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COLLEGE OF ENGINEERING**

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5th NATIONAL CONFERENCE ON VLSI, COMMUNICATION AND SIGNAL PROCESSING (NCVCS-2023)



**RajaRajeswari college of
Engineering**



**DEPARTMENT OF ELECTRONICS AND
COMMUNICATION ENGINEERING**

Organizing

5th NATIONAL CONFERENCE

on

**VLSI, COMMUNICATION AND
SIGNAL PROCESSING**

(NCVCS-2023)

5th May 2023

5th National Conference on

VLSI, COMMUNICATION AND SIGNAL PROCESSING

(NCVCS-2023)

5th May 2023

**DEPARTMENT OF ELECTRONICS AND
COMMUNICATION ENGINEERING**

Editor

Dr. L. Rangaiah



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Founder Chairman's Message

Greetings It gives me immense pleasure to invite you all for the 5th National conference organized by the department of ECE of RajaRajeswari College of Engineering. VLSI, Communication and Signal processing is undergoing tremendous innovations both theoretically and from application point of view.

RajaRajeswari College of Engineering with a relentless pursuit of excellence, aims at providing immaculate and superior knowledge thus fostering research.

Conferences like these present inceptive, innovative and invaluable research developments , I am sure will be invaluable to the students as well to the faculties as there immense knowledge sharing.

I congratulate the Organizing committee and extend my warm wishes for the success of the conference.

**Dr. A.C.Shanmugam, B.A.LLB, FIMSA, FRCPS (Glasgow, UK)
Former MLA., MP., Chairman, Rajarajeswari Group of Institutions**



President's Message

Kudos!! to the organizing committee for having organized this National conference on VLSI, Communication and Signal Processing. Conferences provide us the platform to explore new concepts, understand latest trends and equip ourselves with greater learning. I am positive that the conference will be a feather in the cap of RRCE and wish the entire team the very best.

**A.C.S. Arun Kumar, B.Tech (Hons)., LMISTE.,MIET.,(UK)., LMCSI.
President, RajaRajeswari Group of Institutions**



Executive Director's Message

With the explosion of connected devices driving higher network traffic and massive cloud computing, the electronics industry is the fastest growing consumer of energy. The conference thrives on information sharing, providing glimpses of path breaking research and thus empowering the students and the faculties with latest technical know-how.

We have always been supporting of such endeavors as we believe that a student education encompasses all aspects of learning like class room teaching, guest lectures, workshops and conferences.

I extend my warm regards to the entire team and urge them to conduct such events regularly and I am sure that the event will be grand success.

Dr. Vijayanand. S, Executive Director, RRG I



Special Officer's Message

I am delighted in acknowledging the National Conference NCVCS-2023 organized by the Department of Electronics and Communication Engineering on "VLSI, Communication and Signal Processing".

I appreciate the organizing committee for showing a keen interest in organizing a successful Conference and contributing new ideas and research findings. I wish them for their endeavors to spread knowledge.

Dr. S. Jeyabalan
Special Officer, RRG I



Principal's Message

It gives me great pleasure to welcome you to the National Conference on VLSI, Communication and Signal Processing (NCVCS-2023). This Technical Conference will provide a prestigious platform by bringing together national technical researchers and students to exchange their experienced knowledge and expertise issues relating to the dominating technology trends. Research activities across all the engineering fields pave the way for the industrial world to strive forward with huge advancements. As an educational institution, encouragement and support to research can be provided by establishing a suitable platform for the research community, to interact with each other and to share the knowledge.

Dr. R. Balakrishna
Principal, RRCE



Convener's Message

I welcome the participants of NCVCS-2023. The main goal of organizing this conference is to share and enhance the knowledge of each and every individual in this world. We have given a good opportunity for those who have a thirst in knowing the present technological developments and also share their ideas. Furthermore, this conference will also facilitate the participants to expose and share various novel ideas. The conference aims to bridge the researchers working in academia and other professionals through research presentations and keynote addresses in current technological trends. It reflects the growing importance of intelligent Computing systems as a field of research and practice. You will get ample opportunities to widen your knowledge and network. I thank the conference committee for extending their valuable time in organizing the program and all the authors, reviewers, and other contributors for their sparkling efforts and their belief in the excellence of NCVCS-2023.

Dr. Rangaiah L
Convener (NCVCS-2023)

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RECOGNITION OF ADHD SYNDROME IN CHILDREN

**Sunitha R, Monika MK
Nayana SR, Sushma G S & Supritha S**

Abstract

Attention Deficit Hyperactivity Disorder (ADHD) is a Disruptive Behavior Disorder characterized by the presence of a set of chronic and impairing behavior patterns that display abnormal levels of inattention, hyperactivity, or their combination. Since most individuals especially children display these behaviors from time to time, it is be difficult to differentiate behaviors that reflect ADHD from those that are a normal part of growing up which makes the diagnosis a tricky job. Electroencephalogram (EEG) is a best method for monitoring, recording and measuring spontaneous voltage fluctuations of the brain that caused due to the ionic current associated with the neurons. Due to having many advantages of using EEG over MRI, PET and MEG in the detection and diagnosis of ADHD, in this proposed system a well-known artificial intelligence technique, the SVM algorithm, is used for the diagnosis of the disorder. The major advantage of using SVM is that it helps in controlling the complexity of the problem of diagnosing. The proposed methodology improves on the overall identification accuracy; SVM algorithms are known to give good solution to very complex problems. The proposed system extracts the features which are responsible for ADHD syndrome by SVM, method using the python language provides 99% of efficiency it helps in early detection of abnormalities and starts the exact treatment.

EQUIPMENT CONDITION MONITORING SYSTEM BASED ON IOT

**Vani S Badiger, Keerthi BN
& Megha HV**

Abstract

The importance of the equipment condition monitoring system for the machining workshop is due to the rising demands on the effectiveness and dependability of the machining process. Accuracy can vary in a machine or equipment condition monitoring system. Data collection and processing from workshop equipment are necessary in order to construct the monitoring system. Consequently, a calibration interface is needed on the system's dashboard. Considering the intricate machining environment and the variety of equipment in the workplace. The suggested system calls for the development of a system for monitoring the state of equipment using heterogeneous data from several sources. The multisource acquired data from the sensors is then analyzed, stored in the Cloud and anytime an action is required, an alert signal is given to the user and an alarm is triggered to ensure that the action is taken immediately. Such that the machinery or equipment is promptly protected from changes in factors like temperature, humidity, pressure, altitude and vibrations. After analyzing the data from the sensors, an alert signal is sent through mail depending on the threshold levels that are defined for each parameter with respect to the specific pieces of equipment.

SMART STAIRLIFT FOR DISABLE/ELDERLY PEOPLE USING NODE MCU

**Sumitha Manoj, Prashanth RS
Manoj Kumar S, Manoj MR & Pavan M**

Abstract

The main objective of this project is to develop an indoor as well as outdoor stair lift. There are many old and physically disabled people in the world and it is difficult for them to climb stairs as compared to normal persons. So, to help them and to help the persons who cannot afford lift as their houses are small, the project is made. The most concern of this project is to fabricate a mechanism which will lift them up and put them down whenever they want and at very low budget. While going up and down the stairs safety is the primary concern, the present-day, top-quality lifts include many features to maximize comfort, ease of use and attractiveness in the home, which is a safe and affordable solution to overcome the unique needs and challenges that people experience on the stairs. This Paper deals with fabrication of stairs with escalator (stair lift) which consist of rope and pulley mechanism which lifts up and down the platform to move person. This helps the person to facing difficulties in climbing stairs. We propose equipment which could be handled easily by the person, since it is a mechanical engineering project. Our major requirement was that to make the project at low budget as compared to lift with low maintenance without risk of power cut & human life.

AUTOMATIC MILK QUALITY ANALYSING WITH BILLING SYSTEM

**Rangaiah L, Sonali Chavan S
Varnitha M Shet, Sneha G
& Sukruthi R Gowda**

Abstract

Farmers supply the milk to the Dairies and get the payment based on the purity of milk. Late examinations detect that crude milk contains pathogenic life forms which could bring about contamination if devoured which can build the rate of infections and break down the personal satisfaction. Thus, creating apparatuses for constant and shrewd detecting is required for quality checking and to settle on reasonable and opportune choice. As the milk is kept for several days, the expansion of bacterium will get increased which ends up in undesirable smell, style and harmful substances. Hence there is a necessity for monitoring system to discover and determine the spoilage of milk and turn out into a healthy product. The work aimed to present some aspects regarding milk quality and quantity estimation. The various factors like FAT, refrigerated status of milk and Adulterated chemicals percentage in the milk are identified. Generating the desired rate for the amount of fat in the milk. So, the system calculates these parameters.

DEVELOPMENT OF HEALTH MONITORING ROBOTIC NURSE

**Gagan SJ, Hollen Loukham, Dhanush D
& Vivek MR**

Abstract

This paper highlights the role of robotics in health care. This Paper also describes the evolving role of robotics in healthcare and allied areas with special concerns relating to the management and control of the spread of the novel coronavirus disease 2019 (COVID-19). The prime utilization of such robots is to minimize person-to-person contact and to ensure cleaning, sterilization and support in hospitals and similar facilities such as quarantine. This will result in minimizing the life threat to medical staff and doctors taking an active role in the management of the COVID-19 pandemic. The intention of the present research is to highlight the importance of medical robotics in general and then to connect its utilization with the perspective of COVID-19 management so that the hospital management can direct themselves to maximize the use of medical robots for various medical procedures. This is despite the popularity of telemedicine, which is also effective in similar situations. In essence, the recent achievement of the Korean and Chinese health sectors in obtaining active control of the COVID-19 pandemic was not possible without the use of state of the art medical technology

INTRACRANIAL BRAIN HEMORRHAGE DETECTION IN CT SCANS USING DEEP LEARNING

**M Suresh, Varshith Raj CR
Varun Raj CR, Vishwanath BS
& Yatheesh RB**

Abstract

Intracranial hemorrhage is a serious medical problem that requires rapid and often intensive medical care. In intracranial hemorrhage treatment patient mortality depends on diagnosis based on a radiologist's assessment of CT scans. In this project, we propose the intracranial hemorrhage detection system using deep learning model to accelerate the time it takes to identify them. We can distinguish between the subtypes of the damage on the basis of the character of bleeding and its location in the brain region. To assist with this process, a deep learning model can be used to accelerate the time it takes to identify them. This project aims to help and facilitate radiologists, medical experts in understanding the way how machine learning can be potentially used in the diagnosis of hemorrhage. We developed a convolutional neural network based on sequential for classification, and we trained and tested a sequential-based model for predicting the type of bleeding. In making the accurate multiclass prediction, our model has an accuracy of 92.3%.

OUTLIER DETECTION FOR DIFFERENT APPLICATIONS

**Muruganandham, Amaresh C Sarawad
Surya D & Vinay HR**

Abstract

Outlier detection is a critical task in many applications where identifying anomalies in the data is important for ensuring data quality, identifying potential problems, and making informed decisions. This paper presents a comprehensive review of outlier detection techniques in different applications, including data mining, machine learning, computer vision, network intrusion detection, fraud detection, and healthcare. We discuss various statistical, clustering, distance-based, and machine learning-based approaches for detecting outliers, highlighting their strengths and limitations. We also discuss the challenges associated with outlier detection, such as data sparsity, high dimensionality, and class imbalance, and review some of the recent advancements in the field, including deep learning-based approaches and ensemble methods. Finally, we present some open research directions and discuss potential future directions for outlier detection in different applications.

LORA NETWORK BASED WIRELESS COMMUNICATION AND MONITORING USING IOT

**Lokesh K, Akshatha B
Ajantha K & Gowthami R**

Abstract

Farmers take more concern in protecting their cattle. But the environmental factors greatly affect the health of cattle such that they may get affected due to various disorders. Therefore, this proposed project is based on monitoring the health conditions of the cattle by comparing the present health condition required for normal cattle. The parameters like humidity, temperature, gas values etc. are compared with standard parameters and the information is transmitted through IoT. The farmer gets notified and inspected when the veterinary doctors are not available at the instance. Availability of internet at rural areas is very difficult to access. So, by considering this factor we have added LoRa to get the intermediate connectivity.

HEPTOCELLULAR CARCINOMA DETECTION USING DEEP LEARNING FRAMEWORK

**Vijaya SM, AM Prasanna Kumar
Harshitha BL , Sanjana N & Harshitha B**

Abstract

Liver is one of the largest gland and largest internal organ in human body. Abnormal growth in cell in the liver causes liver cancer, which also known as hepatic cancer. People having liver tumor died due to inaccurate detection. Detection of this tumor is mostly difficult and it can be detected at advance stage and life-threatening. Its better detect the tumor at an early stage .In this project we detect liver cancer at the earlier stage using image processing. This project consist of automated method of detecting the liver cancer in abdominal CT images and classifying CNN algorithm. The model consist of many stages the image is normalized and pre-processed using the median filter to remove noise . Histogram equalization of the image ,the feature are extracted based on the Discrete wavelet Transformation(DWT).Finally ,liver CT images are classified by implementing support vector machine and segmented result.

SMART WATER BOTTLE

**Rashmi Shree N, Shruti Navalagi
& Shivkumar HM**

Abstract

Nearly half of India's population suffer from dehydration. THIRST Reasearch (2009) proves that India still have a low awareness of drinking water. Consuming enough water can be a way to prevent dehydration. Smart bottle application is able to provide amount of daily water needs based on user's profile that is registered. The problem in calculation of water consumption can be overcome by using water flow sensor calculation data. The implementation result of smart water bottle application proves that the water needs of each person can be known, the water that has been consumed can be automatically calculated, and push notification can be a reminder about drinking water to the smart bottle users during their busy life. In our busy lives, it is really hard to remember to drink enough water and most of the time we forget to drink the water whether we are in home, office or on the go. So, in order to build a healthy water drinking habit, it's important to track your water intake every day. To track the water intake we made water bottle smart using Arduino nano, along with a name displayed of the user with the purifier attached with it on top.

AQUA FRIEND: SMART AQUACULTURE MONITORING SYSTEM

**Ajay M, Apsana A Nadaf, Chaithra A
Chethan AK & Divya Raghuram Prabhu**

Abstract

IoT, or the Internet of Things, is a fast expanding technology that is utilized to aid emerging and developing economies on the economic and social fronts. India is the third-largest producer of fish in the world. The annual production of aquatic products is 11 million tons on average. The use of IoT is growing across many industries, including transportation, education, mining, medicine, and industry. Aquatic organisms are raised under regulated, natural conditions in freshwater and marine settings. However, significant changes to the current labor-intensive and resource-inefficient practices are needed for fish farming to be economically and sustainably viable. The major goal of this project is to build an Internet of Things(IoT)-based monitoring system that uses an Embedded System and improving fresh water fish cultivation and problem-solving using ESP32 microcontroller and google fire base. With the aid of actuators and sensors, this system can be deployed as an embedded system to regulate and keep an eye on the crucial environment factors. Salt, nitrates, carbonates, pH, dissolved oxygen, and ammonia are a few examples of possible parameters. It is possible to construct an alert notification system that notifies farmers by Wi-Fi and allows them to check the status of actuators and sensors using an Android application.

BONE CANCER DETECTION USING DNN

**Santosh Chavan, Ullas A
Ritesh L, Punith B & Tejas N**

Abstract

Cancer is a group of diseases involving abnormal cell growth with the potential to invade to other parts of body. A bone tumor, (also spelled bone tumour), is a neoplastic growth of tissue in bone. Abnormal growths found in the bone can be either benign (non cancerous) or malignant (cancerous). Bone tumors may be classified as "primary tumors", which originate in bone or from bone derived cells and tissues, and "secondary tumors" which originate in other sites and spread (metastasize) to the skeleton. In this paper a DNN model called as VGG16 which has layers such as Convolutional ,ReLU , Fully connected , Max Pooling layer and softmax has been used by using this model it is possible to predict the viable and non viable cancer present in the bone tissue. Here about 570 image datasets to train and test the model has been used which gave an accuracy of about 82%. 75% of the data for training and rest of the 25% of the data for testing has been used. The output is classified based on binary values 0 and 1 .where 0 describes non viable cancer and 1 describes viable cancer.

IMPLEMENTATION OF CHACHA AND DES CIPHER FOR CRYPTOGRAPHIC AUTHENTICATION

**Chaithanya S, Meghana N
Nuthana GN, Pavithra P & Pooja R**

Abstract

We are introducing VLSI Design of cha-cha Stream Cipher for High Performance Data Security. The analysis of hardware implementations for the stream cipher Salsa20 and Cha-Cha is presented. Increasing Security of Cha- cha we add DES Tag Generation in both Encryption and Decryption Side. The area and throughput exploration of five VLSI designs of the underlying algorithms has been evaluated. The proposed design increase the through put using Pipelined blocks inside the Stream cipher Blocks.

REAL TIME OBJECT MOTION DETECTION USING DEEP LEARNING METHODS

**Haritha K, Purimetla Jagadeesh
Sanjay GS, Santhosh Gowda KR & Vishwas B**

Abstract

This project aims to develop an object motion detection system using Python. The system utilizes computer vision techniques to detect and track moving objects in a video stream. The project includes preprocessing of the videostream to enhance object detection, background subtraction to identify moving objects, and object tracking using feature extraction and matching algorithms. The system is implemented using OpenCV, a popular computer vision library in Python. The proposed system is tested on various video sequences to demonstrate its effectiveness in detecting and tracking moving objects. The results show that the system is robust and accurate in detecting and tracking objects in real-time. The project can be useful in various applications such as surveillance, traffic monitoring, and robotics.

STOCKPILE TRACK-OFF APPROACH

Sadhana R, Shwetha & Rithin D

Abstract

India is a nation where the agrarian sections have a significant influence on the economy. Consistently ranchers deal with various issues because of the capacity prerequisites, the absence of legitimate checking of the food put away. Stockrooms are utilized for capacity purpose. Just a little piece of the food grains is put away in the state-run distribution centres. An enormous piece of the harvests is left without suitable storage spaces. The worldwide creation of Incorporates maize, wheat, and rice. However, because of the variance in the market, the misfortunes that the nation faces consistently because of inappropriate stockpiling is about RS. 50,000 crores in financial terms. A food warehouse is a place used by food establishments or individuals to store and distribute food for wholesale. So in this project we use a proposed solutions for this problem. We use raspberry pi, IR sensor, fire sensor, smoke sensor, Temperature sensor, GSM module, Esp32 micro-controller. By writing an Embedded C code to run the out-put and we use the Arduino ide to program and dump the program in esp32 micro-controller. We get the out-put in the node-red dashboard using VNC viewer. The data is collected to the micro-controller and it is sent to node-red dashboard by MQTT protocol and we obtain the output.

DETECTOR ROBO FOR FACE MASK AND TEMPERATURE DETECTION

**Deepika J, Gaurav M Pawar
Ajay Kumar K & Govardhan BS**

Abstract

The first step to detect covid is by scanning for fever. Also, we need to monitor every person for a mask. We have temperature checking systems for every entrance for scanning, but manual temperature scanning has a lot of disadvantages ..To solve this problem, we here propose a fully automated temperature scanner and entry provider system. It is a multipurpose system that has a wide range of applications. The system makes use of a contactless temperature scanner and a mask monitor. The scanner is connected directly with a human barrier to bar entry if high temperature or no mask is detected. Any person will not be provided entry without temperature and mask scan. Only person having both conditions is instantly allowed inside. The system uses temperature sensor and camera connected with a ARDUINO system to control the entire operation. The camera is used to scan for mask and temperature sensor for forehead temperature. The raspberry processes the sensor inputs and decides whether the person is to be allowed. In this case the system operates a motor to open the barrier allowing the person to enter the premises.

ADVANCED HEALTH MANAGEMENT USING MACHINE LEARNING

**Rangaiah L, Loknath N, NitishYumnam
Gowtham DM & Muneeb Gull**

Abstract

The healthcare industry is constantly evolving with technological advances and one of the innovations is the smart healthcare monitoring system. The system is designed to improve the quality of care by enabling real-time monitoring and prediction of patient health status, enabling timely intervention, and reducing hospitalizations. The Smart Healthcare Monitoring System uses machine learning (ML) algorithms to analyse patient data collected through various sensors and wearable devices such as smart watches, fitness bands and health monitoring apps. The system then uses this data to develop personalized predictive models that can detect potential health problems such as cardiovascular disease, diabetes, and respiratory disease. The system can also monitor and alert healthcare providers when there are unusual changes in a patient's health. ML algorithms reduce the risk of serious illness and hospitalization by predicting potential complications and alerting healthcare providers before a patient's condition worsens. The Smart Healthcare Monitoring System also has several benefits for patients. First, it helps patients maintain a healthy lifestyle by providing personalized insights into their health and well-being. Patients can track their daily physical activity, including B. Setting fitness goals based on steps taken, calories burned, sleep patterns and preferences. Second, the system can improve medication adherence by reminding patients to take their medication on time. This is especially useful for older patients and those with chronic illnesses who have difficulty remembering their medication schedules. Third, the system can reduce the need for frequent hospital visits and tests by enabling remote monitoring of patient health. This allows patients to receive treatment in the comfort of their own home rather than requiring frequent hospital visits, saving time and money for both patients and healthcare providers. Overall, smart healthcare monitoring systems are a promising technology with the potential to revolutionize the healthcare industry. The ability to monitor and predict health problems, improve medication adherence, and enable remote monitoring can improve patients' quality of life and reduce healthcare costs for providers. However, implementing the system presents some challenges, including B. Privacy and security issues, interoperability issues, and the need for standardized data collection protocols. Addressing these challenges is essential for the widespread adoption and success of Smart Healthcare Monitoring Systems by healthcare providers and policy makers. In summary, smart healthcare monitoring systems using machine learning algorithms are a game-changing technology with the potential to transform the healthcare industry. Improve patient outcomes, reduce hospital stays and provide personalized care. However, there are some challenges that need to be addressed to ensure successful implementation and adoption.

POWER GENERATION THROUGH HUMAN LOCOMOTION USING PIEZOELECTRIC SENSORS

**Sumitha Manoj, Prathyusha H Kumar,
Sanjana H & Sherlin Jagath J**

Abstract

The production of electric power from the foot step movement of the peoples and the pressure exerted during walking which is fritter away is the main theme of this paper. The mechanical power transformation into electrical power as the pressure exerted by the footstep and by using transducers is basically called as "Foot step power generation system". Power is produced by the power generating floor and it is basically the production of electrical energy from kinetic energy. The main aim is to overcome the power crisis throughout the world although it is not enough to fulfill over excessive demand of electrical energy but it will be able to change and decrease reliance on old method of generating electricity. It can be installed on road side footpath, parks and jogging tracks and many other public place, airport etc. and have great impact of this and will create great difference in the electrical power generation system. We can produce energy that can be stored in a rechargeable battery, so that we can use it for our later purposes and it can be also placed in public places like street light, mobile charging etc.

DESIGN OF DNA-AES BASED CRYPTO PROCESSOR FOR HIGH SECURITY

**Chaithany .S, Nandyala Pavan Kalyan
Nithish Kumar S , Nithya Rani N
& Nithya S Prasad**

Abstract

The AES can be programmed in software or built with pure hardware. In this paper, Advanced Encryption Standard (AES) is an approved cryptographic algorithm that can be used to protect electronic data, in that we combined with DNA ENCODING for High Security. We propose a fast and pipelined AES in-memory implementation, to encrypt the whole part of the memory only when it is necessary. Rather than adding extra processing elements to the cost-sensitive memory, we take advantage of DNA Encoding logic operation capability to implement the AES algorithm. This project proposes a method to integrate the AES encrypted and the AES decrypted. This method can make it a very low complexity architecture, especially in saving the hardware resource in implementing the AES Sub Bytes module and Mix columns module etc. Most designed modules can be used for both AES encryption and decryption. The proposed architecture is suited for hardware-critical applications, such as network security, ATM Machines, smart card, PDA, and mobile phone, etc. This project presents the AES algorithm with DNA Coder regard to FPGA and Verilog language. Xilinx 9.1 and ModelSim software is used for simulation and optimization of the synthesizable Verilog code.

CONTROL OF LONG RANGE QUADCOPTER USING NODE MCU

**A Muruganandham, Ajay AM
Akanksh Shetty, Basavaraju M
& Chandan J**

Abstract

This abstract outlines the design and implementation of a long-range quadcopter using the NRF24L01 wireless communication module. The quadcopter is controlled remotely using a joystick and a wireless communication link established between the ground station and the quadcopter using NRF24L01 modules. The quadcopter's control system comprises of an Arduino microcontroller, which receives commands from the ground station and sends control signals to the quadcopter's motors. The quadcopter's frame, motors, and propellers are designed for high efficiency and long-range flight. The system is tested in open spaces to validate its long-range capabilities and robustness in handling different weather conditions. This project demonstrates the feasibility of using NRF24L01 wireless communication modules for long-range drone control and highlights the importance of designing an efficient and reliable control system for drones to ensure safe and successful operation.

CONTROL AREA NETWORK BASED AUTOMOTIVE SURVEIL

**Ajay M, Tousif Ali Muzawar
Syed Avez Hussain
Swathi J & Spandana CS**

Abstract

The use of Control Area Network (CAN) in automotive surveillance systems has become increasingly common. CAN provides a reliable and high-speed communication protocol that allows for real-time monitoring of critical vehicle parameters, such as engine speed, fuel consumption, and emissions. In a typical automotive surveillance system, sensors are used to measure various parameters of the vehicle and transmit the data to a central control unit via the CAN bus. The control unit then processes the data and generates alerts or takes corrective actions as necessary. One of the key benefits of using CAN in automotive surveillance is its ability to provide deterministic communication, which is critical in safety-critical applications. CAN also allows for easy integration of sensors and control units from multiple vendors, which simplifies system design and reduces costs. Another advantage of using CAN in automotive surveillance is its ability to operate in harsh environments. CAN is designed to operate in noisy environments and can withstand extreme temperatures, making it well-suited for use in vehicles.

POSITION DETECTION FOR WIRELESS CHARGING OF ELECTRIC VEHICLES

**V Sreepathi, Jaswanth Gowda AC
Kaliprasad M, Manoj D & Manjunath Uppar**

Abstract

For a number of years, wireless charging for electric cars (EVs) has been under research in anticipation of the increased usage of these vehicles . EVs may now be charged effectively and conveniently using wireless charging devices. from a similar ground source, originating from several classes and at a variety of power levels. The method to identify the aligned position of the transmitter and receiver coil, they are utilised in wireless charging for electric vehicles is presented in this study. The use of a retroreflective photoelectric sensor can improve the precision and dependability of a traditional position detecting system. With the suggested technique, the system runs continuously at its most effective efficiency and more accuracy. The technology of wireless power transmission (WPT) is gaining popularity and finding use in a variety of fields. Without the need for interconnections, power is transmitted from a source to an electrical load. Where physical wiring is impractical or impossible, WPT can be used to power electrical equipment. The suggested system also incorporates Internet of Things (IoT) technology, which enables remote monitoring and control. experimental analysis of the system's effectiveness using and without presented technique are compared to validates the proposed system.

ENCRYPTION OF DATA USING AES 256 IN VERILOG

**Vijaya SM, Swetha S
Trikaleshwar S, Tejas I Telkar
& Thakshith BK**

Abstract

The Advanced Encryption Standard (AES) algorithm is one of the most widely used symmetric block cipher algorithms in the world. This algorithm has a unique structure for encrypting and decrypting sensitive data and is used in hardware and software around the world. It is very difficult for a hacker to get the actual data when it is encrypted with the AES algorithm. There is currently no evidence that this algorithm has been cracked. AES can handle three different key sizes like AES 128, 192, and 256 bits, and the block size for each of these ciphers is 128 bits. This project will design the hardware architecture and implement the Advanced Encryption Standard (AES) algorithm based on a Field Programmable Gate Array (FPGA) using High Level Language (HLL). This design focuses on maximizing the use of available resources. Therefore, we minimize hardware resource usage and power consumption, and perform global optimization of PPA (power, performance, area) parameters to the best of our knowledge.

FOREST FIRE DETECTION USING OPTIMIZED SOLAR POWERED WIRELESS SENSORS NETWORKS AND LORA TECHNOLOGY

**Vani S Badiger, Rahul MR
Sujay GS & Madesh N**

Abstract

A novel approach for forest fire detection using image processing technique is proposed. A rule based color model for fire pixel classification is used. The proposed algorithm uses RGB and YCbCr color space. The advantage of using YCbCr color space is that it can separate the luminance from the chrominance more effectively than RGB color space. The performance of the proposed algorithm is tested on two sets of images, one of which contains fire; the other contains fire-like regions. Standard methods are used for calculating the performance of the algorithm. The proposed method has both higher detection rate and lower false alarm rate. Since, the algorithm is cheap in computation it can be used for real time forest fire detection. An effective forest- response is critical for minimizing the losses caused by forest fires.

EV CHARGER USING SOLAR ENERGY

**D. Soby, Poorva Pai
Roopa R & Sneha**

Abstract

Today energy is the main inspiration for socio-economic development. But due to incremental rate of environmental concern renewable energy provide a significant interest. This alternative power source is continuously achieving greater popularity due to continuous reduction in fossil fuels. It is the energy comes from sun, wind, rain etc. Among the non-conventional, renewable energy sources, solar energy affords great potential for conversion into electric power. Maximizing power output from a solar system is desirable to increase efficiency. In order to maximize power output, needs to keep the panels aligned with the sun. This paper deals with the electricity generation using solar power. The proposed system ensures the optimization of the conversion of solar energy into electricity by properly orienting the panel in accordance with the position of the sun. The operation of the paper is based on a Stepper motor intelligently moves a panel according to the light intensity of the sun sensing by light sensor.

AUTONOMOUS CAR

**Santosh Chavan, Sameer Kulkarni
Shreyank. H, Prajwal. Br & Prajwal .G**

Abstract

Our project proposes to minimize that in an autonomous driving system, the field of view spans multiple cameras placed around a car driven through numerous driving scenarios. Sensor data is received by the analyzing unit at a high velocity, also the camera provides over, millions of images for a small drive of about half a mile. A simple example of this is when pictures clicked on burst mode often have more throwaways than the ones which can be utilized. Efficient processing of a high volume of images is therefore a challenge which autonomous systems such as the driving system face. Given the multiple cameras present on autonomous cars, providing high resolution pictures through varying driving scenarios, the objective is to process and analyze this huge dataset efficiently. This project shall demonstrate the power of distributed computing in image processing algorithms and analysis of incredibly large datasets using a distributed approach. This paper gives a statistical proof of concept of how implementing a distributed parallel programming paradigm can improve autonomous systems such as the driving system which deal with high volumes of images.

FIRE DETECTION AND RESCUE SYSTEM BY CAMERA USING ARTIFICIAL INTELLIGENCE

**D Soby, Kavya C
Kushala VK, Padmitha S
& PV Sai Lakshmi**

Abstract

In this work, we build and create a real-time camera and water pump surveillance system powered by artificial intelligence for large-scale fire detection and rescue. The Raspberry Pi, a potent open source microcontroller, an inexpensive camera with a water pump, and other components are used in this arrangement. We used the RGB colour model to convert it to HSV and get edge detection. This system can be installed practically anywhere for the purpose of detecting fires, including shopping centers, office buildings, and many other public areas. The accuracy, latency, and detection area of traditional fire detection techniques using smoke and heat detectors are disadvantageous. Using an unmanned aerial vehicle with an integrated visual detection system, we propose and demonstrate a real-time fire detection solution for large-area surveillance in this work.

AN IOT AUTOMOBILE ROBO IMPLEMENTATION FOR DISASTER MANAGEMNET

**Haritha KS, Dimple Y
Manasa BG & Varshitha DC**

Abstract

Most road accidents occur because of drowsiness due to careless driving of drivers. This system provides Eye Blink Monitoring (EBM) system that will alert the driver in drowsiness. Using an IR sensor the driver's eye is continuously monitored. The output of the system will have no effect on the normal eye blink rate. The IR sensor receives abnormal blinking rate and an alarm will ring to wake him/her up when the driver feel asleep. In this system we use alcohol sensor to detect the concentration of ethanol in air. If detected there will be no engine ignition. The speedometer and engine's computer receives the information from the engine speed sensor to tell the transmission to shift. Accident sensor need to detect a crash and convert it to usable signals within milliseconds.

FAKE ACCOUNT DETECTION ON TWITTER USING MACHINE LEARNING

**Shridev Udupa ES, Vinushreee K
Someshwar S & Shreyanka JT**

Abstract

Social media sites have become commonplace in today's world. Social networking sites are now used for a wide range of activities, including news, promotion, advertising, and communication. Some malevolent social media accounts spread misinformation and advance political agendas, among other things. One of the fundamental issues with social networks is this. Therefore, it is important to find malicious accounts. In this study, technologies based on machine learning were employed to find bogus accounts that might lead individuals astray. In order to achieve this, the created dataset underwent pre-processing, and bogus accounts were identified using machine learning methods. False accounts are found using the SVM (SUPPORT VECTOR MACHINE) method. These approaches' classification abilities are contrasted with those of the decision tree and logistic regression algorithm and the support vector machine.

SELF-WOUND ANALYSIS USING MACHINE LEARNING AND IMAGE PROCESSING

**Keerthan Gowda HK
Amogha LA & Dhanush KR**

Abstract

Strong surgical wound care is crucial, and this cannot be understated. Surgical wounds that are not properly cared for might lead to serious consequences. It therefore rises. The need to expand a user-friendly self-care tool that may help both patients and medical professionals to guarantee the Nation is free of surgical wounds without the need of specialized medical equipment. A surgical wound assessment device for self-care is suggested on this publication. The suggested device is made to enable patients to take images of their own surgical wounds using a mobile device and then contribute these pictures for analysis. The suggested technique, which combines image-processing and gadget-learning algorithms, has four tiers. First, images are divided into super pixels, with each super pixel containing the pixels with a similar distribution of shades. Second, the region of skin associated to these super pixels that correlate to the pores and skin is identified. From this comes Super pixels. Based on the assertion of the textural difference between skin and wounds, surgical wounds may be removed from this area in around 1/3 of cases. In the end, the country and surgical wound symptoms and signs may be evaluated. Effects from full-scale experiments are run. More than 90% of the national evaluation findings are accurate using the suggested approach, and more than 91% of the symptom evaluation results agree with the actual study. Case studies are also provided to demonstrate the advantages and disadvantages of this equipment. These outcomes show how this gadget ought to function.

REAL TIME DRIVER DROWSINESS DETECTION

**Neha Singhal, Sinchana MN
Vijayalakshmi, Naveen Kumar DK
Balaji M & Chandan D**

Abstract

Due to the rise in accidents brought on by drowsy driving, real-time driver drowsiness detection is a crucial area of study. The goal of this study is to use computer vision and machine learning techniques to create an effective and efficient system for real-time driver drowsiness detection. To detect drowsiness, the proposed system uses a camera to capture the driver's face and analyze different facial features like eye closure duration, blink rate, and head movements. To increase the accuracy of drowsiness detection, the system also considers other elements like the time of day, driving habits, and road conditions. The study's findings demonstrate that the suggested system can accurately identify drowsy driving in real-time, which may help to prevent accidents.

VIRTUAL STYLING ROOM USING A LIVE VIDEO

**Nehal Singhal, Vijayalaxmi Joshi
S. Vishnu Sharma, Rohan. H
& Sanjai Kumar. R**

Abstract

A platform called Virtual Styling Room allows users or consumers to choose from a large selection of clothing designs before replicating those ensembles on virtual humans. This creates an entertaining, interactive, and very realistic virtual system. We have proposed a technique that facilitates the synchronisation of daily clothes in this study. The Virtual Styling Room with Live Video Feed project may change how someone shops for clothing and how they try on outfits, just like they would in a trial room. By utilising "Virtual Reality," customers may try on a variety of things without really wearing them, which shortens the shopping process. The quantity and style of clothing worn may differ depending on physical stature, gender, as well as social and geographic considerations. Real-time fittings for customers are possible, but they take too long when there aren't enough trial rooms. Our objective is to develop a virtual system that is dynamic, engaging, and astonishingly realistic and that enables users or clients to choose from a wide range of clothing designs before putting those outfits on virtual humans. We have proposed a technique that facilitates the synchronisation of daily clothes in this study. How a person shops for and attempts on clothes may change as a result of the virtual styling room initiative employing live video feed.

A SURVEY ON GRAPE FRUIT DISEASE DETECTION AND MONITORING SYSTEM

**M. Jeniga Gemsy Thepora, Muktha S
Mitali Sharma, Manoj Gowda Uk
& Mohammed Sayed S**

Abstract

Agro-based industry is an evergreen industry as there is a continual requirement for food and food products. Due to the increasing demand of agro-based industrial products it is necessary to grow crops effectively and efficiently to increase the overall yield. To achieve this goal, we have to monitor the crops during its growth and development period. Crop disease is one of the major concerns for farmers in agricultural sector. Hence effective methods for disease detection and prevention must be developed. Deep learning algorithms and image processing techniques are used for developing an accurate and cost-effective framework for early disease detection and monitoring of the crops.

SMART HEALTH MONITORING WITH IOT: AN AUTOMATED AND INTELLIGENT SYSTEM FOR HEALTH MANAGEMENT

**R Balakrishna, Meghana S
& Masood Manzoor Ahmed**

Abstract

This paper proposes a health monitoring system that utilizes IoT technology to collect and analyze patient data in hospitals. The system is equipped with a set of sensors, a Node MCU, and a camera that collect vital medical information such as heart rate, oxygen level, humidity and body temperature of the patient. In addition, the camera is used to obtain internal images of the patient post-surgery, which are transmitted to a medical server through the Internet and stored for regular monitoring by doctors. The proposed system is designed to provide real-time monitoring of patients and to alert medical professionals when sensor values indicate an abnormal health condition. In emergency situations, doctors can remotely monitor patients and provide instructions for medication through the IoT kit controlled by android app, which automatically dispenses the medicine through drips connected to the patient's body. By providing continuous monitoring and predictive alerts, the proposed health monitoring system aims to improve patient care and recovery while reducing the cost of medical treatment. The system's ability to obtain internal images of the patient post-surgery can help doctors to identify any complications and provide timely and effective treatment. Overall, this system has the potential to enhance the quality of medical care and improve patient outcomes.

SHOPPING TROLLEY WITH CONTROLLED MOVEMENT AND AUTOMATIC BILLING SYSTEM

**Anusha B Amargatti, Anusha V
Gaddapara Kokila & Keerthana HS**

Abstract

Shopping in large malls has become a common occurrence in major cities. On holidays and weekends, there is a tremendous crowd in the malls, and as a result, there is a long queue of people waiting to pay. An intelligent and secure trolley prototype for a retail store is now required in order to solve this issue. Hardware, software, and data transfer layers are this system's three primary components. A RFID reader, an ESP32 microcontroller, an OLED display, a buzzer, and an ultrasonic sonar are all included in the hardware system. As software, this project utilises embedded C and the Arduino IDE (Integrated development environment). The information from the microcontroller is kept on Google Fire Base. The trolley is controlled using a mobile app. To write and upload the programme, use the Arduino IDE, which is pre-made software . The programme was developed using embedded C. It took five processes to design and build the intelligent trolley system. The first phase is designing the system architecture, the second is creating the flowchart for the smart trolley, the third is creating the software system, the fourth is creating the database, and the fifth is testing the hardware and software system together. The created rfid-based smart shopping system improves business productivity and decreases consumer wait times at the billing counter.

DISTRACTION AND DROWSINESS DETECTION OF VEHICLE DRIVER USING OPEN CV

**Udhyami MB, Abrin Nisha J
Anusha SG & Yashas S M**

Abstract

Drivers are meant to concentrate on driving, but they pay more attention to their surroundings, and driving abilities and underestimate the impact of distraction activities on driving performance. In this paperwork, the driver's head posture is examined to know whether the driver is concentrating on his frontal view. This system works by analyzing the eye movement of the driver and alerting the driver by activating the buzzer when he/she is drowsy. The Convolutional neural network model is best suitable to detect driver distraction more reliably than the training model. The application was implemented using Open CV in a PC environment with a single camera view. In case, if the driver does not wake up the vehicle automatically slows down and moves toward its left, and stops.

SMART BANDAGE USING RFID TAG

**Kamal Raj T, Sanskar Drolia
Shibin C Reji, Shriti Arvind Singh
& Yashi Bilthariya**

Abstract

The population of several nations, including China and India, is ageing. The ageing population need domestic health care systems that can monitor seniors' health over time. In this research, a brand-new wearable platform called the smart-clothes platform is proposed for long-term health monitoring. Five different types of sensors for health monitoring are incorporated into smart clothes using newly developed electronic textiles. The platform has. Based on the smart-clothe, a platform for computing that uses an embedded gateway, a smartphone, and back-end cloud servers to gather and analyse long-term sensor data. A wide range of applications for health services based on cellphones and cloud services are made possible by the platform.

FAST AND LIGHTWEIGHT HUMAN POSE ESTIMATION

Hemavathi J, Nayana BC
Priyanka HK, Nagashree S
& Preeti B Shetty

Abstract

Although achieving significant improvement on pose estimation, the major drawback is that most top-performing methods tend to adopt complex architecture and spend large computational cost to achieve higher performance. Due to the edge device's limited resources, its top-performing methods are hard to maintain fast inference speed in practice. To address this issue, we proposed the fast and lightweight human pose estimation method to maintain high performance and bear the less computational cost. Especially, the proposed method consists of two parts, i.e., the fast and lightweight pose network (FLPN) for pose estimation and a novel lightweight bottleneck block for reducing computational cost, which can integrate the simple network and lightweight bottleneck into an efficient method for accurate pose estimation. In terms of lightweight bottleneck block, we introduce the structural similarity measurement (SSIM) to refine the appropriate ratio of intrinsic feature maps and reduce the model size. Furthermore, an attention mechanism is also adopted in our lightweight bottleneck block for modeling the contextual information. We demonstrate the performance of the proposed method with extensive experiments on the two standard benchmark datasets by comparing our method with state-of-the-art methods. On the COCO keypoint detection dataset, our proposed method attains a similar accuracy with these state-of-the-art methods, but the computational cost of these top-performing methods is more than 7 times that of ours.

UAV-FOR AMBULANCE ESCORT

**P Ebby Darney, Akshatha D
Nivedha D, Suvarna PU & Sree Hari K**

Abstract

According to the WHO, 1.35 million people die in traffic accidents each year. Technology is improving every year, which has made it possible to integrate artificial intelligence even into cars. Significant development has occurred in recent years in creating lane detection algorithms that can precisely identify and track lane markings in vast variety of driving situations, including low light and bad weather. The deployment of self-driving vehicles based on the ADAS technology has been carefully examined. The Autonomous Vehicles are another name for the Self-Driving Cars. This vehicle has the capacity to perceive its surroundings. The various components in the car will operate according to these processed sensed characteristics without the need for a human operator. An autonomous vehicle functions similarly to a regular vehicle but has no human driver. The software section that makes up autonomous vehicles is essential. Between Hardware Components and Applications, the Software Architecture serves as a link. Self-Driving Cars include two vital components. These automatic functions, which operate without human intervention, are Lane Detection and Traffic Signal Detection. In this paper, a machine learning algorithm is proposed. This algorithm is mostly used to create shape algorithms to assist in lane detection and traffic sign detection by detecting shapes and lane. Both of these applications were developed in Python utilizing the OpenCV2, NumPy libraries, and CNN algorithm for Edge detection. Overall, lane detection is an important technology for the creation of ADAS and self-driving applications. Ongoing research aims to increase the precision and robustness of these systems to guarantee their safety and dependability in actual driving situations.

LANE DETECTION AND SELF DRIVING APPLICATIONS FOR ADAS

**Megha L, Rohan R
PS Vijayarangan, Spoorthy KS
& Monika N**

Abstract

According to the WHO, 1.35 million people die in traffic accidents each year. Technology is improving every year, which has made it possible to integrate artificial intelligence even into cars. Significant development has occurred in recent years in creating lane detection algorithms that can precisely identify and track lane markings in a vast variety of driving situations, including low light and bad weather. The deployment of self-driving vehicles based on ADAS technology has been carefully examined. Autonomous Vehicles are another name for Self-Driving Cars. This vehicle has the capacity to perceive its surroundings. The various components in the car will operate according to these processed sensed characteristics without the need for a human operator. An autonomous vehicle functions similarly to a regular vehicle but has no human driver. The software section that makes up autonomous vehicles is essential. Between Hardware Components and Applications, the Software Architecture serves as a link. Self-Driving Cars include two vital components. These automatic functions, which operate without human intervention, are Lane Detection and Traffic Signal Detection. In this paper, a machine learning algorithm is proposed. This algorithm is mostly used to create shape algorithms to assist in lane detection and traffic sign detection by detecting shapes and lanes. Both of these applications were developed in Python utilizing the OpenCV2, NumPy libraries, and CNN algorithm for Edge detection. Overall, lane detection is an important technology for the creation of ADAS and self-driving applications. Ongoing research aims to increase the precision and robustness of these systems to guarantee their safety and dependability in actual driving situations.

IOT IN INDIAN AGRICULTURE USING WIRELESS SENSORS AND NETWORK

**D Kirubha, Deekshitha UM
Gunasree NA , Harshetha Murthy
& Harshitha V**

Abstract

Recently, farmers have shown a lot of interest in smart agriculture approaches. One of the main employment in India and a substantial contributor to the GDP of the nation is the agriculture sector. By enabling farmers to more effectively monitor and manage their crops and fields, the use of Internet of Things (IOT) technology in Indian agriculture has the potential to completely transform the sector. The installation of wireless sensors and network infrastructure that enable real-time data collecting and analysis will help achieve this. We go over the advantages of IOT technology for farmers, including higher agricultural yields, less resource use, and better decision-making skills. This includes effective resource management practises like reducing the amount of water needed for irrigation and the usage of harmful pesticides. Overall, the adoption of IOT in Indian agriculture has the potential to significantly raise farmers' profitability, sustainability, and productivity.

ENVIRONMENTAL MONITORING USING WIRELESS DEVELOPMENT MODULE WITH LORA WAN

**Usha S, Bhoomika GK
Chandana R & Bharathi R**

Abstract

This paper proposed the prototypes of a Long Range (LoRa) WAN network for environmental monitoring a air quality sensor, soil moisture sensor, a temperature and humidity sensor, a raindrops sensor, and a LDR sensor. The different levels of soil depth with respect to the ground surface. As compare to Wi-Fi module, mobile communication, Bluetooth another wireless technique a HeltecLoRa esp32 sx1276 acts as a LoRa wireless communication module for long-range environment data transfer. The proposed network that operating with two wireless communication frequency bands, 925.2MHz for node-to-gateway communication and 2.4GHz (WLAN) for gateway-to-cloud communication. Furthermore, the proposed network with three wireless sensor nodes and a single LoRa gateway was experimental. As a results, the sensor node able to environmental sensing and transfer data to the gateway. The environmental data of soil moisture under the ground surface 20cm, 40cm, and 60 cm more than 90% accuracy compared to the standard instrument. Additionally, the LoRa transceiver range is approximately 600 meters (Non-line-of-sight: NLOS) and the LoRa gateway automatically transmits environmental data to the cloud storage every 15 seconds.

SMART HOME AUTOMATION, SECURITY& ENERGY OPTIMIZATION

**Jesica GV, Chaithanya M
& Lavanya N Murthy**

Abstract

For almost 10 years, the home automation industry has attracted some academics' interest. Any automated system's main selling point is its reduction of manual labor, effort, time, and mistakes brought on by human error. Smartphones have become a must for every individual which results in the advancement of contemporary technology. There is an urgent need to save energy in every aspect due to the rise in population and energy usage. The main causes of energy loss is the inert to access and manage applications in remote areas. This article provides a review for these systems.

DEVELOPMENT AND ANALYSIS OF POTHOLE DETECTION AND ALERT BASED ON NODE MCU

**Harshitha Jayasree R, HemavathiJ
Ganavi CV & Hemanth R**

Abstract

The system is implemented using an ultrasonic sensor to detect the presence of a pothole and uses Node MCU for data transfer to send the information of the potholes detected. When a pothole is detected, the GPS module captures the potholes' location, and the Global System for Mobile communication (GSM) module sends a message to the user's phone, alerting them about the pothole's presence and providing the location information. This information can help road users to avoid the pothole and decreases the risk of accidents. This system is an innovative solution to the problem of potholes on roads. By alerting road users about the presence of potholes, the system helps to improve safety of roads, decreases accident rate, and save lives. The system is also cost-effective and can be easily implemented on existing roads without any significant modifications.

CNN BRAIN TUMOUR SEGMENTATION AND IMAGE PROCESSING

**Kamal Raj T, Shireesha YA
Sindhu Shree V, Sushmitha M
& Varshitha H**

Abstract

Brain tumor detection is one of the hardest tasks in medical image processing. Because brain tumors can have a widerange of shapes and textures, the images are very diverse, which makes the detection task difficult.A brain tumor's diverse cell types can reveal information regarding the tumor's nature, severity, and rarity.Tumors can originate in a variety of locations, and the tumor's location can provide clues about the types of cells thatgave rise to it, aiding in further identification. The difficulties that practically all digital photographs have, such asillumination issues, can make the process of detecting brain tumors more difficult. It is possible for tumor and nontumorpictures to have overlapping image intensities, making it

A BLOCKCHAIN-BASED DECENTRALISED FRAME FOR UNBIASED DATA PROCESSING

**Manasa GV Kumar, Aakashadhithya K
Aditya Kumar, Akshay GS & Harshitha D**

Abstract

A brand-new decentralized computing frame that utilizes blockchain innovations to satisfy various computing requirements. In order to alleviate some of the prevailing issues with centralized data processing, such as data abuse and sequestration violations, and ameliorate data protection and security for individuals. The proposed result adopts decentralized agreement algorithms to ensure transparency and fairness in data processing. In our framework, tasks require different amounts of resources, and workers have different processing capacities. Workers initially obtain task information from the blockchain, do tasks locally and then compete for a scheduler based on instructions that are used for data processing through proof of beneficial work consensus. The scheduler communicates task data into the blockchain network. The fundamental aspect of our decentralised frame is that workers choose their jobs rather than passively obtaining them as in a centralised system.

TRUST BUT VERIFY AFRAMEWORK FOR THE TRUSTWORTHINESS OF DISTRIBUTED SYSYTEM

**Kirubha D, Neha R Sindhe
Pooja S & Manisha KM**

Abstract

Security and privacy concerns in computer systems have grown in importance with the ubiquity of connected devices. Additionally, cloud computing boosts such distress as private data is stored and processed in multitenant infrastructure providers. In recent years, trusted execution environments have caught the attention of scientific and industry communities as they became largely available in distributed systems. Developers have the luxury of creating heterogeneous systems that meet demands specific to the data thanks to the diversity of data management systems.

FACE RECOGNITION FOR ATTENDANCE MANAGEMENT

**T. Auntin Jose, Kruthika S Murthy
& Sumanth V**

Abstract

The suggested attendance management takes footage from a webcam, detects faces, and compares them to a database of recognized faces using the OpenCV and face_recognition libraries. Arrays are used to store the names and known faces. The script examines the video feed and uses the face encodings of the known faces to compare each identified face to the known faces. If a match is discovered, the student's name and a message confirming their attendance are shown on the screen. A CSV file with the current date as the filename is also created by the script to store the attendance information. The 'q' key can be used to halt the attendance system. It can be applied to offices, institutions, and schools to speed up and save time on the attendance process.

OBJECT DETECTION & SEGREGATION USING R-CNN

**Kirubha D, Liyakat Ali
MD. Saif, Prem Kumar J
& Kush Upadhyay**

Abstract

The Computer vision field of computer science recognizes the images and scenes from the images, video or live feed. Computer Vision has a number of solutions which include recognizing objects and images, generating images, resoluting images and more. The computer vision is widely used for recognizing faces, vehicles, human detection, mapping of networks, security of systems, and driverless vehicle systems, etc. It can also be used for the detection of other sensible objects like different kinds of fruits, buttons, coins, etc. This system uses the correct object recognition algorithms like RCNN, FastRCNN, FasterRCNN, Mobilnet and other fast and correct methods like SSD. By implementing the Machine Learning and Deep Learning frameworks like TensorFlow, OpenCV etc., every single object can be recognized in the image with a highlighted box around it and each recognized object is assigned a label to it.

DRIVER BEHAVIOR-BASED VEHICLE ACTIVATION SYSTEM WITH DROWSINESS DETECTION

**Selvi M, Mohammed Zubair, Nagaprasad KR
Rahul Rai K J & Rakesh PM**

Abstract

Our project aims to develop a cutting-edge system that can identify and alert the driver's drowsy or sleepy state while driving. To identify patterns in driver behavior and drowsiness, the suggested method employs computer vision and machine learning algorithms. The framework uses a Raspberry Pi microcontroller unit for equipment execution. The system's three main modules are as follows architecture: data acquisition, recognizing facial landmarks, identifying drowsiness, and activating the vehicle. 68 facial landmarks from the driver's face were extracted by the facial landmark detection module using the OpenCV and dlib libraries. The drowsiness detection system makes use of a machine learning algorithm module to classify the driver's state as either active, drowsy, or sleepy based on eye aspect proportion (EAR). The system utilises the Raspberry Pi platform, a camera module, as well as other necessary hardware elements. Modules for obstacle and lane detection, along with facial landmark classification, are comprised of the software implementation. Real-world data was used to evaluate the system's effectiveness, and the results showed that it was able to accurately detect driver drowsiness and prevent accidents. The vehicle's acceleration and braking mechanisms are controlled by the vehicle activation module through H-bridge circuitry. The feasibility analysis of the proposed system suggests that it is a low-cost option that can be easily integrated into automobiles. The framework's practical and non-useful prerequisites have been plainly characterized to guarantee its proficient activity and dependability. To make the system more effective, easier to use, the steps for assembling the hardware and installing the software have been improved. In conclusion, the proposed system offers an effective method for avoiding collisions brought on by impaired driving. The system's ability to accurately detect drowsiness is demonstrated by the project's outcomes. Obstacle detection and lane detection are two potential future additions that could increase driver safety.

5G ANTENNA DESIGN FOR WLAN APPLICATION

**Shashi Ranjan, Chiranjeevi CM
Siddalingappa Goudabiradar & Shubha GN**

Abstract

The most popular wireless distribution protocol for local area network communication is WLAN. This article covers a ground plane-equipped, high-gain, single-band microstrip antenna that is printed on FR-4 substrate and measures 29.2 x 29.2 x 1.6mm³. The proposed patch antenna design has a return loss of -39.008dB and covers the 2.4GHz frequency range. The simulation was carried out using ADS 2014. Additionally, the antenna's design is intended to provide high performance and a fantastic option for WLAN applications.

DETECTING ACCURACY OF FALSEHOOD USING MACHINE LEARNING ALGORITHMS

**Ravikumar KP, Aditya Sah
Nishant Madhukar & Anuradha Kumari Chinmaya G**

Abstract

In recent years, due to the booming development of online social networks, fake news for various commercial and political purposes has been appearing in large numbers and widespread in the online world. With deceptive words, online social network users can get infected by these online fake news easily, which has brought about tremendous effects on the offline society already. An important goal in improving the trustworthiness of information in online social networks is to identify the fake news timely. This paper aims at investigating the principles, methodologies and algorithms for detecting fake news articles, creators and subjects from online social networks and evaluating the corresponding performance. This project addresses the challenges introduced by the unknown characteristics of fake news and diverse connections among news articles, creators and subjects. This project introduces a novel automatic fake news credibility inference model, namely FAKE DETECTOR. This project reviews various fake news detection methods involving feature extraction methods like Count vectorizer, TF-IDF Vectorizer, Word Embedding and also different classification algorithms like SVM, Logistic Regression and Gradient Boosting, Random Forest, Decision Trees, KNN and XG-Boost.

WIRELESS ECG MONITORING

**Uma D,
Basavaraj V & Lavanya S**

Abstract

Electrocardiogram (ECG) measure the electrical activity of heart and helps to diagnose various abnormalities governing cardiac activity of the heart. Continuous monitoring of Electrocardiogram (ECG) can help to analyze, classify various cardio vascular diseases and prevent CVD's to great extent. A wearable ECG monitoring device made by using IoT devices can reduce the complexity of device. IoT devices such as micro controller, AD8232 Sensor is used for precise and easy application and Bluetooth devices to send the data wirelessly to other devices. A 6 lead belt system developed by considering the Einthoven triangle is employed to improve the accuracy of signals and to improve the comfort of the patient. In order to eliminate the use of AC power supply which limits the wireless objective of the project, a 3.7v rechargeable DC batteries are used to power the circuit. These batteries can provide a backup of minimum 6 hours depending on the use and can be recharged using USB charging system within 8 hours. The belt developed is made elastic so that it can be used by people with different size and age as well. After receiving the signal, the system uses an adaptive noise filtering algorithm to remove artifacts. The ECG sensors collect the potential from the leads non-gel electrodes which are sent wirelessly using Bluetooth HC-05 module. A software called Real term ECG is employed to filter and store the signals. From this software we can develop the result of 6 lead ECG which can be stored in defined cloud platform or SD card storage. The stored data can be compared with the reference data and check the accuracy of the output in excel sheet itself. This prototype is a small size, less expensive wearable system to detect and display Electrocardiogram (ECG).

AN IOT BASED NASOGASTRIC FEED MONITORING OF PRETERM LBW NEONATES

**P Bhuvaneshwari, Indushree KP
& Vaishnavi B**

Abstract

In the modernization of the healthcare sector the mortality outlay of the preterm neonates have been guarded. The feeding of low birth weight (LBW) neonates is important in order to improve their survival and subsequent growth and development. This project discusses about the development of a monitoring system for nasogastric tube feeding of preterm neonates that eliminates the feeding difficulties in the infant. While in this approach the low birth weight neonates feeding can be done using gastrointestinal tube feeding through which the medication and nutrition will reach the infant digestive tract. In the software requirements, embedded C language is used and the monitored data is being displayed on the LCD that helps to know the flow rate of medication which is so important during the neonate feeding. So finally, this system has designed for a real time monitoring system with nasogastric feeding for the LBW neonates.

NON-INVASIVE NIR BLOOD GLUCOSE SENSOR

**Celina Sylvitte, Sibyala Kaveri, Tejaswini C,
Yashaswini V & Vanishree Prasad S**

Abstract

Diabetes is a metabolic pathological condition of concern, which affects vital organs of body if not diagnosed and treated on time. Commonly used glucose measurement methods are invasive which generally involves finger puncturing. These methods are painful and frequent pricking cause calluses on the skin and have risk of spreading infectious diseases. Therefore there is need to develop a non-invasive monitoring system which can measure blood glucose continuously without much problem. The present work is focused on development of non-invasive blood glucose measurement sensor system using Near-infrared (NIR) technique. Near-infrared (NIR) is sent through the fingertip, before and after occluding the blood flow. By analyzing the variation in received signal intensity obtained after reflection in both the cases, glucose present in blood can be predicted.

ENHANCED LEAST SIGNIFICANT BIT REPLACEMENT ALGORITHM IN SPATIAL DOMAIN OF STEGANOGRAPHY

**S Usha, Sriraksha, Avinaasi LJ
Chaitanya SM, Arshiya Nazneen
& Farheen Taj**

Abstract

The LSB (Least Significant Bit) algorithm is one of the most commonly used techniques in steganography for embedding secret data into digital images. However, it has some limitations, such as the low capacity of embedding secret data, poor robustness against attacks, and visible distortion in the stegoimage. To overcome these limitations, an Enhanced LSB Replacement Algorithm in the Spatial Domain of Steganography has been proposed. The proposed algorithm uses a hybrid approach, which combines the advantages of the LSB algorithm with some additional techniques to enhance the embedding capacity, improve the robustness, and reduce the visual distortion. The proposed algorithm first divides the cover image into non-overlapping blocks and then applies a secret key to generate a random sequence of pixels in each block. The secret data is then embedded into the LSBs of the selected pixels, which makes it more difficult for an attacker to detect the embedded data. Moreover, the algorithm uses a dynamic threshold to decide the number of LSBs to be replaced, which reduces the visual distortion and improves the robustness against attacks.

FORECASTING OF SEISMIC TREMORS USING MACHINE LEARNING TECHNIQUES

**T Auntin Jose, Tejas V, Varsha P
Vasantha DV & Vijeth S Gowda**

Abstract

An earthquake is a type of natural disaster that is well-known for the devastation it causes to both naturally existing and artificial structures, including buildings, and residential areas, to name a few. Seismometers, which pick up vibrations caused by seismic waves moving through the earth's crust, are used to measure earthquakes. The damage caused by an earthquake is categorized in this work into damage ratings, which have values ranging from one to five. The damage grade of a certain structure, which is also known as Unique Identification String, is predicted using a previously gathered data set and a number of criteria. An analysis of current machine learning classifier techniques is being used to make the forecast of earthquake. In order to predict earthquakes, machine learning methods like KNN, Random Forest Classifier, and Logistic Regression are used. The best algorithm will be taken into consideration after reviewing all of the aforementioned previously employed algorithms. The approach employed to anticipate the property will be examined, and data analysis will disclose information that could help to mitigate the effects of future earthquakes.

STOCK PRICE PREDICTION USING STATE-OF-THE-ART MACHINE LEARNING ALGORITHMS

**Sunil A, Yashwanth M, Karthik T
Karthik E & Jahnavi HP**

Abstract

Stock market forecasting and machine learning are two strategies that have recently gained popularity. The goal of this research is to forecast stock prices and market movements using machine learning algorithms. To forecast future market values, this model takes into account a variety of factors such as financial statistics, historical trends, market mood, and news. To provide information on patterns and trends, the system will employ data visualization techniques. By precisely anticipating stock values, the software will also assist traders and investors in making educated judgements. The proposed approach will produce strong results for analyzing product prices and models, making it an excellent tool for investors and traders looking to make informed investment decisions.

ARTIFICIAL / SYNTHETIC HUMAN FACE GENERATOR USING GENERATIVE ADVERSARIAL NETWORK (GAN)

**M. Jeniga Gemsy Thepora, M. SaqibShah
Abhishek Pandey & Gaurav Kumar Bhatt**

Abstract

Noise, Structure, and Elements to produce high-quality pictures, vector transport must be properly represented in graphics algorithms. Although currently available algorithms are extremely effective at this, creating and formatting virtual environments is expensive and time-consuming. As a result, there is an opportunity to automate this tedious procedure by using recent improvements in computer vision. Recent advances in complex generative models, notably GANs, have inspired a significant deal of interest in the field of computer vision for creating realistic images. Backpropagation is coupled with the assistance of an adversarial method that consists of two networks, The generating system allowed G, while the discriminator allowed D, with G creating erroneous images and D categorizing them into genuine or phony image categories. Backpropagation is combined with an adversarial approach that makes use of two networks, Generator G and the discriminator D, where Generator G generates fictitious pictures and Discriminator D assesses whether they are real or false. As the training goes on, G develops the capacity to create images that are plausible to deceive D. [1]. In this study, a model capable of producing high-quality photographs of human faces at scale was trained using the Deep Convolutional Generative Adversarial Networks (DCGAN), a kind of convolutional architecture based on GAN. The DCGAN model was trained using the Celebrity Faces Attributes Dataset. The Architectural analogies Index (SSIM), which analyses both structural and spatial coherence between two pictures, was used to objectively evaluate the trained DCGAN model. According to the data acquired, the image quality is equivalent to the top-tier photographs in the Celeb dataset.

AN EFFICIENT PROGRAMME FOR A STUDENT ATTENDANCE TRACKING SYSTEM WITH A GEOGRAPHIC FOCUS

**Manasa GV Kumar, Srivalli N
Simple KS, Yashvanth PS & Udaya S**

Abstract

A software solution created to make tracking student attendance easier is called An efficient programme for a student attendance tracking system with a geographic focus. The tool tracks students' locations in real-time using location-based technology, doing away with the necessity for manual attendance taking. Students can quickly check-in to their classes using this software on their mobile devices, which have GPS capabilities. Their presence is automatically tracked by the programme, which also sends the information to a central database that teachers and administrators may see immediately. Overall, the Location-based Student Attendance System Mobile Application is a dependable and effective method for taking attendance that streamlines the procedure and saves time and money for schools. This application is a must-have for any school wanting to update their attendance tracking system due to its user-friendly interface and robust capabilities.

MALWARE DETECTION AND PROVIDE REMEDIES USING COUNTERMEASURE SELECTION

**Selvi M, Keerthana R
& Madhushalini M**

Abstract

These days, cloud computing is used by both suppliers and users in the majority of businesses, including the public sector. Cloud computing has, however, become a target for hackers and criminals who want to take advantage of its weaknesses as a result of its increasing popularity. The Distributed Denial-of-Service (DDoS) assault is one such attack that can be carried out by compromising virtual computers within the cloud system. This comprises a number of procedures, including vulnerability scanning and compromising weak virtual computers to produce zombies that are subsequently utilized to launch DDoS attacks. It might be difficult to identify these attacks within the cloud system, especially in Infrastructure-as-a-Service (IaaS) clouds. We offer NICE, a multi-phase distributed mechanism that uses analytical models and customizable virtual network-based countermeasures to identify vulnerabilities, assess threats, and choose the best countermeasures, to address this problem. Through system and safety evaluations, our suggested solution has proven to be effective and efficient in preventing the cloud's vulnerable machine virtualization from being compromised.

AN EFFICIENT VIRTUAL DRESSING ROOM OF AUGMENTATION REALITY

**Adarsh Murthy TM, Shashidhar V
Ajay MS & Goutham M**

Abstract

Technology is gradually transforming the way we shop for garments in today's society. With the advent of e-commerce and online shopping, Companies are exploring novel approaches to enhance the customer purchasing journey. Virtual dressing rooms, which provide customers with an immersive and entertaining method to try on clothes and accessories without having to physically change into multiple ensembles, are one possible answer. The aim of my project thesis was to develop a functional virtual dressing room utilizing augmented reality technologies. Customers can use the virtual dressing room to visualize how various garments might look on them in a virtual environment. This technology has the potential to transform the way we shop for clothes by making it more engaging, fascinating, and efficient. The thesis will include a detailed account of the virtual dressing room's design and development process, including system technical details, software and hardware used, and challenges encountered during the development process. Furthermore, the thesis will evaluate the virtual dressing room's usability and user experience, as well as its potential impact on the fashion industry. Furthermore, the thesis will investigate both theoretical and practical issues.

EYERIS :AN AID FOR BLIND ASSISTANCE

**Kamal Raj. T, I AmaliAkshaya KV
Himasai Kiran N & Mohammed ReehanAlam**

Abstract

There is little aid for blind assistance, Therefore, it is necessary to put into action a tool that helps them with their daily tasks. There are existing systems and software that provide visual assistance for reading and accessing a few devices, but these systems lack when the disabled person wants to do some basic tasks like identifying the surroundings in front of them such as a person or object. Therefore, very few mechanisms are invented that aid communication between the blind person and the deaf-dumb person. This project is designed to aid and help a blind person or partially impaired eyesight. This system is developed to aid blind persons without a guardian needed. The software and hardware are designed in a way that helps to detect objects, people, and gestures in vision and recognize them. This is a method that implements object detection and person recognition. For communication between deaf-dumb and blind people, we use Sign language which is detected and recognized, and the same is notified to the user. The object or sign is transmitted to a blind person in the form of audio. The idea is to make blind people's lives independent and affordable by offering them affordable solutions.

AUTH PRIVACY CHAIN: A BLOCKCHAIN BASED ACCESS CONTROL FRAMEWORK WITH PRIVACY PROTECTION IN CLOUD

**M. Supraja, Adithya J, Akhila K
BagalkotShrusti & Ganesh KC**

Abstract

Cloud computing is a computing model that supports sharing and ubiquitous on-demand access, enabling new data processing and services for many industries while also drastically lowering user computing and storage costs and enhancing usability. Cloud security has grown in importance as a result of the cloud computing industry's expansion and intensification. For protecting sensitive data stored in the cloud by businesses and individuals, access control is one of the essential security technologies. Since the cloud uses a centralised access control mechanism, sensitive data stored there is vulnerable to manipulation or leakage by hackers or internal cloud managers. To solve this problem, we offer AuthPrivacyChain, a blockchain-based access control framework with privacy protection. First, we use the blockchain node's account address as the identity.

SMART STREET LIGHT USING WIRELESS DEVELOPMENT MODULE WITH LORA WAN

**S Usha, Bindushree BM
H Swetha Deshmukh, Geethashree R
& Darshan V**

Abstract

Systems for intelligent street lighting are a part of smart cities.. In addition to providing lights, they also make real-time monitoring, energy management, and other intelligent applications possible. In this situation, LoRa (Long Range) technology offers a practical and affordable approach to connect and control a numerous street lights. Weoffer an abstract of a LoRa chip based smart street lighting system. A LoRa gateway has various LoRa nodes connected to street lights, and a central control unit make up the system. The LoRa nodes use sensors to track environmental variables including traffic, ambient light, and other environmental factors. This information is gathered by the LoRa gateway and transmitted to the central control unit for the processing to establish the ideal timing and lighting settings for each street light. Additionally, the system permit for remote control and observation of specific street lights, allowing for quick troubleshooting and resolution of problems. Applying LoRa technology for smart street light has a various benefits, including improved energy efficiency, reduced maintenance costs, and increased protection.

AIR POLLUTION PREDICTION USING MACHINE LEARNING

**Balakrishna C, Nandishk
Pruthvi Raj B V, Prajwal R & P Sri Hari**

Abstract

Industrial pollution is one of the most important problems we face today. Long-term air pollution exposure causes serious health problems, including respiratory and lung disorders. Currently, industrial pollution monitoring and control laws are not stringent enough. The working dataset includes air parameters in terms of both ambient air and stack emission. Various Machine Learning (ML) algorithms were applied to this data to predict the emission rate, and a comparative analysis was performed. Each of these algorithms was written in Python, and the mean square error of each was calculated to ensure accuracy. Among all classifiers, the Random Forest model had the lowest error. The forecast may include pollutant concentrations or an index of air quality.

CROSS AGE IDENTITY VALIDATION ANALYSIS USING FACE VERIFICATION

**T Auntin Jose, Kumar C, Lakithkumar GK
Madankumar DN & Manoj SJ**

Abstract

Due to the numerous application areas, including user authentication, targeted advertisements, video surveillance, and human-robot interaction, face recognition research has grown. Applications that combine the cutting-edge fields to determine age and gender as technology advances. In today's world, age plays a big role in whether you get a health checkup and interview. Numerous organizations in the public, private, and advertising sectors use age information perpetrators, employees who are qualified for the position, and potential customers for product 5 promotion. However, determining a person's age is difficult, and there are limitations from determining the correct age from the collection of images. A crucial task is locating the appropriate dataset for training the model. The real time data is huge, requiring a lot of computation and time to prepare the model. After incorporating machine learning techniques, the task has been challenging, but accuracy has significantly improved. By mapping the face in accordance with the age that is found, age estimation in applications like biometric evaluation, virtual makeup, and virtual try-on applications for jewelry and eyewear. Focal point kart is such an application that gives the take a stab at choice for their clients. Face recognition and face tracking are both subfields of age estimation, both of which have the potential to predict an individual's health. This mechanism is used by numerous health care applications to monitor people's daily activities and keep track of their health. This face detection method is used to identify service drivers and jaywalkers in China. We employ a significant variety of machine learning algorithms to predict age and gender. One of the most common methods for determining an individual's age and gender is the CNN (convolution neural network). OpenCV and CNN will be used in this implementation to predict a person's age and gender.

SUPERVISED RELATIONAL EXTRACTION

**Kamal Raj T, Anusha J, AdarshKumar
Prathiksha V & Srigowri N**

Abstract

Each and every day there will be new challenges in the biomedical area, some may be new viruses and diseases, and it is time consuming process for researchers to discover a solution. The basic step is look through paper that has been written already about the specific issue. The researchers' main objective is to establish a connection between a genes and a diseases, and the earlier step of extracting information is time-consuming and difficult since researchers must read through all the relevant studies. Relation extraction utilizing deep learning and machine learning is the one of the accurate way for completing assignment. In a paragraph of text, the connection between the entities is intended to be extracted using documentlevel relation extraction. We propose an Artificial Neural Network (ANN) technique using type information to address this issue by masking each mention of the entities with unique tokens. The model may precisely retrieve every mention and entity type by employing this entity mask approach. Our Word2Vec model, which is based on ANN, enables us to analyse the text just once, but enter data from all of our research articles into a computer model, creating links between things. We run the proposed model using Google Colab's.

DEEP NEURAL NETWORK MODEL FOR AUTOMATIC DISEASE DETECTION IN CITRUS FRUITS AND LEAVES

**Manasa GV Kumar, Sahana BM
Sahanashree, Vaidehi A & Yogitha**

Abstract

Illnesses of the citrus fruit are the main reason for drastic decreases in citrus fruit supply. It is essential to have an automated approach to identifying citrus plant diseases. Because a variety of artificial intelligence issues, and deep learning approaches have lately demonstrated promising solutions, we chose to use them to address the problem of identifying citrus fruit and leaf diseases. This study uses an integrated technique to provide a convolutional neural network (CNN) model. The proposed CNN model intends to differentiate between fruit and leaf types with healthy citrus diseases including black spot, canker, scab, greening, and Melanose, and those that do not. The suggested CNN model incorporates complementary discriminative properties by integrating various layers. The CNN model performed well on the Citrus and PlantVillage datasets.

NEURAL NETWORK BASED BRAIN HEMMORHAGE DETECTION USING CT SCAN

**Sunil A , Abhishekk, Pragathik
Devaraja & Parameshwari M**

Abstract

Brain hemorrhage, which can result in catastrophic damage or death, is the eruption of the brain's arteries as a result of excessive blood pressure or excessive blood coagulation. It is a medical emergency where a doctor also needs years of training to quickly identify the site of internal bleeding before beginning therapy. Convolutional Neural Network (CNN), is deep learning model that is suggested in this study for the categorization of brain hemorrhages. To increase the deep learning models' accuracy and processing speed, brain CT scan pictures are employed as the dataset.

SIGN LANGUAGE RECOGNITION USING NEURAL NETWORKS

**Raj Kumar, Mohan N
Rakshith Kumar D, Rohith S & Prajwal M**

Abstract

In current society, there is a lack of communication with the deaf. The origin of Sign Language (SL) helped to break down this barrier. Sign language uses visually transmitted sign patterns to communicate meaning to non-sign language users. The use of sign language is beneficial for those with autism spectrum disorder (ASD). Normal people are unable to interpret the signs used by the deaf since they are not familiar with their meaning. This system's aim is to find a solution to this issue. This device makes use of camera to record different hand motions. The image is then processed using a variety of techniques. In this study, an enhanced convolutional neural network (CNN) called MobileNetV2 has been used to design the SLR. The primary step is pre-processing the image. Then, an edge detection algorithm is used to determine the edges. The text is displayed once the sign is identified by a templatematching algorithm. Since the output is text, it is simple to determine what a particular sign means. Once logged into the system, users can choose to use the sign language translation and recognition features, capture images using OpenCV, and then process them using the trained CNN neural network. Additionally, it makes it easier to interact with the deaf. OpenCV-Python is used in the system's implementation. Keywords: - Sign Language Recognition, American Sign Language, Deep Learning, CNN

HUMAN FACIAL ACTIVITY RECOGNITION

R. Rajkumar, Hrithik K.A, K. Shivukumar
Keerthan. R & KesariNandan KS

Abstract

In various real-life scenarios, human detection and activity recognition (HDAR) in videos is crucial. This study focuses on detecting humans in aerial video sequences captured by a moving camera mounted on an aerial platform, which encounters dynamic events such as changing altitudes, illumination shifts, camera jitter, and variations in viewpoints, object sizes, and colors. The UCF-ARG aerial dataset, unlike conventional datasets with frames taken by a static ground camera featuring medium or large human regions, presents a greater challenge due to the significant distances between humans and the camera in the frames. Human detection methods described in existing literature often experience performance degradation when video frames are affected by noise, blur, illumination changes, and similar factors. To overcome these limitations, the object detection techniques used in this research were trained on the COCO dataset and assessed on the publicly accessible UCF-ARG dataset. The detectors were compared based on detection accuracy, and five human actions (digging, waving, throwing, walking, and running). Experimental results revealed that EfficientDetD7 outperformed other detectors with an average accuracy of 92.9% in detecting all activities and various conditions, including blurring, Gaussian noise addition, lightening, and darkening. Furthermore, deep pretrained convolutional neural networks (CNNs) like ResNet and EfficientNet were employed to extract valuable features from the detected and cropped human patches. Long ShortTerm Memory (LSTM) utilized the extracted spatial features to account for temporal relations between features for human activity recognition (HAR). Experimental findings showed that the EfficientNetB7-LSTM surpassed existing HAR methods in terms of average accuracy (80%) and average F1 score (80%). The result is a robust HAR system that combines EfficientDetD7, EfficientNetB7, and LSTM for human detection and activity categorization.

CROP PREDICTION AND YIELD BASED ON ENVIRONMENTAL FACTORS

**S Vijayanand, Samyuktha R
Sneha NV & Vishwas K**

Abstract

This Project is an attempt to minimize the losses occurs in Agriculture field due to Climate and Environmental changes which leads to inappropriate selection of crop to grow on land. Machine Learning (ML) is a significant methodology for accomplishing the reasonable and compelling answers for this disadvantage. In India farmers still follow the traditional technology which they adopted from their ancestors. But the problem is that in the earliest time climate was compatible with the predicted weather everything happened on time. But now most of the things have been changed due to global warming and many other factors. The leading annoyance with agribusiness in India is the shortage of rainfall in seasonal periods. Humidity is also required for production, though it has been unreasonable, it also transforms as a weakness. Accurateness of harvest price forecasting strategies plays an important function in encouraging market characteristics such as direction and collection. Harvest Yield Prediction technique includes foreseeing yield of the harvest from reachable historical and possible data like climate parameter, soil parameter and yield prediction. Machine learning algorithms are applied and we get best predicted results through a web application. This Project is an attempt of predicting the outcome of harvest supported the current data by using of RFA Random Forest Algorithm and Back Propagation. The expectation can make the farmer to foresee the yield of harvest before developing onto the agribusiness zone.

Keyword: - Agriculture, crop recommendation, yield prediction, integrating feature.

FOREST FIRE AND WILD ANIMALS DETECTION WITH TREE CUTTING

**Balakrishnan C, Devika, Nikitha GJ
Prathibha & Sapthami**

Abstract

A novel approach for forest fire detection using image processing technique is proposed. A rule-based color model for fire pixel classification is used. The proposed algorithm uses RGB and YCbCr color space. The advantage of using YCbCr color space is that it can separate the luminance from the chrominance more effectively than RGB color space. The performance of the proposed algorithm is tested on two sets of images, one of which contains fire; the other contains fire-like regions. Standard methods are used for calculating the performance of the algorithm. The proposed method has both higher detection rate and lower false alarm rate. Since, the algorithm is cheap in computation it can be used for real time forest fire detection. Checking of wild animal in their common environment is crucial. This proposed work develops an algorithm to detect the animals in wild life. Since there are many different animals manually identifying them can be a difficult task. This algorithm classifies animals based on their images so we can monitor them more efficiently. Animal detection and classification can help to prevent animal-vehicle accidents, trace animals and prevent theft. This can be achieved by applying effective deep learning algorithms. Deforestation is cutting trees of forests on a huge scale, often resulting in loss of habitat of millions of wild animals. About 30% of earth's land is still covered with forests but due to deforestation we are losing them at the rate of about half the size of England per year. In forests, tree cutting activities are illegal but due to shortage of manpower and other resources, governments are not very successful in curbing this menace. Keyword: - Forest fire and wild animal detection with tree cutting, Internet of things (IOT), Raspberry pi B+ and Convolutional Neural Networks.

HOUSE PRICE PREDICTION USING AIML WEB BASED

S. Usha, Syed Mansoor
Zahid Hussain Lone & Afroz Alam

Abstract

One of the basic requirements of human society is a place to live. Houses are considered to be pleasant and quiet environments where people feel at home. People must therefore select a decent house model in order to live a pleasant and happy life. This article focuses on utilising machine learning algorithms to reliably estimate home prices. People can choose the right home for their needs using this concept. People will primarily consider the neighbourhood, house type, cost, location, and a few other amenities. To determine the necessary house for habitation. Since most people are very concerned with staying within their budgets when buying a home, it is crucial that the prediction of home prices be accurate. Additionally, it aids people in selecting homes based on. House prices have a big impact on the economy, and customers and real estate agents are quite concerned about the price ranges. Every year, housing prices rise, which ultimately highlights the necessity for a method or plan that could forecast house prices. Physical conditions, locations, bedrooms, and other elements might affect a home's price. Historically, forecasts have been based on these variables. However, these prediction techniques need the right expertise and knowledge in this field. A substantial source of cutting-edge opportunities for housing analysis, prediction, and visualisation is machine learning approaches. A middle-class family cannot support his family while paying for rent, food, water, and power. The cost of apartments in the city is rising, and estimating the final price of a home is extremely risky. As we can see, when a customer wants to buy a property in the city, he looks at three things: location, area, and the resources that are accessible in the community. Our research paper will assist clients in understanding the true cost of a home as well as builders in determining the selling price that will best meet client requirements.

TRACKING AND MONITORING OF AGRICULTURAL FOOD DURING TRANSPORTATION USING IOT

**VM Saravanaperumal, Sumaiya Nadeem
Smarthi B, Yashawini CE & Shafiya Ashuma**

Abstract

The tracking and monitoring of agriculture food stock throughout transportation using IoT is an expeditious growing field that aims to increase the protection and efficiency of food transportation. IoT sensors are acclimated to monitor abundant aspects of food transportation, for instances temperature, humidity, and location. This information is then transmitted to a central database in real-time, where it could be analyzed and acted upon if any issues are detected. By using IoT technology, using its resources, the agriculture sector can ensure food products are transported under optimal conditions, minimizing spoilage and reducing food waste. In addition, IoT technology will also help to detect and prevent food fraud and contamination, providing greater transparency and accountability throughout the food SCM.

DETECTING PHISHING WEBSITES USING MACHINE LEARNING

**Rashmi B R, YellaLalith Sai, Sai Pavan B N
Yalladheerajj Kumar & Shashwath S Kharvi**

Abstract

Phishing attacks remain a persistent threat to online users and organizations, making it crucial to develop effective techniques for detecting phishing websites. In recent years, machine learning approaches have been increasingly used to tackle this problem due to their ability to learn from large datasets and detect patterns that may not be discernible to humans. This paper presents an abstract of a study that aims to detect phishing websites using machine learning techniques. The proposed approach uses a dataset of phishing and legitimate websites to train different classifiers such as decision trees, random forests, and support vector machines. The study evaluates the performance of each classifier using metrics such as accuracy, precision, recall, and F1 score. The results show that the proposed approach achieves high accuracy and performs better than traditional anti-phishing techniques. The study concludes that machine learning techniques can be effective in detecting phishing websites and can be integrated into existing security systems to enhance their effectiveness.

ON-SOFT BIOMETRIC PHOTO ENCRYPTION AND DECRYPTION

**Deepa Konnur, Yashas Rayala T
Sumanth S, Santhosh R & Vinay N**

Abstract

With the rapid pace of technological growth, it is very important to secure user data. A robust technique which not only secures data but prevents it from various attacks is necessary. Such a technique is proposed within this article. Biometric authentication is one such practice seen today. Contrast to other forms of authentication, biometric recognition provides a strong link between a data record and an individual and it guarantees high level of accuracy and security. But this biometric data can be used by attackers to get illegal access. In order to prevent such acts, a robust technique known as zero-bit watermarking is proposed through this paper.

PREDICTION OF TRAFFIC SIGNAL VIOLATION FROM VIDEO USING AI TECHNIQUES

**Shashidhar V, Niranjan R, Sagar D
Raghavendra HK & Pushpak V Reddy**

Abstract

According to WHO, 1.35 million people die in traffic accidents each year. Technology is improving every year, Rapid growth in the number of new vehicles on the road contributes to severely congested roads and gives people licence to break traffic laws. This causes a significant number of traffic accidents. Computer vision-based traffic violation-detection systems are a highly effective instrument for tracking and penalising traffic infractions. The proposed system was put into practise using YOLOV3 object detection to find traffic infractions such signal jump, vehicle speed, and vehicle count. The system is also accuracy optimised. Signal jump is determined by using the vehicle's location and the region of interest for the period of frames. Vehicle count detection accuracy was 97.67% for this implementation, and accuracy for vehicle count detection and an accuracy of 89.24% for speed violation detection.

CROSS-PLATFORM APPLICATION TO DIGITIZE MEDICAL RECORDS USING FLUTTER AND GOOGLE ML KIT

**Sunil A, Shankarling Kalashetty
Sagar K & Santosh K**

Abstract

The project at hand is cross-platform end-user program/software that is developed using Flutter and NodeJS for web development. The primary objective of the application is to digitize physical health records by utilizing machine learning approaches. This digitalization process would enable the users to effortlessly access and manage their medical data in secure and streamlined manner. Additionally, the application features an option for uploading digital health records, thereby transforming it into an end-to-end digitalization platform for medical records. The project is in complete alignment with the recent government reforms, namely, the Unified Health Interface (UHI), and represents significant technological advancement in the healthcare industry. The user-friendly interface, coupled with secure architecture, ensures that users' sensitive medical information remains protected, instilling sense of privacy and trust in the application. By providing better access to medical information and facilitating efficient communication among med-tech providers and patients, our application will lead to improved patient outcomes and more effective healthcare management. The implementation of a very efficient/useful and integrated healthcare system where medical records can be easily shared and accessed by authorized parties is the ultimate goal of this application.

FACIAL EMOTION USING CONVOLUTIONAL NEURAL NETWORK

**Deepa Konnur, Mareddy Christofar, Bangaru Aditya, K
Yashwanth Chowdary & Augustine**

Abstract

Humans communicate each other by words, body language, and feelings. Because of the high need for such systems across various industries. In terms of artificial intelligence, a machine will be able to communicate with people far more easily if it can recognise human emotion. Additionally, it would be useful in fields related to health care, such as counselling. Depending on the status of the student, an E-Learning system may change the presentation style. However, static emotion detection is frequently not very helpful. It is crucial to understand the user's emotions over time in a real environment. In light of this, the research suggests a model for real-time face expression identification.

INTERNET OF THINGS-BASED INTELLIGENT FARMING FOR SOIL CONDITION TRACKING AND WATER CONTENT MANAGEMENT

**Kamal Raj T, Santhosh N
Jeevan Y & Sowmya M N**

Abstract

The way we farm could be dramatically altered by a new Internet of Things-based technology called intelligent farming. This study recommends an Internet of Things-based system for managing agricultural water content and monitoring soil quality. The system is made up of IoT sensors that are placed on a field to collect data on the water and soil levels. After that, the data is transferred to a platform that runs on the cloud for analysis and interpretation. The platform analyses the data processed by machine learning to build a dashboard that shows current data on the state of the levels of the soil and water. This helps farmers decide on irrigation methods wisely, cut down on water waste, and increase crop yields. The suggested technique is a viable and economical option that may be used in both large- and small-scale farming operations. Farmers can optimise irrigation practises, enhance soil health, and boost profitability by utilising the potential of IoT. By minimising water waste and increasing the effectiveness of irrigation techniques, the technology has the possibility to lessen the negative environmental effects of agriculture. Overall, the suggested Internet of Things-based intelligent agricultural system has the power to transform agriculture and offer a long-term answer to feeding an increasing population.

ACCIDENT DETECTION AND ALERT SYSTEM

**Suresh M, Chandana GR
Vamshi Krishna, Inchara L & Harika Polluru**

Abstract

Road accidents rates are very high nowadays, especially two wheelers. Timely medical aid can help in saving lives. This system aims to alert the nearby medical center about the accident to provide immediate medical aid. The attached accelerometer in the vehicle senses the tilt of the vehicle and the a heartbeat sensor on the user's body senses the abnormality of the heartbeat to understand the seriousness of the accident. Thus the systems will make the decision and sends the information to the smartphone, connected to the accelerometer through gsm and gpsmodules . The Android application in the mobile phone will send text messages to the nearest medical center and friends. Application also shares the exact location of the accident and it can save time.

VEHICLE TRACKING SYSTEM USING IOT

**VM. Saravana Perumal, Alisha S
BV Manasi, Meghana R & Manasi Yadav**

Abstract

Global System for Mobile Communication (GSM) and Global Positioning System (GPS) based vehicle location and tracking system provides effective, real time vehicle location. The GPS based vehicle tracking system is designed to find out the exact location of any vehicle and intimate the position to the concerned authority through SMS. The system includes a GPS modem that it retrieves the location of a vehicle in terms of its longitude and latitude. The system uses geographic position and time information from the GPS. This hardware is fitted on to the vehicle in such a manner that it was not visible to anyone. The system automatically sends a return reply to that particular mobile indicating the position of the vehicle in terms of latitude and longitude when a request by user is sent to the number at the modem. It also monitors the temperature of the engine. A program has been developed that it is used to locate the exact position of the vehicle and also to navigated track of the moving vehicle on Google map. The system allows to track the target anytime and anywhere in any weather conditions. This system is user friendly, easily installable, easily accessible and can be used for various other purpose.

WOMEN SURAKSHATE: A CUSTOMIZABLE ANDROID AND UI WATCH APP FOR ENHANCED PERSONAL SAFETY

Vijayanand S, ShyamSundar G, Siddesha OB
Hemavathi R & Mohammed AthiqKamran

Abstract

The developed Android application utilizes Jetpack Compose for the purpose/aim of ensuring women's safety. It is coupled with a WearOS watch application and provides features such as panic mode, emergency mode, location sharing, image sharing, and others that can be beneficial during dangerous situations. Firebase has been implemented as a backend for the application, and mobile functions have been utilized/implemented for its smooth functioning. The WatchOS documentation has been followed closely to ensure seamless functioning of the watch application. This application offers a practical solution for women's safety in a world where this has become a pressing issue. Panic mode enables the user to alert pre-selected contacts instantly during an emergency, while emergency mode uses location sharing and image sharing to provide quick assistance to the user. Real-time location sharing offered by the application can provide peace of mind to the user's family and friends. The Firebase backend provides scalability as per user requirements, while the WearOS watch application provides quick access to the application's features.

ONLINE SMART VOTING SYSTEM USING BIOMETRICS BASED FACIAL AND FINGERPRINT DETECTION ON IMAGE PROCESSING AND CNN

**Shashidhar V, Lakshmidhevi NG
Harshitha P, Rashmi BM & Ruchitha V**

Abstract

A biometric technology that is gaining popularity in many applications, such as online voting systems, is facial recognition. With this technology, facial features of a person are analysed and compared with those in a database using algorithms. The goal of using facial recognition in online voting systems is to increase voting process security and accuracy. When we vote online, a facial recognition technology records their facial characteristics and compares them to a database of registered voters. By ensuring that only legitimate voters are permitted to cast ballots, this technology lowers the possibility of fraud. By identifying voters' faces, the system can also spot and stop attempts to rig the voting process. To improve the security and accuracy of the voting process, online smart voting systems can incorporate fingerprint detection, a popular biometric authentication technique. Utilizing a database for comparison during the voting process, fingerprint data from authorized voters is collected in order to implement fingerprint detection. A voter's fingerprint is taken when they cast a ballot, and authenticate their identify, it is compared to the fingerprints stored in the database. If the voter's fingerprint matches one of the fingerprints in the database, they are judged qualified to vote, and their vote can be recorded. The use of fingerprint detection can help stop fraud and unauthorized access to the voting while preserving the privacy of the voters.

A METHOD FOR CREATING A SMART CLASSROOM BASED ON IOT

**Manasa GV Kumar, Samyuktha S
Sneha Aparna & Suryakanth Mastappa Naik**

Abstract

Students are more eager to adopt creative teaching techniques and demand innovative university campus life in this era of smart classroom technologies. IoT and cloud computing technologies can offer solutions for a smart and sustainable campus to enhance students' learning processes and boost the effectiveness of routine tasks carried out inside the institution. This project focuses on integrating the cloud into the educational process using the IoT paradigm. IOT in education enables students to study cutting-edge technologies that aid in the development of fresh concepts and rational solutions to societal challenges. The intelligence system, unified campus portal services, security, and maintenance system are all provided by IoT-based cloud computing technologies. The schools' increased digital connectivity improves both student learning and environmental sustainability.