ID: ICIRTCS-23-136

Information Driven Modelling of Biological System Administrations

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ABSTRACT

The biological system dataset is contrasted here and all most appropriate calculations. In Random woods the way toward finding the root hub and parting the element hubs will run arbitrarily. Over fitting is one basic issue that may aggravate the outcomes, yet for Random Forest calculation, if there are sufficient trees in the woodland, the classifier will not over fit the model particularly for arrangement issues.The principle point of this paper is the means by which viably Data Driven Modeling (DDM) can be adequately utilized for biological system administrations contrasting and the traditional displaying, the DDM (Data Driven Modeling) measure gives the best exactness. Irregular backwoods with XGBoost (eXtreme Gradient Boosting) which an incredible, and lightning quick AI library where the trees are developed successively and the speed is expanded by equal preparing. This information is prepared utilizing Random Forest in XGBoosting with extra hyper boundaries and the exactness is anticipated.

Keywords: Data pre-processing, Random Forest algorithm, Predictive model,XGBoosting algorithms.

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PAPER ID: ICIRTCS-23-137

Providing Security For Out Sourced Data in Cloud Storage

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ABSTRACT

To protect outsourced data in cloud storage against corruptions, adding fault tolerance to cloud storage together with data integrity checking and failure reparation becomes critical. Recently, regenerating codes have gained popularity due to their lower repair bandwidth while providing fault tolerance. Existing remote checking methods for regenerating-coded data only provide private auditing, requiring data owners to always stay online and handle auditing, as well as repairing, which is sometimes impractical. In this paper, a propose a public auditing scheme for the regenerating-code-based cloud storage. To solve the regeneration problem of failed authenticators in the absence of data owners, introduce a proxy, which is privileged to regenerate the authenticators, into the traditional public auditing system model. Moreover, Design a novel publicverifiable authenticator, which is generated by a couple of keys and can be regenerated using partial keys. Thus, our scheme can completely release data owners from online burden. In addition, a randomize the encode coefficients with a pseudorandom function to preserve data privacy. Extensive security analysis shows that our scheme is provable secure under random oracle model and experimental evaluation indicates that our scheme is highly efficient and can be feasibly integrated into the regenerating- code-based cloud storage.

Keywords: Data pre-processing, Random Forest algorithm, Predictive model, XGBoosting algorithms.

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Auditing and Analysis of Network Traffic in Cloud Environment

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ABSTRACT

Cloud computing allows users to remotely store their data into the cloud and provides on-demand applications and services from a shared pool of configurable computing resources. The security of the outsourced data in the cloud is dependent on the security of the cloud computing system and network. Though, there have been numerous efforts on securing data on the cloud computing system, evaluation of data security on the network between cloud provider and its users is still a very challenging task. The audit of the cloud computing system and network will provide insights on the security and performance of VMs and the operating system on multiple data centers and the intra-cloud network managed by cloud providers and the wide-area network between the cloud user and cloud provider. Thus, network traffic analysis for cloud auditing is of critical importance so that users can resort to an external audit party to verify the data security on the network between cloud provider and its users. This paper presents the following key technologies required to analyze network traffic in the cloud computing environment: IP geolocation of network devices between cloud provider and its users, monitoring the data security of the cloud network path, and online mining of massive cloud auditing logs generated by cloud network traffic.

Keywords: IP Geo location, online mining, security risk assessment.

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PAPER ID: ICIRTCS-23-139

Comparison of Colorectal Histopathological Imaging Tissue Classification Performance using Deep Learning

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ABSTRACT

The automatic evaluation of pathological images is critical for the diagnosis and treatment of disease. Computer-aided systems are becoming more common in this field. Multi-class (8 different classes) tissue types were studied in colon cancer histopathological images in this study. In the medical field, data mining algorithms are used during the diagnosis phase. In a traditional method, the properties of the images are extracted first, and then the texture classification process is carried out using data mining algorithms. Textural feature extraction employs the Gray Level Co-occurrence Matrix (GLCM), Discrete Cosine Transform (DCT), and Local Binary Pattern (LBP). Machine learning algorithms such as k-nearest neighbours (KNN), support vector machines (SVM), random forests (RF), and logistic regression (LR) were used in conjunction with these attributes for classification. Tissue classification was performed on histopathological images using deep learning (convolutional neural network) as another method for removing attributes and performing classification at the same time. Transferlearning based on the ResNet-18 architecture, one of the convolutional neural network architectures, was used to automate tissue classification. The performance rates are also given in comparison to the determined feature and classification algorithm. In our experiments, the RF classifier with LBP and GLCM features achieved 82% accuracy, while the deep learning method based on the ResNet-18 architecture achieved 88.5% accuracy.

Keywords: Gray Level Co-occurrence Matrix (GLCM), Discrete Cosine Transform (DCT).

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An Unique Approach for Secure Protocols in Developed Cloud Computing

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ABSTRACT

Cloud Computing (CC) has as of late developed in heterogeneous circulated figuring. Distributed computing gives a steady on demand for organize access to a mutual pool of configurable planning resources. Resources suggest processing applications, arrange resources, stages, programming administrations, virtual servers, and registering establishment. Resources insinuate figuring applications, arrange resources, stages, programming administrations, virtual servers, and registering establishment. Distributed computing can be considered as another getting ready extraordinary that can give benefits on request at an unessential expense. The propose appreciated and routinely utilized organization models as a bit of the cloud point of view are Software as a Service SaaS), Platform as an organization (PaaS), and establishment as a Service (IaaS). In this paper we propose Data security in cloud development thinking about shared pool of assets. In SaaS, programming with the related information is sent by a cloud provider affiliation, and customers can utilize it through the web programs. Information security in the distributed computing is more tangled than information security in the standard information structures. The fundamental issues in the distributed computing join asset security, asset organization, and asset checking. Before long, there are no standard statutes and headings to pass on applications in the cloud, and there is a nonappearance of guideline control in the cloud

Keywords: data security, cloud computing(CC),shared pool

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Identifying the Amount of Fertilization Required For Rice Crops Using Image Processing System

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ABSTRACT

The project focuses on providing the information regarding the pesticide/insecticide and the amount of pesticide/insecticide to be used for an unhealthy crop. The user, who is the farmer clicks a picture of the crop and uploads it to the server via the android application. After uploading the image the farmer gets an unique ID displayed on his application screen. The farmer has to make note of that ID since that ID has to be used by the farmer later to retrieve the message after a while. The uploaded image is then processed and accordingly the features of that image are extracted. Based on those features the clustering of image is done and the best cluster giving the maximum information regarding the affected part is selected. Then the result consisting of the disease name and the affected area is retrieved. This result is then uploaded into the message table in the server. Now the Farmer will be able to retrieve the complete information in a presentable format by entering the unique ID he had received in the Application.

Keywords: Digital image processing, Image analysis, Android, Fertilization Management

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Smart ATM Pin Recovery and Secured ATM Transactions Based On Finger Print Identification

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ABSTRACT

ATM (Automated Teller Machine) is an electronic telecommunication device that is used to perform financial transaction without need for human clerk or bank teller. ATMs extend traditional banking hours by dispensing cash and making other transaction available 24 hours a day. In ATM machines, the user is identified by inserting an ATM card and authentication is provided by the customer entering a PIN. The PIN provided to the customer is compared with recorded reference PIN number in the bank server. In the existing system, the user has to insert the card and the PIN number. If the PIN is correct, the system allows for the transaction. Otherwise, the system asks for the PIN again and it allows maximum of three times to enter it. After 3 trials the ATM card will get blocked. To reactivate the card user need to visit the bank and do the bank formalities, which is tedious and time consuming job.Biometrics is the science of establishing the identity of an individual based on physical, chemical or behavioral attributes of a person. Fingerprint is a pattern of ridges and valleys on the surface of a fingertip. It often used for biometric identification. Fingerprints are detailed, nearly unique, difficult to alter and durable over the life of an individual. To reactivate that ATM card in the ATM center itself we are using fingerprint biometric.

Keywords: Fingerprint; ATM; PIN; Harris corner detection algorithm; SURF algorithm.

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Breast Milk Monitoring with Android Based On IOT Identification

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ABSTRACT

Provision of breast milk (breast milk) in infants is vital for growth and infant health. Once the importance of breastfeeding benefits make the government also make the rules about exclusive breastfeeding for 6 months contained in Government Regulation no. 33 of 2012. In the PP, getting breast milk is the right of a baby. At this time many breastfeeding mothers who work outdoors so needed milk stored in the cooler. To monitor the milk consumption needed by babies in a day, even per month is rather difficult to do manually. To solve the problem, designed a breastmilk monitoring tool with android-based IOT. This tool works by using an NFC sticker affixed to a bottle of milk, when the baby's milk will be consumed, the NFC on thebottle is tapped to the NFC reader that is connected to Wemos then processed and displayed theresults in android application. Breastfeeding mothers who work can monitor or monitor the amount of milk consumed baby whenever and wherever so that the nutritional adequacy of thebaby can be met properly. The result of the design is the communication between NFC and android there is an average delay of 2 seconds.

Keywords: Breast Milk Monitoring, IoT, Android.

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PAPER ID: ICIRTCS-23-148

Advanced 3D Image Processing Technique for Medical Field

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ABSTRACT

Image processing and pattern recognition has become a powerful technique in many areas. This includes Engineering, Computer Science, Statistics, Information Science, Physics, Chemistry and Medicine. Anyone who wants to extract data from image or visual project, image processing is required. Most of the image processing software's are able to process two dimensional images alone. This paper implements three basic image processing operations namely enhancement, blur and segmentation. Each of the operation can be implemented using a variety of algorithms. The algorithms are implemented using and their performance are compared in this paper. The proposed work produces better result of 3D images also.

Keywords: 2D- two-dimensional ,3D- three-dimensional ,CAD-computer-aided design, CT-computed to Mo graph , MIP-maximum-intensity projection, MRI-magnetic resonance image ,ROI-region of interest, STL-Standard Tessellation Language, STL Format-a file format to the stereo lithography computer-aided design (CAD) software created by 3D systems.

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PAPER ID: ICIRTCS-23-150

Vaccination Strategies Considering Hesitancy using Particle-Based Epidemic Simulation during Covid-19

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ABSTRACT

Vaccine hesitancy is one of the critical factors in achieving herd immunity and suppressing the COVID-19 epidemic. To demonstrate the efficacy of the simulator, we conducted extensive simulations for the province of Lecco, Italy. Many countries face this as an acute public health issue that diminishes the efficacy of their vaccination campaigns. Epidemic modelling and simulation can be used to predict the effects of different vaccination strategies. In this work, we present an open-source particle-based COVID-19 simulator with a vaccination module capable of taking into account the vaccine hesitancy of the population. The results indicate that the combination of both high vaccination rate and low hesitancy leads to faster epidemic suppression.

Keywords: Vaccine, Epidemic modelling, COVID

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PAPER ID: ICIRTCS-23-151

Soil Moisture Testing using IOT Sensors (Lorawan-Gateway)

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ABSTRACT

Underground wireless network solutions are severely challenged by the large radiofrequency propagation loss through soil. Where a method proposed in this paper, it overcomes problems by employing completely buried underground IoT sensors and communication modules mounted on LoRaWAN gateways that is uncrewed aircraft system. The UAS mounted LoRaWAN gateway eliminates the need for any in-field base stations and also allows the LoRa enabled sensors to transmit data over short distances with very low energy. Field tests were carried out using this approach to serve as a proof of concept. The received signal strength indicator (RSS) demonstrates that the proposed solution has good communication link margin and a significantly larger communication range than is necessary for reliable operation. this solution is easy to build, highly power efficient fashion, cost-effective, and scalable.

Key words: received signal strength indicator (RSS), Internet of Things (IoT), LoRa, scientific irrigation scheduling, soil moisture monitoring, UAS.

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PAPER ID: ICIRTCS-23-152

Counter Feit Pictures Detection using CNN Algorithm

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ABSTRACT

Now-a-days biometric systems are useful in recognizing person's identity but criminals change their appearance in behaviour and psychological to deceive recognition system. To overcome from this problem we are using new technique called Deep Texture Features extraction from images and then building train machine learning model using CNN (Convolution Neural Networks) algorithm. This technique refer as LBPNet or NLBPNet as this technique heavily dependent on features extraction using LBP (Local Binary Pattern) algorithm.

Keywords:- LBPNet, Deep Texture

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PAPER ID: ICIRTCS-23-079

Malicious User Detection Using Honey word and IP Tracking

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ABSTRACT

Now-a-days it has become very easy for an adversary to steal the password hash file and crack the hash passwords. Thus, the threat for each user accounts continues to increase rapidly. As the cybersecurity threats are increasing, new mechanism needs to be developed. To detect the password file breach, Juels and Rivest had introduced the concept of decoy passwords known as "Honey words". For every user account, set of false passwords are generated using honey word generation techniques. So, the hashed password databases consists of actual passwords and false passwords. For an adversary, when a password file is cracked, it becomes difficult to judge the real password. Honey word model sets off an alarm if any of the honey word is entered, notifying about the password file breach. Thus, there is a huge risk of an adversary being detected. In our model, we are implementing the decoy mechanism for protection of datafrom an unauthorized user and also tracking the IP of the detected user to take action against the malicious user.

Keywords: — Blocking, Decoy, Honeywords, IP, Intruder..

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PAPER ID: ICIRTCS-23-081

Development and Implementation of Application for Visualizing Pathfinding Algorithms

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ABSTRACT

As an introduction to the algorithm and its implementation, this article explains how pathfinding algorithms work. Users also gain more knowledge about how various algorithms and programming work in general. Knowing these strategies will give you a basic understanding of how to develop different navigation tools. A grid page with " start nodes" and "end nodes" constitutes the renderer. Viewers can enhance the overall picture by adding additional features such as mazes, walls, pendulums, and understand how these pathfinding algorithms solve everyday problems. Programmers must have a good understanding of interface programming languages and pathfinding techniques to create visualizers.

Keywords: Dijkstra's, A*, Greedy Best-First Search, Swarm, Convergent Swarm, Bidirectional Swarm Breadth-First Search, Depth-First Search Algorithms.

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Cell Phone Accident Avoidance System While Driving

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ABSTRACT

Every year, innumerable road accidents and deaths take place due to distracted driving. Large number of studies shows mobile phone usage while driving was the major reason for distracted driving. With the aim of preventing road accidents due to mobile phone usage while driving, we propose a highly efficient automatic electronic system for early detection of incoming or outgoing call, an antenna located on the top of driver seat used for detecting when the driver uses mobile phone and a low range mobile jammer with its range covers only driver seat which prevent drivers mobile phone from receiving signals from base stations.

Keywords: Mobile Phone Detection, Risk of using mobile phone while driving, Mobile Jammer.

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PAPER ID: ICIRTCS-23-156

Development of an Android Application for Smart Parking System

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Abstract: Present day's car parking has become major issue in urban area with lack of parking facilities.it is very difficult and frustrating to find a parking space in most metropolitan areas, especially during the rush hours.to solve these problem The proposed application provide an easy way for reservation of parking slot . In this application user can view various parking areas and also view whether space is available or not. If the booking space is available then he can book it for specific time slot. Also, this system provide an additional features for user.

Keywords: car parking.

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PAPER ID: ICIRTCS-23-142

Automated Toll Tax Collection System using NFC

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ABSTRACT

This article gives an important guideline for Automated Toll Collection System (ATCS) Using NFC and Theft Vehicle Detection. ATCS comes out/becomes visible as a coming together technology where time and (wasting very little while working or producing something) are important in toll collection systems now/recently. In this, NFC tag will be placed by toll authority having (like nothing else in the world) identification number (UIN) and user details. Active NFC tag will be attached to the vehicle. When vehicle passes through the tollbooth system, data on NFC will be read by NFC Reader and also sent to the server for checking (for truth). Server will check details and toll amount will be deducted from user's account. Theft Vehicle Detection is done with the help of different sets of computer instructions such as OCR and BLOB Detection.

Keywords: ATCS, NFC tag, UIN, NFC Reader, OCR Set of computer instructions, and Blob Detection.

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PAPER ID: ICIRTCS-23-054

Transfer Learning For an Automated Detection System of Fractures in Patients with Maxillo Facial Trauma

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ABSTRACT

An original maxillofacial fracture detection system (MFDS), based on convolutional neural networks and transfer learning, is proposed to detect traumatic fractures in patients. A convolutional neural network pre-trained on non-medical images was re-trained and fine-tuned using computed tomography (CT) scans to produce a model for the classification of future CTs as either "fracture" or "noFracture". The model was trained on a total of 148 CTs (120 patients labeled with "fracture" and 28 patients labeled with "noFracture"). The validation dataset, used for statistical analysis, was characterized by 30 patients (5 with "noFracture" and 25 with "fracture"). An additional 30 CT scans, comprising 25 "fracture" and 5 "noFracture" images, were used as the test dataset for final testing. Tests were carried out both by considering the single slices and by grouping the slices for patients. A patient was categorized as fractured if two consecutive slices were classified with a fracture probability higher than 0.99. The patients' results show that the model accuracy in classifying the maxillofacial fractures is 80%. Even if the MFDS model cannot replace the radiologist's work, it can provide valuable assistive support, reducing the risk of human error, preventing patient harm by minimizing diagnostic delays, and reducing the incongruous burden of hospitalization.

Keywords: MFDS (Maxillofacial Fracture Detection System), CT (Computed Tomography), CNN(Convolutional Neural Network),Transfer Learning.

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Multi-Cdn: Towards Privacy in Content Delivery Networks

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ABSTRACT

CDN (Content delivery Networks) consists of Content Provider (CP) and the number of distributed nodes, CP will upload some objects and nodes will send request to CP to access that object, to reduce transmission delay nodes will maintain cache of access objects, if other nodes send request for same object, then content provider forward that request to nearest nodes which maintain that objects in cache. Response will be sent from nearest node cache so transmission time will be reduced. In the propose work we are encrypting file popularity and entire cache details which consists of object name (file name), file access count (popularity), file data and file encryption key. If any attacker access cache, then he will not be able to understand file name or popular objects etc. Sometimes by seeing query attackers or internal malicious users will analyse the response to identify the output data, to overcome from such issue in this paper every time queries data will be changed even for same query also by adding fake data in query. In simple terms every time query will be changed, and attackers cannot be able to identify queries also.

Keywords: CDN, CP.

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ABOUT CONFERENCE

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