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Abstract. Natural fiber reinforced polymer composite is a composite material in which natural fibers are used to reinforce the polymer matrix so as to improve its mechanical properties. These are environmentally friendly and cost effective to synthetic fiber reinforced composites. The availability of natural fiber, low cost and ease of manufacturing haveurgedresearchersworldwidetotrylocallyavailableinexpensivefiberandtostudytheirfeasibilityforreinforcement purposes and to what extent they satisfy the required specifications of good reinforced polymer composite for Industrial and Structural applications. In this project hybrid composites are fabricated i.e. jute and banana as reinforcement and matrix as polyester resin, with the weight ratios of 2, 2.5 and 3gms of reinforcement. The tensile and flexural specimens are prepared as per ASTM standards. The testes are conducted on the specimens and we observed that tensile strength, load, elongation, strain and young modulus have increased and flexural strength, Young's modulus, loads hasincreased.

Keywords: Natural fiber, polymer composite, mechanical properties, flexural specimens, ensile strength, load, elongation, strain and young modulus.

1. INTRODUCTION

1.1. OBJECTIVE OFEXPERIMENT

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Abstract: The PV Module Maximum Power Point Tracker (MPPT) is a photovoltaic system that proceeds as a origin of electrical power supply with the use of photovoltaic array. The photovoltaic (PV) arrayboastan optimum operating point, called the maximum power point, which alters promptly and its variation chiefly depends on cell temperature, the insolation level and array voltage. The province of MPPT is needed to drive the PV array at its maximum power point. This project centers on Design of PV array and MPPT by using Cuk converter topology. The output voltage and current of solar panel are steadily examined by MPPT to fish out maximum power. The design involves of PV array, DC-DC Cuk converter and two algorithms i.e. the P&O., Incremental conductance methods have been proposed. In addition, a comparison between two methods are stated and inspected. The complete system is modeled and simulated in the MATLAB/SIMULINK.

Keywords: PV, MPPT, Cuk converter

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1. Introduction

IOT BASED BRIDGE MONITORING AND FLOOD CONTROL SYSTEM BY USING WIRELESS SMART SENSORS

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Abstract- Many of the bridges in cities built on the river are subject to determine as their lifetime is expired but they are still in use. They are dangerous to bridge users. Due to heavy load of vehicles, high water level or pressure, heavy rains these bridges maycollapse which leads to disaster. So these bridgesrequire continuous monitoring.So we are proposing a system which consists of water level sensor, water flow sensor, GSM module, LCD display and Arduino microcontroller. This system detects the water level, pressure and other conditions of the bridge. If the water level, water flow sensor and accelerometer sensor cross its threshold value then it generates the alert through buzzer. This system can analyse and monitor in real time conditions of a bridge and its environment, including water level and other safety conditions. Bridge monitoring system provides the information required to support a safe transportation system. This system can monitor the bridge conditions via mobile telecommunication devices.

Keywords: Internet of things (Iot), flood detection, bridge safety system, Alert generation.

1. Introduction

Bridges are most important aspect of country's transport but are expensive tobuild and maintain. Sometimesminute fault inside thestructure might affect whole bodywhich lead to collapse of the structure.Now-a-days because of accidents of bridge or bridge severely damaged by floods and earth quakes are frequently reported each year.Different disasters and damaged sites require different professional disaster rescue knowledge and equipment in order to achieve optimal rescue results.Therefore, in this study, the IoT, Wireless Sensor Network (WSN) and smart building technologies are adopted to solve the above-mentioned problems of bridge safety information transmission and management by developing an IoT-based bridge safety monitoring system.The technology and various software moduleswhich will along with the various detection based on parametersalso notify the user if the bridge

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DESIGN OF 8-BIT COMPARATORS

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Abstract - The purpose of this paper is to study different types of comparators as they are used in many electronic circuits to find the threshold levels of voltages or currents. The comparators output will give highest and lowest numbers among the applied inputs. The proposed comparators here use the subtractor as we easily say whether the value is areater or lesser based on the borrow generated. The software used to design these comparators is Xilinx Vivado. The results of various comparators designed are compared in terms of their power, number. of cells etc., The purpose of this paper is to study different types of comparators as they are used in many electronic circuits to find the threshold levels of voltages or currents. The comparators output will give highest and lowest numbers among the applied inputs. The proposed comparators here use the subtractor as we easily say whether the value is greater or lesser based on the borrow generated. The software used to design these comparators is Xilinx Vivado. The results of various comparators designed are compared in terms of their power, number. of cells etc.,

Key Words: PE - Processing Element; CBDC -Conventional Bit-wise Data Comparator; Design of Borrow Look Ahead Data Comparator (BLAC); Design of Mux Based Data Comparator (MDC).

1. INTRODUCTION

The comparators are the devices that are used in the electronic circuits to find the threshold levels to give an input and also to compare the results of output with some predefined value to check whether the output is at expected level or not. The basic comparator is a conventional bit-wise comparator that compare the bits and gives the result as one of the numbers is greater or less or equal to the other. The comparators uses subtractor as one of the processing element. Mux is also used in this comparator design to give the outputs depending on the borrow from the subtractor. In this paper we have designed different types of data comparators that are used in various circuitry like Null-Detector, Zero-Crossing Detector, Relaxation Oscillator, Level Shifter, Analog to Digital Converters, Window Detectors, BLDC Operating Motors, Switching Power Regulators and also in Peak Detectors.

They are mainly

1.Conventional Bit-wise Comparator.

2.Borrow Look Ahead Comparator.

3.Mux-Based data Comparator.

2. COMPARATOR DESIGN

The design of comparators involves the designing of processing elements used in it and mux interface at the output of these cascaded processing elements. The design of comparators is shown below.

2.1.DESIGN OF **CONVENTIONAL BIT-WISE COMPARATOR**

This traditional data Comparator employs the operation similarly to a word Comparator. As a processing element, a 1-bit magnitude comparator is used. To implement 8-bit comparator, 8 processing elements of 1 bit comparator are considered. All the 3 possible ways are a>b, a<b, and a=b represented as the outputs.



Fig 2.1 Schematic of the Conventional Bit-Wise Comparator

The operation of the comparator is shown by a tabular model to understand it's working in a easy way. When the inputs meet the condition then the values in the table are highlighted.

MEDICINE VENDING MACHINE USING RASPBERRY PI

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ABSTRACT - This proposed system is an automatic medicine vending system. The major goal of this project is to reduce the time difference between giving medicines to patients and finding the medicines. Generally, those who sell medicines in medical shops sell more than the medicine the rate for profits. To prevent this problem, we proposed an automatic medicine vending machine for dispensing medicines automatically. The prescription data is scanned using a camera, and the data is read so that the user can receive the relevant medicine. The user can also pay the money through online payment and receive their medicine. This proposed the system is implemented by using a Raspberry Pi interfaced with a camera, power supply, servo motor, Internet connection, OCR modules, and a magnetic card module (RFID Card). The user gets a notification alert using IOT when the rack is empty and gets a notification alert when someone is trying to break the machine. This project allowed users to buy medicine more easily and at reasonable prices.

1. INTRODUCTION

Vending machines, such as those for food, drinks, cigarettes, and newspapers, are widely used worldwide. They began many years ago. The first vending machine was built in the 17th century by Hero of Alexandria, a Greek mathematician, and engineer from Alexandria. It was a coin-an operated mechanism for dispensing holy water.

Every human life depends on the passage of time. As technology is rapidly increasing, manpower is decreasing day by day.

This method's main purpose is to make things simpler for patients, especially elders, to take their drugs. This proposed approach cuts down on the amount of time it takes for the shopkeeper to deliver each urgent or serious medicine to the patient in line and reduce manpower. It also aids in selling medicines at MRP prices with no potential of the vendor raising the price. This system enables secure pharmaceutical storage in patient care units and computerized tracking of narcotics and other restricted substance usages. There is no question about these technologies can boost the productivity of pharmaceutical administration. It is a big advantage for people to take medicines from medical shops with reasonable prices within very less time.

Coal Mine Workers Safety And Health Monitoring, Alerting System Based On IoT

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ABSTRACT

Safety is the most vital part of any type of industry. In the mining industry safety and security is a fundamental aspect of all. To avoid any types of accidents, mining industry follows some basic precautions. Still accidents takes place in underground mines due to rise in temperature, increased water level, and gas leakage such as methane gas, carbon monoxide, nitrogen dioxide. If any smoke level in the mine goes beyond the threshold range at that point the arduino will alert the mining administrations and workers through a buzzer and the detailed information of a affected worker or the affected area will transferred immediately to the administrative office. So that they can control the situation and protect the workers as soon as possible. We can monitor health status of a each worker such as the pulse rate, breathing rate by using respiratory sensor and heartbeat sensor .This device and CMOS battery both are attached to the helmet of the each worker. LORAWAN module is used to transfer the information of the each worker from the underground to the administrative office by using signal booster.

Key Words: Arduino UNO, RF Transmitter and receiver, ECG Sensor, Gas Sensor, Water level Sensor, Temperature and Humidity Sensor.

ANALYSIS OF GEOGRAPHICAL LOCATIONS FOR LAND USE LAND COVER THROUGH PIXEL BASED ALGORITHM

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ABSTRACT:

Anthropogenic acts have dramatically altered natural landscapes, particularly in areas where population increase and climate change are extreme. Understanding land-use and land-cover (LULC) changing patterns is critical for effective environmental management, thematic map analysis, and water management practice.

Our proposed concept incorporates the use of pixel-based techniques, a geographic information system (GIS), and a region to perform interactive supervised categorization. For the most precise and efficient mapping of land use/land cover in a specific area, input data is gathered from Landsat-8, the world's longest-running enterprise program for satellite imagery gathering.

The steps to map the land use/land cover are as follows: 1.Collection of Landsat-8 images of year 2020 2.Image Pre-processing 3.NDVI (Normalized Difference Vegetation Index), EVI (Enhanced Vegetation Index) map generation 4.Interactive Supervised classification 5.Area Assessment 6.Error Matrix Generation 7.Accuracy assessment.

Here image classification can be carried out through one of the pixel based algorithm i.e., interactive supervised image classification algorithm.

Our suggested model uses image processing techniques to follow the growth of a Vizianagaram region over the last few years and to anticipate what will happen in the future.

Keywords:

Landsat-8, Pre-processing, GIS, NDVI and EVI,

Interactive Supervised pixel classification algorithm

Introduction:

The accurate analysis of land use and land cover enables them to be used for a wide range of applications, particularly for the application of themed maps, resulting in a more efficient land use. Thematic maps, on the other hand, are maps that show us the geographical aspects of a certain place and can be used to track development and even predict the future of that area.[1]

As a result of industrialization, different changes to the surrounding atmosphere have occurred, resulting in the degradation of nutrients in soil and land resources, as well as changes in the hydrological cycle, all of which are directly or indirectly destroying the environment in which we live.

Land is one of the most basic natural resources; it is vital not just to governments, but also to individuals.

Smart Trolley And Billing Using Raspberry-Pi

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ABSTRACT:

Shopping in super market we require trolley to carry our products and after shopping we have to approach the counter for billing, there we have to wait at the billing counter which results long queues.Smart Trolley will be replaced to overcome the problem. In this we implemented billing along with trolley. So that customer need not to wait long time in the queue and trolley is automatically controlled with mobile application which was installed in customers mobile and also the products that are selected in cart are scanned through RFID reader and are displayed in the LCD display after shopping the billing is reflected to the mobile application through Bluetooth (LAN). The payment is done using the mobile application. Now we have further implemented which is, if any one used to skip the payment and used to flow out, by using IR-transmitter/receiver we can detect the person at the exit and we have added stock monitoring in order to intimate the owner so that he can take further action and we have added database to store the order bills for future reference.

Key Words:Raspberry-pi, Bluetooth HC-05, RFID technology, IR sensor, DC-motor, Motor driver, Buzzer.

1.INTRODUCTION

Today every supermarket and shopping mall makes use of the shopping baskets and trolleys to collect the items.Shopping in a supermarket necessitates the use of a cart to transport our purchases, and once we have finished shopping, we must proceed to the billing counter, where we must wait in enormous lines.

The RFID tag, reader, obstacle avoidance, Wireless fidelity (Wi-Fi), and Bluetooth protocols are all combined in this smart shopping system to create a connected environment within a store. The RFID tag, reader, and Wi-Fi were used to automate the billing process, while the trolley's movement was controlled via Bluetooth and obstacle avoidance.

Mobiles can connect to the trolley via Bluetooth. Customers benefit from this technique since it saves them time and makes the buying process less tedious and the trolley will move along with them, reducing the amount of effort required by the client to push the trolley. The automated billing mechanism used here can help you save a lot of money.

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Key Words:Raspberry-pi, Bluetooth HC-05, RFID technology, IR sensor, DC-motor, Motor driver, Buzzer.

1.INTRODUCTION

Today every supermarket and shopping mall makes use of the shopping baskets and trolleys to collect the items.Shopping in a supermarket necessitates the use of a cart to transport our purchases, and once we have finished shopping, we must proceed to the billing counter, where we must wait in enormous lines.

The RFID tag, reader, obstacle avoidance, Wireless fidelity (Wi-Fi), and Bluetooth protocols are all combined in this smart shopping system to create a connected environment within a store. The RFID tag, reader, and Wi-Fi were used to automate the billing process, while the trolley's movement was controlled via Bluetooth and obstacle avoidance.

Mobiles can connect to the trolley via Bluetooth. Customers benefit from this technique since it saves them time and makes the buying process less tedious and the trolley will move along with them, reducing the amount of effort required by the client to push the trolley. The automated billing mechanism used here can help you save a lot of money.

IOT BASED PROTOTYPE OF AUTOMATIC CRADLE WITH BABY MONITORING SYSTEM

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ABSTRACT

The automatic baby cradle is designed to help moms who are immersed themselves with household chores, job and taking care of the babies. Looking after the baby is very handful task and it's even more difficult for working parents. The main aim of this proposed project is to design an IoT based automatic cradle with baby monitoring system which has various features like swing automation, entertaining with songs to soothe baby's crying. Cradle portrays a configuration in such a way that when the baby cries the sound sensor detects and plays a song using voice module and the cradle swings automatically with the help of a servo motor. The cradle likewise incorporates extra features like bed-wet sensor, temperature-humidity sensor and also accelerometer sensor which is used to monitor the movement of the baby in the cradle. Thingspeak cloud server is used which is an open data platform and API for the internet of things that enables you to collect, store, analyze, visualize, and act on data from sensors. We can monitor baby through thingview mobile application. In this proposed project, parents can receive the notification about baby's status even in the absence of internet by using gsm module. In addition to this we place a lcd display beside the cradle to see that conditions around the baby like temperature, humidity, movements, if the bed is wet and the baby cry. It will be ensured that the person responsible for the care of the baby will respond to the care that the baby needs in a timely manner.

Keywords: Sensors, Arduino, Baby Monitoring System, Smart Cradle, Android Application.

Disparity Enhancement of Contrast-Distorted Images Based on NR-IQA

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Abstract— The purpose of No-reference image quality assessment (NR-IQA) is to evaluate image quality when there is no reference image available. Contrast distortion, on the other hand, has been disregarded in the present NR-IQA research. In this paper, we present simple yet useful criteria for assessing the quality of contrast-altered pictures. Based on the idea that a high-disparity image resembles its enhanced image. First, we create a better image by equalizing the histograms. Then we compute the structural-similarity index (SSIM) as a measure of similarity between the original and enhanced images as the initial feature. The entropy and cross entropy based on histogram are also calculated for both sets of data. The original image and enhanced image were compared to yield a total of four attributes. Finally, we learn how to apply a regression module to integrate the five features indicated before in order to derive the quality score. Experiments on different quality metrics of an image shows that the proposed technique is superior and efficient.

Keywords—Contrast distortion, NR-IQA, histogram equalization, structural similarity index measurement, support vector regression (SVR)

I. INTRODUCTION

NR-IQA refers to No-Reference Image Quality Assessment, which aims to assess the human perception of picture quality without access to the original reference image, has lately been an active research issue as consumers demands for high-quality photos grow. When the distorted image is ready for review, it can be used in any of the locations of an image database.

Currently, most NR-IQA algorithms recommend two steps: feature extraction and regression using SVR. The majority of current NR-IQA approaches rely on natural scene statistics-based characteristics. In many spatial or transform domains, state-of-the-art techniques have incorporated a number of NSS models. It looks to be a combination of the previous approaches, as it uses a bag of feature maps scattered across several transform domains and three colour spaces. In addition, advanced neural networks and learning systems, such as deep belief nets, shallow Recurrent Neural Networks (RNNs), and deep CNNs, are increasingly being used by academics.

Conventional NR-IQA investigations, on the other hand, are primarily concerned with assessing common artefacts such as Gaussian blur, noise, and compression. In contrast, there has been limited research on the use of NR-IQA for evaluating contrast-changed images. Due to the limits of the collection apparatus or poor lighting conditions, contrast distortion occurs frequently during image capture. Furthermore, the NR-IQA, on the other hand, approaches perform admirably on commonly observed distortions, they consistently underperform as will be shown later in this study, contrast distortion has a negative impact on performance. In reality, image quality assurance (IQA) of contrast-distorted images is an essential study topic that can be used as a guide or assessment criterion in contrast enhancement systems. At the moment, several studies are focusing primarily on contrast distorted images. Gu et al.[1, 2] examined the problem thoroughly and developed the CID2013 and CCID2014 databases for image contrast change, as well as offering reduced reference IQA (RR-IQA) techniques based on phase congruency and image histogram information statistics. Liu et al. [3] have introduced the RRIQA metric RCIQM, uses free energy theory to compare the histograms of the contrast-altered and reference images. NR algorithms, on the other hand, are in high demand because these methods rely on partial access to the reference image. Fang et al. [4] proposed an NR quality metric based on NSS regulation that takes into account moment and entropy, which outperforms general-purpose NSS-based approaches. The NIQMC blind quality technique was developed by Gu et al. [12], which is based on the idea of data minimization and involves calculating the entropy of specific areas as well as comparing the picture histogram to a relatively uniform histogram. Gu et al. [16] recently discovered 17 factors based on sharpness, smoothness, and more, and then deployed a regression module to develop an IQA metric BIQME with collected big-data training examples using a regression module.

In this study, we present a simple but effective NR-IQA framework for contrast-distorted pictures. by noticing that a high-resolution image always looks like its enhanced version. Accordingly, our blind metric's design philosophy is based on two factors: image similarity and object recognition. Entropy computed from a histogram. Given an input image and a histogram built using a traditional method, we first focus on their appearance with equalization (HE). It's a full-reference IQA, in fact. We employ the structural similarity index (SSIM) as a metric to solve the problem. After discovering that the histograms of high and low contrast pictures differ, we turn to histograms as an alternative. Based on their histograms, determine the entropy of the basic and enhanced histograms. When we discover that the histograms of high and low contrast pictures are not the same, we turn to compute the entropy of the original histogram and the augmented histogram using the histograms of the two photos above one, we also estimate the cross

A DESIGN OF CIRCULARLY SLOTTED MIMO ANTENNA FOR WIDE BAND APPLICATIONS

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ABSTRACT

A Circularly slotted multiple-input–multiple-output (MIMO) antenna is presented for Wideband applications. This paper represents a MIMO antenna of dimensions 22mmx30mm ranging a frequency of 4.5GHz to 10.73GHz. As MIMO represents multiple antennas, this design consists of 2 rectangular patch antennas fabricated on 0.8mm thick FR-4 substrate along with a ground stub. Inorder to intensify the isolation and to abate the mutual coupling, ground stub is fixed. This proposed circularly slotted MIMO antenna is analysed through various parameters like return loss(S11), Isolation (S21), Gain, Bandwidth, VSWR, Radiation Patterns. This designed antenna has an Fractional Bandwidth of 81%, Gain(2.98), Isolation(-25dB). As a result, it can be noticed that the designed antenna is appropriate for Wideband applications.

Keywords: MIMO antenna, Mutual Coupling, Isolation, Ground stub, HFSS Software

1. INTRODUCTION

As wideband technology has evolved rapidly in recent years, it has created the need for rapid upgrades in system capacity to meet the needs for increased bandwidth, high isolation and better quality.

Inorder to meet those needs MIMO technique is invented where it uses more than one antenna to amplify the capacity of systems[1].

MIMO antenna has the main requirement of being compact, but it is also characterized by the higher mutual coupling between the two antenna elements which results in affecting the input impedance, radiation pattern bandwidth gain [2-3]. Hence to abate the mutual coupling and to intensify the isolation among the patch antennas different methods are initialized [4-5].

DESIGN AND ANALYSIS OF PATCH ANTENNA WITH DIFFERENT METAMATERIAL STRUCTURES FOR 5G APPLICATIONS

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ABSTRACT

The immense growth of wireless technology for mobile communication devices requires broad bandwidth, high data rate facilities and compact device size. The solution to the next generation user equipment is high data rate 5G technologies. In this Project, wideband antenna was designed and analyzed for 5G applications. The microstrip patch antenna was designed with the dimensions of $(25 \times 28 \times 1.6 \text{ mm}^3)$ and planar in structure and can be easily integrated with any radio equipment due to its compact size. Then that antenna design was investigated for the better return losses and multi band frequencies with the integration of artificial material. The artificial material used is commonly called "metamaterial" and it exhibits some peculiar electromagnetic properties that don't exist in nature like negative permittivity and negative permeability. In this paper we used the square, circular and hexagonal shaped split ring resonator metamaterial structure. The results were validated by fabricating the design prototype on FR-4 epoxy substrate for 5G bands. The antenna will be possibly used for communication in high data rate applications.

Keywords - Compact Size, Multiple Bands, Metamaterial Antenna, Split ring Resonator

1. INTRODUCTION

In spite of multiple daily breakthroughs in wireless technology, miniaturization of wireless handheld devices, including microstrip antenna [MSA], remains an important research topic. In addition, the increased need for devices that work at several frequencies has resulted in the development of various multiband antennas. Metamaterial antennas have became popular because of the several benefits they provide, including low profile, ease of manufacture and mounting, and a wide operating spectrum. The negative medium property introduced by Veselago (1968) by using metamaterials (MTM)[1], has been popularly adopted by various researchers for the better performance of the miniaturized microstrip antenna and utilized to fabricate small multiband antennas due to its exceptional resonant features. The introduction of SRRs in [2] was followed by an experimental demonstration in[3], which revealed the practical implementation of MTMs. When excited near its resonance frequency, SRRs produce a negative permeability effect in hollow metallic waveguides, allowing left-handed wave propagation [4]. When combined with antennas, such structures can be used to achieve a variety of designs [5-10] that the metamaterial loading enhances the gain and focusing the directional radiation of the antenna. Additionally, truncated, defected ground structures [DGS] and electromagnetic band gap (EBG) arrangements [11-12] are also gaining attentions in the performance enhancement of MSAs. This paper proposes a compact Optimized Metamaterial loaded Antenna .The following sections explain the designing the different metamaterial structures like Square , Circular and Hexagonal shaped split ring resonators, simulation and the discussions on the performance of the Antenna.

2. DESIGNING OF MICROSTRIP PATCH ANTENNA

In this paper firstly we designed the microstrip patch antenna with the dimension of $(25 \times 28 \times 1.6 \text{ mm}^3)$ and planar in structure and can be easily integrated with any radio equipment due to its compact size. In this microstrip patch antenna we used FR4 epoxy as Substrate with the thickness of 1.6mm. FR4 epoxy glass substrates are the material of choice for most PCB applications. The material is very low cost and has excellent mechanical properties, making it ideal for a wide range of electronic component applications. Then we measured the key properties of the antenna like return loss and gain. The antenna is working from 3.48 - 5.83 GHz with the return loss of -23dB. In many countries, the 4GHz band is reserved for government authorities and military institutions and the bandwidth of the designed antenna is 2.35 GHz

A Compact Quad band microstrip patch antenna for C-Band, X-Band and Ku-Band Applications

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Abstract

In this paper, we proposed a compact quad band microstrip patch antenna. The overall size of the antenna is 22mmx17mm which uses FR-4 epoxy material as substrate with 4.4 as dielectric constant and 0.02 loss tangent. This antenna is driven by microstrip feed line of 50 ohms impedance matching. The height of the substrate used is 1.6mm. The proposed antenna has the return losses of -17dB, -18dB, -25dB, -19dB. Gain of the proposed antenna is 2.7dB. The proposed antenna operates in the C band, X band, and Ku band with resonances at 4.7 GHz, 7.1GHz, 10.1 GHz, and 12.4 GHz. As a result, the proposed antenna is suitable for wireless and radio applications. The antenna is designed and simulated using HFSS (High Frequency Structural Simulator) software tool and the simulated results are shown in terms of return loss, radiation pattern and gain.

Keywords: Microstrip patch, Defected Ground Structure (DGS), Return Loss, Gain

Introduction

Antennas have long been a vital part of communication. In recent years, the compact nature and reduced size of the antenna has been a regular requirement. A microstrip antenna is one that is made on a board utilising microstrip technology. They are mostly employed at microwave frequencies. An individual microstrip antenna is made up of a patch of metal foil in various forms (a patch antenna) on the surface of a PCB and a metal foil ground plane on the opposite side of the board. A patch antenna is a narrowband, wide-beam antenna that is made by etching the antenna element pattern in a metal trace bonded to an insulating dielectric substrate, such as a PCB, and then bonding a continuous metal layer to the opposite side of the trace [1].

Traditional microstrip antennas had some disadvantages, including a single working frequency, a short impedance bandwidth, a poor gain, a bigger footprint, and polarisation issues. A variety of strategies for improving the characteristics of traditional microstrip antennas have been published, including stacking, various feeding techniques, Frequency Selective Surfaces (FSS), Electromagnetic Band Gap (EBG), Photonic Band Gap (PBG), Metamaterial, and so on. Because of its unique band gap features at particular frequency ranges, electromagnetic band gap (EBG) technology has become a key breakthrough in radio frequency (RF) and microwave applications [2]. Since 1999, EBG structures have been studied for increasing the performance of a variety of RF and microwave devices by leveraging the surface wave suppression and artificial magnetic conductor (AMC) capabilities of these unique type metamaterial. Compactness, wide bandwidth with low attenuation level, tunability, and compatibility with planar circuitry are all essential considerations in the design of EBG structures. This sort of antenna has a pretty strong directivity, although the band-width remains quite small. A multi-

DESIGN OF DLMS ADAPTIVE FILTER

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Abstract-An efficient delayed least mean square (DLMS) adaptive filter algorithm is designed using VERILOG HDL. When compared to all types of adaptive filters, DLMS algorithm-based adaptive filters are accurately better in removing noise and has better filter performance. The adaptive filter design employs multipliers and adders for construction of sub blocks. However, the current DLMS adaptive filter employs distributed arithmetic, which produces good area-delay computations but slows down the speed of the delayed LMS adaptive filters. To construct a highspeed multiplier, PPG (Partial product generator) is proposed here and an efficient adder scheme used to achieve lower delay and efficient area. The synthesis results give comparative area-delay observations between the existed and suggested structures.

Verilog hardware description language is employed in this case for algorithm modelling and filter design (Adaptive filter) and software used is MODELSIM.

Key words— DLMS adaptive filter, Error computation block, Partial product generator, Weight update block.

I. INTRODUCTION

Digital signal processing is the act of changing the information content of a signal, and it is widely used in a variety of applications such as video compression, multimedia and wireless communications, global positioning systems, biomedical signal processing and so on [1]. Filtering is the most extensively utilised signal processing technique in DSP for removing undesirable signals [2]. The present era of mobile computing and multimedia technology demands DSP systems with high performance and low power consumption, necessitating the use of the FPGA idea of VLSI technology to create these filters, as traditional filter design has become computationally intensive and power costly [1],[2]. Because of their accuracy and precision, digital filters are more suited for real-time audio, speech, and signal processing applications than analogue filters [3]. Among FIR and IIR being types of digital filters, FIR filters are favoured than IIR filters in terms of circuit complexity, group latency, phase distortion, and output response which is presented in [4]. Even though fir filters are the best in removing noises, adaptive filters can effectively remove some noises that fir filters cannot. Adaptive filters are used to adapt to signal-changing surroundings, noise-signal spectrum overlap, and unknown or time-varying noise [5]. For example, When the interference noise is severe and its spectrum overlaps that of the desired signal, a typical filter such as a notch filter with fixed filter coefficients will fail to preserve the desired signal spectrum, but an adaptive filter would.

The paper is organised as follows. Section II introduces Knowledge of Adaptive filter, Overview of DLMS algorithm, Review of adaptive filter architectures under background survey. Section III introduces Error computation block, Weight update block under Proposed methodology – Filter design using PPGs and adders. Section IV gives discussion on Results. Section V concludes the paper.

ACQUIRING HIGHER DATA RATE FOR MIMO OFDM SYSTEM USING DENT CHANNEL COMMUNICATION

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ABSTRACT:

The communication system needs high data rates, high spectrum efficiency and low errors. However, the existing Frequency Division based Multiplexing methods cannot satisfy these properties. Thus, this project work focused on implementation of advanced Multiple-Input, Multiple-Output Orthogonal Frequency-division Multiplexing (MIMO-OFDM) system, which is the dominant air interface for 4G and 5G broadband wireless communications. The proposed system combined with MIMO technology, which multiplies capacity by transmitting different signals over multiple antennas, OFDM which divides a radio channel into a large number of closely spaced subto provide more channels reliable communications at higher speed. Here we are using dent channels, which are cost-effective. MIMO system experiences the Inter Symbol Interference (ISI) effects particularly at high data rate transmission in which the system performance is extremely degraded. Thus Space Time Block coded (STBC) Orthogonal Frequency Division Multiplexing is a most reliable technique to attain bandwidth efficiency and ISI suppression ability.

Introduction:

One of the most well-known wireless communication techniques is the multiple-input multiple-output (MIMO) system. They have developed technology that enables them to reach high data rates. It is primarily achieved by employing numerous antennas on both the transmitter and receiver sides, with the goal of communication dependability improving bv ensuring high-speed transmissions with little quality of service deterioration. One of the key

goals achieved by the usage of MIMO systems is to greatly improve channel capacity under various adaption rate policies without the requirement for additional frequency resources.MIMO systems, in particular, have become the cornerstone of mobile communications transmission in the 5G generation and beyond. Initially, the system was built on 2x2 MIMO antennas. For high-rate transmissions in wireless communications, Alamouti established the space-time block coding (STBC) approach, which relies on the space-time transmit diversity technique. Tarokh et al. used orthogonal designs to expand such a technique to a considerably larger number of transmit antennas. STBC codes have a high output SNR maximisation, allowing them to avoid the fading phenomenon's unfavourable effects.

Improving energy efficiency (EE) in internet of things (IoT) networks is an important research area. multiple-input multiple-output (MIMO) systems have been shown in the literature to improve both spectral efficiency (SE) and energy efficiency (EE) in IoT networks. By using spatial multiplexing to a large number of distributed IoT devices and/or user gear, massive MIMO systems increase the SE of IoT networks (UEs). Furthermore, we may achieve a significant array gain by increasing the number of transmitter (TX) antennas with a small number of UEs, allowing us to lower TX power. The channel hardening effect is a key feature of MIMO.

After that, channel estimation and interference suppression are a breeze. One of the most significant issues in massive MIMO systems is reference signal (RS) overhead, which grows as the number of IoT devices and/or UEs grows. In MIMO, time division duplex (TDD) mode is typically utilised to reduce RS overhead since in frequency division duplex (FDD) mode, the

Design of Microstrip Patch Antenna for S-Band Applications

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Abstract— In this study, a novel microstrip slotted patch antenna with partial ground structure for S-Band applications is developed. To improve bandwidth, return loss, and gain, we've incorporated the DGS patch antenna concept. We have used a low-cost FR-4 dielectric substrate in this test. The antenna's overall measurements are 30mm x 35mm. The result achieved is an single band working frequency is 2.7GHz, -45dB Return Loss(s11), 2dB Gain and Bandwidth were achieved for the designed microstrip patch antenna. The proposed antenna can be used for Bluetooth and GPS wireless services where it can be implemented for indoor and outdoor area providing good coverage and increased capacity.

Keywords—component, formatting, style, styling, insert

I. INTRODUCTION

There are numerous techniques for reducing antenna size, but the main drawback is the reduced gain. We have reduced the size as tiny as possible while obtaining the maximum gain attainable when designing a microstrip patch antenna. The EBG technique is the most commonly used thing when designing an antenna. It will decrease the surface wave propagation. The surface wave propagation means when an antenna transmits the electromagnetic waves due to surface waves it will go through the top of antenna structure, to divert the signal into free space this EBG technique is used.

For bandwidth enhancement we have two concepts as Increasing the substrate thickness& parasitic patch. We use parasitic patch concept. Simply a parasitic patch means that the patch situated outside the main patch. This will increase our bandwidth for better efficiency of the antenna.Here, we have also used partial ground technique for the improvement of gain and bandwidth of an antenna. We have implemented different geometrical values and shapes of the antennas to design the antenna. In this DGS also has different shape and size for improvement of Gain. The Return Loss (s11) has increased by changes made in the shape of the antenna. The return loss (s11) has the higher mark in the outcome of our antenna.

By implementing these techniques we have designed a Hexagon shaped patch with slotted AB shape in it. The slotted antenna and EBG will decrease the surface wave propagation. The slotted antennas are used in microwave and UHF. The size of the antenna that we have designed is 30mm x 35mm with partial ground structure.

II. DESIGN PROCEDURE

For antenna design and simulation, ANSYS HFSS is utilized. A heptagon-shaped "AB" slotted micro strip patch antennahas been constructed. We have used FR4 epoxy dielectricsubstrate for the Micro Strip patch antenna. The slotted patch's measurable dimensions are W = 30mm and L

= 35mm. The antenna is made of FR4 (Flame Retardant-4) with a tan = 0.02, relative permittivity = 4.4, and a thickness of 1.6 mm. The dielectric substrate and ground plane make up a microstrip. The ground plane is on the bottom side of the material substrate, whereas the diverging patch is on the top side. The patch that is placed on the face is fed through the feed line.

The proposed antenna gain with FR-4 substrate is less than 0 dB, whereas the directivity is 3.8dB. The inferior performance of the low-cost FR - 4 substrate accounts for this gain drop. To demonstrate the concept, another antenna is developed on this substrate with the following parameters: r = 4.4, thickness = 1.6 mm, and loss tangent = 0.02.

The patch dimensions are optimized to operate at the 2.7 GHz frequency as:patch length = 30 mm and slot width=35 mm.



A micro-strip patch antenna consists of a radiating patch on one side of dielectric substrate and has the ground plane on the other side. Conducting materials are like copper or gold are usually used for making the radiating patch.

EMERGENCY VEHICLES WITH AUTONOMUS TRAFFIC SYSTEM

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ABSTRACT:

Traffic control system plays an important role to manage traffic congestion on the road.A disaster can strike at any time. The system needs to be able to cope with the situation effectively. The goal of this study is to develop an Emergency Vehicle Management Solution (EVMS) for locating an efficient vehicle-passing route sequence that permits an Emergency Vehicle (EV) to pass through. cross a junction without delay, particularly during peak hours and seasons. The suggested method bypasses the emergency vehicle, resulting in minimal delays for other motorists at the intersection. When an EV enters the communication range, traffic from the adjacent lane will move aside to provide route for EV.Because the number of vehicles on the road is continually increasing, getting an EV to its destination in the least amount of time is critical. This is reviewed and consolidated information on the different types of the existing traffic control system for the road traffic management such as Wireless sensor networks, RFID. This project's outcome demonstrates that the EVMS may greatly shorten the trip time of emergency vehicles while producing no performance impairment in typical cars.

Key words: Arduino Nano, ask 433mhz RF Transmitter and Receiver, 16x2 lcd display with i2c interface, Arduino uno r3, RSA algorithm.

1.INTRODUCTION:

India is the second most populated country with the growing economy. In India, controlling the traffic is the major problem.Excessive traffic has resulted in a slew of issues, including property damage, air pollution, wasted time, and deaths as a result of accidents and delays in rescue vehicles. Various traffic control systems have been introduced in the past few years for better managing and controlling rapidly increasing traffic.An EV is a vehicle that provides emergency services in an incident. These vehicles are usually excluded from conventional traffic rules to reach their destination as soon as possible. The three most prevalent types of EVs are medical, firefighting, and law enforcement.Different countries have developed various systems for passing EVs without interrupting the other traffic. To establish the location of EVs and the projected time of arrival at the junction, these systems use Global Positioning Systems (GPS), Computer Aided Dispatch (CAD), and traffic management data.

Mukt Shabd Journal TRIPLE BAND RECTANGULAR PATCH ANTENNA FOR C,X,K BAND APPLICATIONS

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Abstract - Microstrip patch antennas provide a number of characteristics that make them a viable option for microwave communication. Two novel designs for s, k, x, c band applications are proposed in this study. For s, c band applications, the first design was presented. For k, x, c band applications, a second design was offered. This document contains detailed mathematical calculations, simulation findings, and pertinent antenna applications on the operating frequencies for Microstrip patch antennas. The first antenna in this study has triple bands at 3.3, 4.4, and 6.3 GHz, which are classified as s and c bands. At 7, 10.7, 16.1 GHz, the second antenna in this study has triple bands that are designated as c, x, k bands. The first antenna is 28 x 23 mm² in size. The second antenna measures $24 \times 20 \text{ mm}^2$. The return loss of the two proposed antennas is less than -10 dB. The patch antenna designs were computed, simulated, and optimized using HFSS software. The first antenna has a favorable frequencies were used. For some wireless devices, c-band frequencies were used. X-band frequencies can be used for some terrestrial broadband etc., K-band frequencies can be used in satellite communications.

Keywords: Triple bands, s band, c band, x band, k band, HFSS.

1. INTRODUCTION

Any communication system relies heavily on antennas. Both transmission and reception are possible with antennas. It acts as a medium between RF transceivers and open space, converting electrical signals to EM waves. Antennas can be in any size ranging from tiny shapes to extremely large shapes with different parameters. There are many types of antennas which can be used for different applications. Due to its ease of fabrication, flexibility of design in terms of implementation, and low cost, microstrip antennas are now frequently used for wide-band or multi-band wireless communication, radars, and satellites, among other applications[1].

In this paper, a microstrip patch antenna was designed. This antenna working frequency is 5.78GHz and 7.48GHz.It was designed for C band satellite application and fabricated using copper[2]. This paper deals with a microstrip antenna for 7 GHz frequency and it can be used for satellite applications. Different parameters were analysed and showed[3].Frequency selective surface method was used to design a microstrip patch antenna for x band at 10 GHz frequency. Gain and Efficiency were improved.[4]. Here, an antenna was designed for 5G applications especially for high quality online education. 26GHz is the resonant frequency in this paper.[5]. An antenna was designed for s, c, k band applications for communication purpose and several parameters were studied.[6]. Two new designs for s, k, x, c band applications are proposed in this study. For s, c band applications, the first design was presented. For k, x, c band applications, a second design was offered. The suggested paper is now divided into two more sections. The proposed two antenna designs and its specifications are shown in Section II. The simulation findings and calculations are revealed in section III, and the study is eventually closed in IV section.

2-1. THE PROPOSED ANTENNA 1'S CONSTRUCTION AND GEOMETRY

The below figure i.e., 1^{st} figure shows the front view of the proposed antenna one. The second figure is the ground structure of the proposed antenna 1. The suggested antenna is $28 \times 23 \text{ mm}^2$ in size. The height of this antenna is 1.6 mm. It is having triple bands and the -10 dB is the obtained return loss of this antenna.

DESIGN AND ANALYSIS OF HIGHLY ISOLATED MIMO ANTENNA FOR WIRELESS APPLICATIONS

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ABSTRACT - In this paper, the purpose of the five meta material unit cells in between the two T-shaped patch antennas is highlighted, and the isolation between those two patch antennas is increased .These two patch antennas are set with 0.7 cm spacing between them. The two T-shaped antennas are mounted on top of a 37 x 44 mm² FR4 substrate with a thickness of 0.035mm and a loss tangent of 0.019. The frequency of operation for these two antennas is 5.8GHz. This MIMO antenna can be utilized in a variety of wireless applications .Those are Wi-Fi, wireless local area networks, industrial, scientific, and medical applications, wireless power transfer as well as C band applications. Computer Simulation Technology (CST) software was used to simulate the results of the intended construction. The simulation results reveal that the insertion loss, diversity gain, envelope correlation coefficient, VSWR, efficiency, and return loss are all at 24dB, 9.99 dB, 0.0002, 1.7, 99%, and 18dB, respectively.

KEYWORDS - Insertion loss, Efficiency, Diversity Gain ,5.8GHZ , Envelope Correlation Coefficient , T – Shaped Stub

1 INTRODUCTION

Antenna Diversity factor is fully responsible for the MIMO antenna's biography. It's also known as the Spatial Diversity. It is extremely important in a variety of communication systems. As a result, it may be used with many antennas in a variety of ways, and antennas can simultaneously transmit and receive signals across the communication channel. Multiple antennas are known as MIMO antennas in today's generation. It is properly defined as the simultaneous transmission and reception of a signal .In general, any MIMO antenna has a strong mutual coupling, which reduces the performance and efficiency of that antenna while simultaneously increasing the insertion loss between those antennas. When insertion loss occurs between them, the signal is corrupted, and the isolation between those antenna elements is compromised. All of these flaws can be addressed in this work by employing appropriate methodologies and antenna technology. Meta material is a type of synthetic material that is extensively employed in today's antenna technologies. Copper, Gold, Silver, and other meta materials are among of the most common. Copper is utilized as a meta material in this paper because it has a positive refractive index of 0.238 and also it has low cost. This material enhances antenna characteristics such as bandwidth, efficiency, radiation pattern, gain, and so on. With our necessary frequency, it also dramatically reduces the size of the antenna. It also boosts the Envelope correlation coefficient, Diversity Gain, and Insertion Rate. The mutual coupling was reduced and the isolation of the MIMO antennas was increased as a result of those settings. The structure of T shaped patch antennas at 5.8 GHz can achieve all of these efficient criteria. Five meta material unit cells were positioned in between those antenna elements. All antenna parameters improved because of those cells. Finally, the suggested antenna is ideal for all 5.8GHz frequency applications, including Wi-Fi, wireless local area networks, industrial, scientific, and medical applications, as well as C band applications. The proposed paper is divided into four segments here .Segment I represents the all about MIMO antenna .Segment II presented the suggested MIMO antenna design and its numerous characteristics, segment III presented simulation results and calculations, and segment IV concluded the proposed paper .

2 THE PROPOSED ANTENNA'S CONSTRUCTION AND GEOMETRY

Figure 1 depicts the T-shaped patch antenna geometry concept. The proposed antenna is made out of FR4 material with $37x44 \text{ mm}^2$ It has a loss tangent of 0.019 due to its inexpensive cost, high tensile strength, and minimal water absorption. The characteristic impedence of these antennas is 50Ω .

PATIENT HEALTHCARE MONITORING IN QUARANTINE USING IOT

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ABSTRACT

The Internet of Things (IoT) is an online system. An IoT device that is used in multiple application fields and brings convenience to users' lifestyles. IOT-based health monitoring systems are typically used to collect temperature, heart rate, pulse rate, oxygen levels, and discomfort.Coronavirus (COVID19) is caused by the rapidly prevailing severe acute metastatic syndrome coronavirus 2 (SARSCoV2) worldwide. The clinical spectrum of SARSCoV2 disease (respiratory disease) varies from delicate to severe cases, with critical cases in the clinical environment and delicate cases requiring remote, early detection and observation.This project deals with some sensors connected to the Arduino Mega interface. The first module collects data from the patient's sensors such as temperature, heart rate, and pulse oxylevels. Sound sensor readings, accelerometer readings are displayed on the LCD display and are flexible enough to be analyzed in the Thingspeak cloud. Based on severity, a buzzer alert is sent to the nurse whenever the patient's condition is less severe, and a buzzer alert is sent to the doctor when the patient's condition is severe. Warning messages are sent via the GSM module.

KEYWORDS - Internet of Things (IOT), Arduino Mega 2560 micro controller, Temperature, heartbeatSensor,GSM, Internet Protocol (IP),Printed circuit board (PCB)).

SMART GARBAGE MONITORING & MANAGEMENT USING IOT

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ABSTRACT

Now a day's India generates tons of wastes annually. Our country faces major challenges associated with waste management. Traditional waste management system operates based on daily schedule which is highly inefficient and costly. The existing recycle bin has also proved its ineffectiveness in the public as people do not recycle their waste properly. With the development of Internet of Things (IoT) the traditional waste management system can be replaced with smart sensors embedded into the system to perform real time monitoring and allow for better waste management for clean India. In this paper, a system is introduced to manage waste in big cities effectively without having to monitor the parts 24×7 manually by using IoT based waste management system for collection of segregated waste from apartments in big cities and monitoring the level of waste inside bins and send notification to fertilizer and plastic recycle companies and municipal office to collect their respective materials. The proposed system is reliable, cost effective and can be easily implemented and also helps to provide natural fertilizers to farmer's for low cost and it also helps to metropolitan people to save time for cleaning.

Keywords: Arduino uno, NOdemcu, inductive proximity sensor, wet sensor, Ultrasonic Sensor, IR Sensor, OLED Display, LCD Display, Blynk App.

1.INTRODUCTION

Cities have been producing more rubbish in the recent two decades than they have in the previous two decades. According to studies conducted around the world, annual solid waste creation is predicted to increase over 3.40 billion tones by 2040, resulting in an estimated cost of \$645.5 billion in municipal trash management [1]. Many factors contribute to the difficulty of waste management in smart cities, such as population growth, population shifts from small to large cities, economic development, rising rates of consumption of goods, geographical location, system administration, improper waste collection and disposal, inefficient waste generation predictions, and a lack of smart technology. employed to aid in the management of municipal solid waste (MSWM)[2]. Improper waste management in cities causes significant economic and human life losses. For example, spontaneous fires have been documented in open garbage dumping yards located in congested regions of cities, resulting in significant economic and human life losses. It is also highlighted that any sort of trash that can easily catch fire, such as solid, liquid, or containerized gas, might result in injury, disease, economic loss, and environmental harm [2, 3]. The two most important variables that lead to the large-scale generation of garbage are (1) urban population growth and (2) average mean living standards. While these two elements must be controlled, it is also critical to develop an effective system, tactics, and procedures to support MSWM and other incidents in a smart city, such as early fire detection. It can only be done with the help of technological breakthroughs, and the Internet of Things (IoT) is one of those technologies. play a critical role in dealing with such situations IoT is not a single device or system; rather, it is a broad term that encompasses a wide range of physical and electrical appliances, modern vehicles, structures, and all of the technology we use on a daily basis. All of these gadgets and appliances are interconnected over the internet so that they may exchange data with one another, and they are classified as IoT. IoT allows us to control the operation of these devices remotely via a previously installed network infrastructure, allowing for a more direct integration of wirelessly controlled technologies into the actual environment.

Volume XI, demonstrates how an integrated physical system constructed with a mix of technical disciplines and utilizing the 20

Bandwidth Enhancement of Butterfly Shaped Microstrip Patch Antenna for Wireless Applications

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ABSTRACT

In this paper, we proposed an antenna butterfly shaped patch antenna for 6.1 GHz applications. This 6.1 GHz frequency can be used for commercial WLAN applications which can be used in home and office purposes. The overall size of the antenna is $20x14x1.6 \text{ mm}^3$ which uses FR-4 epoxy material as substrate with 4.4 as dielectric constant and 0.02 loss tangent. This antenna is driven by microstrip feed line of 50Ω impedance matching. The height of the substrate used is 1.6mm. Impedance bandwidth of the proposed antenna is 280 MHz form lower frequency of 5.98 GHz to higher frequency of 6.27 GHz with 6.1 GHz as center frequency. The proposed antenna has the return loss of -24 dB and with voltage standing wave ratio of 1.1 dB. Gain and directivity of the proposed antenna is 4 dB and 5.5 dB. The antenna is designed and simulated using HFSS (High Frequency Structural Simulator) software tool and the simulated results are shown in term of return loss, VSWR, radiation pattern, field intensities, surface current distribution and gain.

Keywords: Butterfly shaped patch, Return loss, VSWR, Radiation pattern, Directivity, Field intensities, Gain.

1. INTRODUCTION

Due to their low profile and conformal structure, patch antenna is widely used for the communication with the short distance. These patch antennas come in different novel structures with compact size. A club shaped patch antenna is shown in [1] which uses defected ground structure technique to improve the antenna parameters. This antenna is designed for WLAN applications. A planar monopole antenna is presented in [2] with modified circular patch which is designed to operate in ultra-wideband (UWB) frequency with omnidirectional radiation pattern. The initially designed circular patch is truncated to achieve the UWB frequency. An L-shaped patch antenna which uses parasitic elements to enhance the bandwidth is shown in [3] with resonant frequency of 5.8 GHz for WLAN applications. These parasitic elements act as half-wavelength resonators.

In [4], KueiJih Lu et al. proposed an antenna which consist of two pairs of parasitic spirals and two layers of FR4 substrate of thickness of 1.4 mm each which makes the total thickness of 2.8 mm. The

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SMART SOLUTION FOR BIKE RIDERS USING IOT

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ABSTRACT - This proposal proposes an IoT-based smart helmet with a motorbike unit for improved safety. This project's primary goal is to prevent motorcycle accidents. The project is divided into two sections: the helmet unit (HU) and the motorcycle unit (MU). The radio frequency is used by both units to communicate. The rider's pulse rate, the amount of alcohol in his breath, and the severity of vibration are all measured by sensors in the helmet unit. The sensors on MU ensure that the rider is correctly seated, is not speeding, and is riding safely. When an accident occurs, the MU turns off the ignition and sends a message to the emergency contacts with the location. The rider will not be able to start if he or she is inebriated and not wearing a helmet. The current scenario is to take precautions for bike drivers who may lose their lives as a result of inebriation and failure to wear a helmet. Smart helmet with automatic alcohol testing, accident detection, and location data transmission technology.

1. INTRODUCTION

India has a larger population, which means there is more traffic, which increases the risk of accidents. The majority of motorcycle accidents occur; to reduce these accidents, we must wear helmets, although most individuals do not do so. According to the worldwide status report and the road safety 2020 study, 1.35 million people died in traffic accidents. 90% of the money came from developing countries. these casualties According to the report ROAD ACCIDENTS IN INDIA – 2020, released by the Ministry of Road Transport and Highways. Two-wheeler

accidents account for 36.8% of all incidents, making motorcycles the most dangerous mode of transportation. The number of accidents in 2020 is up 5.5 percent from 2019. In the year 2020, 51,650 individuals will have died in motorcycle accidents. In 2019, 48,324 persons were killed in motorcycle accidents, up 8.1 percent from the previous year. People aged 20 to 50 made up 65.7 percent of the total number of fatalities. This age bracket is also known as the working age bracket. In 2019, 42,678 people died as a result of not wearing a helmet. By 2020, the number had risen to 47,515 people. Over speeding claimed the lives of 1,12,456 individuals in 2020. In 2020, 5,122 individuals will have perished as a result of drunk driving accidents. Despite the authorities' best efforts, motorcycle accidents are becoming more common by the day.

The project's major goal is to reduce the number of accidents by making riders aware of any risk that could lead to an accident. So, we devised a helmet that has all of the necessary components; without it, or even if the rider has a breath of alcohol, the rider will be unable to start the motor Bike.

2 LITERATURE SURVEY

The intelligent bike system in this paper [1] monitors if the rider is wearing a helmet. While diving, it also checks for non-alcoholic breath. The helmet has an RF transmitter, and the bike has an RF receiver. A switch is employed to ensure that the motor bike wears his or her helmet. The ON condition of the switch supplied in the helmet ensures optimal helmet placement. An alcohol sensor is placed near the mouth of the person to detect the
VOICE CONTROL ROBOT FOR HOME APPLICATIONS USING ARDUINO

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Abstract—Robotics is a multidisciplinary field that combines computer science and engineering. Robotics is the study of the design, construction, operation, and application of robots. The goal of robotics is to create machines that can assist and help humans.

Robotic systems have a variety of effectors and receptors that influence their capabilities. As a result, describing robot tasks in a human-readable manner while remaining strict and abstracting the hardware limitations on the one hand and enabling straightforward transformation into robot actions on the other has proven difficult. In this paper, we propose a method for specifying tasks in terms of abstract object-level relations. This approach necessitates the inclusion of manipulation primitives that modify those relationships by influencing object parameters. To focus the research in this paper, we will concentrate on one of the most fundamental robot skills: grasping. Using the embodied agent-based methodology, we decompose the robot control system, define a set of required behaviours, and express the skill as a sequence of those behaviours. We created a formal specification of the introduced concept to enable future automatic translation from specification to code. We propose a robot that will assist people with disabilities and the elderly.

Keywords: Arduino Uno, L293d, dc motors, Hc-05, servo motor SG-90.

Introduction: Almost everyone is aware of the concept of robots and their emergence as they become more involved in our daily lives. Special subjects such as threat detection and bomb disposal have recently gained a lot of attention. Many studies on this topic are examined in this paper, and to that end, a mobile robot with a wirelessly controlled arm is designed and tested. The main purpose of mobile robots is to facilitate human life and to create a healthier work opportunity in risky areas for people, which have been designed in NASA space researches.

Robots are increasingly being integrated into working tasks to replace humans, particularly in repetitive tasks..In general, robotics is divided into two categories: industrial robotics and service robotics. A service robot is defined by the International Federation of Robotics (IFR) as a robot that operates semi- or fully autonomously to perform services useful to the well-being of humans and equipment, excluding manufacturing operations. These mobile robots are now used in a variety of applications such as the office, military tasks, hospital operations, hazardous environments, and agriculture. Furthermore, it may be difficult for the worker who must pick and place something that may affect it. Consider the following: Chemistry that cannot be picked by humans, military applications such as defusing bombs that required a robot to pick and place the bomb somewhere, and users who required a K. HariPrem, G. Neeraja, J. Pravallika, K. Venkat Sai, UG Students, PSCMR CET

robot to pick and place an item while sitting, among other things. As a result, a locomotion robot can be replaced. Work done by a human. Wheeled robots move around the ground by using motorized wheels to propel themselves. This design is simpler than using treads or legs, and they are easier to design, build, and programmers for movement by using wheels.

A differential wheeled robot is a mobile robot with two independently driven wheels on either side of the robot body. It can thus change its course by varying it does not require an additional steering motion because of the relative rate of rotation of its wheels. A differentially steered robot is one in which both wheels rotate at different rates (which can be specified during programming) because the robot can only move forward, backward, right, and left. Both wheels will be powered in a differential steered system.

Wheeled robots are widely used in robotics because their motion is simple to programmer and control. Almost all consumer robots on the market today rely on them due to their low cost and simplicity. The majority of wheeled robots use differential steering, which uses independently driven wheels to move. They can rotate each wheel at a different speed to change direction. There may be additional wheels that are not powered by a motor; these additional wheels help keep the vehicle balanced.



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AUTOMATIC CLASSROOM ATTENDANCE SYSTEM

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ABSTRACT: The Traditional attendance system includes Data manipulation, possible human errors, Time taking process and it is Ineffective and Outdated. To avoid these problems they are using biometric and RFID technology there are some drawbacks in that. So we introduced an Automatic Classroom Attendance System, it is easy to manage the attendance of the students in schools and colleges. This System is based on face detection and recognition, it detects and recognizes the students face and generates attendance to that particular student and whenever the student goes out from the class they noted as absent and it takes clicks on every period .When compared to traditional attendance system this system Records all the data automatically and Provides accurate results. In this proposed system the attendance can be monitored automatically. This system will reduce a lot of manual work of education institutions.

INTRODUCTION

As we have seen in many schools and colleges that faculty members are facing the problem of proxy attendance, maintaining all hand written document of student attendance of each batch/class every day. It is very difficult task for them.

AMULTIMODELDATAFUSIONTECHNIQUEFOR HEARTBEATDETECTIONINWERARABLEIOTSENSORS

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ABSTRACT

Patient vital signs have been widely recognized as an early indicator of catastrophic patient decline in the hospital. This has led to the widespread implementation of Rapid Response Teams (RRTs) and Early Warning Score (EWS) systems within hospitals. However, in order to both RRTs and EWS systems to be most effective, it is critical that patient vital signs are recorded accurately and often. However, despite findings that of the four major vital signs respiratory rate is the most crucial in predicting catastrophic decline, it is the most often not recorded.

One possible solution to this is to develop a device that is capable of noninvasively monitoring respiratory rate. Two prime candidates for this are the photoplethymsograph and electrocardiogram. Both the PPG and ECG are widely used to measure heart rate in the hospital and because the heart rate is modulated in multiple ways by the respiratory rate, it is possible to extract a respiratory rate estimate from both the PPG and ECG.

However, the overall modulations of the respiratory rate on the PPG and ECG are small meaning that often algorithms that are designed to detect them cannot tell when these modulations are actually present or not. This research presents a method for detecting when the respiratory modulations can be extracted from the PPG and ECG using respiratory quality indices (RQIs) which are implemented after extraction of the respiratory rate modulations but before the respiratory rate is estimated.

This research was performed using three different datasets of varying data quality. The first dataset was the CapnoBase dataset which contains PPG, ECG, and capnography for anesthetized patients. This dataset is considered the "gold standard"

ADAPTIVE HEADLIGHT SYSYTEM FOR AUTOMOBILES

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Abstract

The purpose of this project was done to focus on the design and working of an Arduino based Adaptive Headlight System (AHS) for automobile safety. The highest fatal accidents occur on the curved road at night time. In maximum cases, the recognition of objects in the traffic zone plays an important role. These facts point to the necessity of the role of automobile adaptive headlight systems. The dazzling headlights also contribute to recognition of objects due to temporary vision loss. Components that are easily available in the market are suitable for adaptive headlight system. The system is designed to receive input from the sensors and manipulate the data which changes the switching of connected headlights. Also, the headlights brightness is automatically varied to prevent glare on other drivers.

INTRODUCTION

A large number of fatal injuries occur after nightfall. A sound physiological explanation for this is advanced based on the poor temporal characteristics of rod photoreceptors. It is argued that processing information based on low brightness, dull targets is much slower than that for high contrast bright targets [2]. The main aim of this project is to develop an Adaptive Headlight System (AHS) also called an Adaptive Front-lighting System (AFS), to provide better illumination in the roads having steep turns and curved roads, particularly during night time. Adaptive headlights are an active safety feature designed to make driving in the dark or in low-light conditions safer by increasing visibility around curves and over hills. When driving around a curve within the road, normal headlights continue to shine straight ahead, illuminating the facet of the road and the actual path remains dark.

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Abstract—

For the detection and prevention of disease of plants from getting spread, this paper proposed a system using raspberry PI. For the image analysis, Conventional Neural Networks was used. It has many advantages for the use in big farms of crops and thus it automatically detects signs of disease whenever they appear on leaves of the plant. In pharmaceutical research of leaf disease detection is necessary and important topic for research because it has advantages in monitoring crops in field at the form and thus it automatically detect symptoms of disease by image processing by CNN algorithm. The term disease means the type of damage to the plants. This paper provides the best method for detection of plant diseases using image processing and alerting about the disease caused by sending to IoT Server and displaying the name of the disease and precautions on the monitor display of the owner of the system.. It will reduce the cost required for the pesticides and other products. This will lead to increase in productivity of the farming.in parallel proposed system also monitor the environment parameters in the field and also controls the watering based on moisture content.

. Index Terms-Image Processing, IoT, Raspberry Pi, Sensors, Python.

Covid-19 detection through cough sounds by using CNN

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ABSTRACT

A lot of interest has been generated in the field of detecting Covid-19 due to its high spreading rate. These medical techniques of detecting COVID 19, like X-ray, CT scan, and Ultrasound, necessitate one-on-one contact and take a protracted time to complete. It also costs plenty of cash. So, we propose a rapid detection method of Covid-19 through cough sound samples using Convolution Neural Network. There are three essential components to the proposed technique such steps (a) extracting audio features from cough samples or Mel images, (b) creating a feature model with extracted features, and (c) analyzing the feature model. A deep neural network (CNN) was accustomed classify cough sound samples. The cough samples from healthy and COVID infected individuals are accustomed to evaluating the model's performance.

KEYWORDS: COVID 19, Audio features, Mel spectrogram, CNN, Machine learning.

I.INTRODUCTION

Coronavirus (COVID-19) infection is an transmissible disease due to the SARS-CoV-2 virus. Mostly the humans inflamed with this virus will experience moderate to mild symptoms like dry cough, fever, and weariness, a few may experience different signs and symptoms such as lack of flavor or smell, cerebral pain, aches, and pains, etc. However, a few become critically sick and require scientific attention. The modern-day COVID-19 pandemic has impacted the world with over 510,270,667 confirmed inflamed cases and over 6,233,526 deaths so far (as of 2d May 2022) [15]. When an inflamed man or woman speaks, breathes, coughs, or sneezes the virus can spread in microscopic liquid particles (Respiratory droplets or aerosols) from their mouth or nose. Testing has come to be one of the maximum tremendous prerequisites for the higher remedy strategy, selection isolation activities, project of beds and medicines, etc.

The most popular means of diagnosing corona patients is the RTPCR (Reverse Transcription Polymerase Chain Reaction) test, which operates on a small portion of viral RNA taken from a nasal swab, amplified, and quantified during this test, and virus identification is revealed visually using a fluorescent dye for testing. Unfortunately, the RT-PCR test is time-consuming and laborious because of manual processing and takes up until 48 hours to get results with an accuracy of 63 percent [3]. False-positive testing cases have also been reported in several investigations [1]. Furthermore, there is a shortage of testing kits to meet market demand, which obstructs disease prevention activities. The paper will illustrate how deep learning algorithms can overcome these shortcomings.

X-ray, CT, and Ultrasound are the common medical imaging modalities that might be used to diagnose and examine the severity of an infection. Each modality has its benefits and barriers so it will be mentioned in later sections. X-ray imaging is a low-price and widely used approach for detecting lung-related diseases or infections, and it may also additionally be used to sense COVID-19 infection [4]. It can be processed with the use of primary techniques, which lessens the imaging time and lowers the threat of the virus spreading. When evaluating with different imaging models it is economical and non-invasive, it produces much less radiation exposure than a CT scan. Despite its benefits, X- Ray pictures do not display any fluctuations in the starting levels of the virus. In any case, if the infection advances, COVID-19 slowly seems like an everyday one-sided inconsistent invasion which includes the mid-region and top or bottom region of the lungs, every so often with authentication of a combination. This should result in a fake analysis of ailment with early and mild symptoms [13].

The CT scan (Computed Tomography) based detection method is lengthened and physical, hand-operated process. CT scanning machinery is also difficult to use for COVID patients because the patients must frequently be transferred to the CT room, the machinery should be conscientiously maintained and radiation exposure is probable [7]. AlthoughCT is not proposed as a dominant diagnostic tool, it can be used as a supporting tool in the assessment of COVID-19 conditions [6]. Ultrasound imaging is also being suggested as a device for COVID-19 person's lung condition monitoring because it can be used at the bedside without any risk of spreading infection and can diagnose COVID-19lung conditions [5].

In the proposed method we use cough sounds to get results more accurately and precisely than existing methods. To achieve that, A dataset is created by using covid and non-covid cough recordings. All these samples are trained by the

Deep Learning based efficient digit recognition system

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ABSTRACT

Character recognition through handwritten documents images has gotten more interest in the pattern recognition community, due to its associated real time applications. For handwritten digit recognition, depending on a classification technique character recognition and extraction of features are performed. For the recognition of handwritten digits, previous techniques lacked high accuracy and processing speed. The proposed model aims to make the route to digitization more obvious by delivering high accuracy and speed. Handwritten digits are recognised using computational methods. For handwritten digit recognition, the current study used a neural network using convolutions as a classifier, MNIST as a set of data with appropriate training and assessment criteria, & an ensemble model in combine with data augmentation technique. The approach achieves a level of accuracy of 99.70%, which is greater than previously presented techniques.

Keywords: MNIST handwritten digit recognition dataset, CNN, Adam Optimizer, Data augmentation.

1. INTRODUCTION

Artificial Intellect (AI) is the emulation of human intelligence by machines, and these cognitive processes are linked to the ability to learn, reasoning, identity, and detect [1]. Handwritten digit recognition is a difficult subject that academics have been studying with the use of machine learning methods. HDR is designed to accept and understand handwritten data. In the form of images or documentation extraction of text from genuine photographs, but in the other side, a complex task, because of the vast differences-font size and shape, surface, and colour background knowledge, among other things. Handwritten digit recognition is frequently working in a range of innovation domains, including the finance company actual evidence, fully automated registration plate identification, the mailing address confirmation from the inside of

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Abstract:

Sustainable operation of battery powered wireless embedded systems (such as sensor nodes) is a key challenge, and considerable research effort has been devoted to energy optimization of such systems. Environmental energy harvesting, in particular solar based, has emerged as a viable technique to supplement battery supplies. However, designing an efficient solar harvesting system to realize the potential benefits of energy harvesting requires an in-depth understanding of several factors. For example, solar energy supply is highly time varying and may not always be sufficient to power the embedded system. Harvesting components, such as solar panels, and energy storage elements, such as batteries or ultracapacitors, have different voltage-current characteristics, which must be matched to each other as well as the energy requirements of the system to maximize harvesting efficiency. Further, battery non- idealities, such as self-discharge and round-trip efficiency, directly affect energy usage and storage decisions. The ability of the system to modulate its power consumption by selectively deactivating its sub-components also impacts the overall power management architecture. This paper describes key issues and tradeoffs which arise in the design of solar energy harvesting, wireless embedded systems and presents the design, implementation, and performance evaluation of Heliomote, our prototype that addresses several of these issues. Experimental results demonstrate that Heliomote, which behaves as a plug-in to the Berkeley/Crossbow motes and autonomously manages energy harvesting and storage, enables near-perpetual, harvesting aware operation of the sensor node.

Keywords:

Solar Harvesting, Embedded Systems and Design Approaches

Introduction:

The application space for wireless nerve networks is governed by a long-life ban, as the cost of physical use of sensory nodes often exceeds the cost of the nodes themselves. Energy is a limiting factor in maximizing profits (months to years) throughout the life of a program. Fortunately, a promising way to prevent this network power problem is emerging - harvesting natural energy. Utilizing ubiquitous power sources in the workplace of the sensor nodes raises the possibility of endless life. Achieving this (by harvesting a conscious design) represents a new boundary in the natural advancement of energy-enhancing strategies, starting with low power construction [1], switching to energy-conscious design [2], and more recently, a battery-aware design [3].

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AUTONOMOUS VEHICLE USING COMPUTER VISION

A Asha Sai Lakshmi S Pradeep Kumar Dr. A Ravi A Alekhya G Anjali B Naveen Kumar

Abstract

Computer Vision in autonomous vehicles can lead to the designing and development of advanced and next-generation vehicles which can overcome driving obstacles while keeping passengers safe. Such vehicles can transport passengers to their destination, eliminating human involvement. The basic concept is taken from line following robot and Raspberry pi it is enhanced by image processing algorithms. The raspberry pi board is used to process image processing algorithms using open CV python coding, and ultrasonic sensor is also used to find obstacles. The vehicle moves on the road-based and Ultimately and on color lines identification. Ultimately the efficient autonomous vehicles can be designed using computer vision techniques. This method is used to reduce human involvement and to traffic collisions, to avoid major accidents which are made by human mistakes. If an obstacle may present on road the vehicle measures the obstacle distance with help of computer vision. Then automatically vehicle moves on the other side by the identification of white lanes which are present on roads the vehicle moves only on the black area on road. When the vehicle reaches white lane the vehicle automatically stops and takes direction on road.

Keywords—Artificial intelligence, Computer vision, Image processing, Object detection.

1. INTRODUCTION

Now-a-days in the field of automobiles, the technological improvement is based on Autonomous vehicles and peoples are using their own vehicles due to inconvenience of public transportation. Unfortunately, the traffic problem has been created, due to increment of heavy vehicles. To overcome this traffic problem, traffic rules are established. For that purpose we require an efficient vehicle to enhance safety and traffic less transportation those are Autonomous vehicles. Autonomous vehicle is the one and only most important innovation in the automotive industry. If we can improve this technology, we can control the most of the traffic problems like accidents and thus this result on both every individual and in the society. Due to human mistakes maximum accidents will be occurred. However autonomous vehicles are still in their infancy stage and cannot be deployed on urban traffic-filled roads for some time. Because even a minor defect in designing or development of this vehicle can cause fatal accidents and life risks. Researchers and professionals are applying computer vision technology to autonomous vehicles to make it safer for passengers and pedestrians as well. The technology can be used in the following manner in an autonomous vehicle. Autonomous vehicle will consist of up to 75% of the cars on the roads. A huge number of individuals have lost their lives in the previous 10 years because of heavy traffic accidents. The purpose of this project is to create a safe self-driving vehicle that could help huge number of people every year. Practically all the .0traffic accidents are occurred by human faults. Unfortunately, according to statistical analysis, in the future 10 years the number of lives lost each year will likely be doubled. To avoid such type of problems we are moving towards Autonomous vehicles.

2. LITERATURE REVIEW

According to research every year, 1.35 million people are killed on roadways around the world. Every day, almost 3,700 people are killed globally in road traffic crashes involving cars, buses, motorcycles, bicycles, trucks, or pedestrians. Our project mainly focuses on automatic vehicles. We have compared our vehicle with different types of vehicles:

A. Use of Computer Vision for White Line Detection for Robotic Applications: According to the paper [1], The automatic vehicles are still not implemented they just implemented a vehicle which is capable to travel in a grassyarea with the help of white line detection for this implementation they used the open computer vision with the python and, image processing with white line detection to recognize the white line detection process, task by the vehicle they used various methods of image processing such as color space, image filtering, blurring, histogram, equalizing, edge detection etc. For this process they used the pre-recorded video and a camera attached to the vehicle. For the detection of the white line, they placed some objects to know whether the camera implemented by the image processing have the capacity to.

B. Ways for Improving Efficiency of Computer Vision for Autonomous Vehicles and Driver Assistance Systems:

IOT BASED ACCIDENT PREVENTION SYSTEM

G.M.G.MADHURI^[1], SK.SHAHEZ^[2], Y.JAYA PRAKASH^[3], G.SAI JAYASRI^[4], P.NAGA VISHNU VARDHAN REDDY^[5], K. MOSES DIVAVARAM^[6] Associate Professor ^[1] Department of Electronics and Communication Engineering, PSCMR College of Engineering and Technology Vijayawada, Andhra Pradesh. ^{[2] [3] [4] [5] [6]}

ABSTRACT

Recent surveys states that, the increase in vehicles speed is one of the major constraints for the causes of road accidents. In this project, we mainly focus on the systems implemented in order to avoid collisions. In this system avoidance of collision is achieved by designing an automatic obstacle alerts in voice format. By our proposed solution the collisions due to rash driving and the driver's alcohol consumption state can be detected. These both can be achieved by monitoring the surrounding with the help of ultrasonic sensor and alcohol sensor. The rash driving is determined by the ultrasonic sensor and similarly the alcohol detection of the driver is determined by the MQ3 sensor, then it will atomically play the voice alerts. The proposed systemalso equipped with crash sensor and accelerometer sensors to detect the accidents then, the vehicles GPS coordinates will generate and SMS will be sent to the nearest police station, hospital and family members respectively. Mainly our proposed idea will help the driver whenhe pays less attention to the driving.

I. INTRODUCTION

In the present scenario, the numbers of accidents happening in our surroundings are increasing day by day. This is becoming a great challenge for the people living in the country. The day begins with the newspaper that which at least contain a couple of headlines about the road accidents. The deaths occur in our society are mostly about the road accidents. Morethan 1.51 million fatalities occurred in 2018. An increase of 3,500 deaths occurred when compared to 2017. According to the latest accident report most of the accidents happen in the states like UP, Tamil Nadu, Maharashtra. The report declared that around 2.4% has been increased every year. The count of the deaths occurred because of accidents is more than the number of soldiers died in the war fields. The accidents that are happening in our country have many reasons such as less road quality maintenance, improper constructions of the bridges, overcrowding on the busy lanes and many other. Apart from these the under aged people according to the government traffic regulations are undergoing many accidents. The youngsters involves in rash driving, Drunken driving.

A COMPACT HIGH FREQUENCY ULTRA WIDE BAND ANTENNA FOR C, X, Ku BANDS

Dr. A. Ravi¹, B. PRAVEEN KITTI², SHAIK KHAMARJAHAN³, SELAM KALEEM⁴, SIMRAAN MOHAMMED⁵, B.V. JAYA RAMI REDDY⁶ ¹Head of the department, ECE Department, PSCMRCET, Vijayawada, AP, INDIA ²Associate Professor, ECE Department, PSCMRCET, Vijayawada, AP, INDIA ^{3,4,5,6}Student, ECE Department, PSCMRCET, Vijayawada, AP, INDIA

ABSTRACT: A compact and novel dual band UWB antenna with time domain characteristics is presented. A tapered microstrip fed circular radiating patch along with a novel semicircular defected ground structure produce -10dB bandwidth. The proposed antenna is a miniature size of 16X21mm² and is printed on FR-4 substrate with high frequency from 4.15 – 18.37 GHz which is suitable for C band X band and ku band applications. The proposed antenna exhibits a uniform gain of 1dBi, return loss of -14.79 at 5GHz, -17.53 at 6.9 GHz, -18.322 at 8 GHz, -24.06 at 10.2 GHz, -12.17 at 13.5, -18.54 at 16 GHz and the peak radiation efficiency is 98%.

I INTRODUCTION:

In 2016, a compact microstrip fed UWB antenna with dual band notched characteristics is presented. The design is done by elliptical UWB patch antenna with arc shaped ground plane. The UWB antenna works from 2.86GHz- 14.9GHz with two notch band properties in Wimax (3.1GHz – 4.8GHz) and X band satellite(9.6GHz – 11.2GHz). The size of the antenna is from 32X38 mm². The single band function of the UWB antenna is mostly used for WLAN. There are four types of UWB antennas. One is the single band notched UWB antenna, second one is dual band notched UWB antenna and the third one is multiple band notched UWB antenna. In addition, all above works are exploit to notch only low frequency notched bands like WiMAX, WLAN, and down link of X-bands. Ziqiang Xu [25] has designed a UWB Monopole Antenna with Dual Notched Bands Using One Modified Electromagnetic-Bandgap Structure. The antenna works at the frequency of 3.5GHz – 5.5GHz. it is most widely used in Wimax and wireless local area network (WLAN). The size of the antenna is 38X40 mm².

In this paper, The proposed antenna is designed with a symmetrical C-structured high frequency X-bands 4.15GHz - 18.37GHz by using HFSS Software. The advantages of proposed antenna are:

Compact size 16X21 mm²

A Peak radiation efficiency up to 98%.

Stable radiation patterns, uniform gain.

A COMPACT HIGH FREQUENCY ULTRA WIDE BAND ANTENNA FOR C, X, Ku BANDS

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Stable radiation patterns, uniform gain.

Metamaterial-Based Compact Antenna With Defected Ground Structure For Wireless Communications

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Abstract- Antenna is an evergreen subject of research in this paper due to its ever- increasing demand in the modern era of the communication. Metamaterial antenna is the theme of this article. The term meta which comes from the Greek word "beyond," refers to materials that have characteristics that go beyond those of traditional materials. A metamaterial structure unit cell with a defective ground structure and a meander line is studied. Here, the orientation that produces low-frequency resonance is considered. An integral-based solver simulation software called ANSYS was used to simulate this antenna. A meander line running parallel to the unit cell antenna is then loaded to the split bearing side and brings the two opposing sides together. The compact dimension of the antenna is $21 \times 18 \times 1.6 \text{ mm}^3$ and printed on FR4_epoxy. The intended antenna has been implemented and tested. Experimental results reveal that the modified design operates at a partial bandwidth of 0.1 dB from 3.76 to 3.84 GHz which is suitable for S Band. The proposed antenna exhibits a uniform gain of 3.18 dBi and return loss of - 26.90 dB at 3GHz is realized.

Keywords- Meander line, Compact antenna, Split ring resonator (SRR), Defected ground structure.

I. INTRODUCTION:

One of the most difficult tasks for current wireless communication devices is to provide more functionality in a smaller package. As a result, the space available in these devices for antenna elements is limited. Next-generation technologies will also evolve micro wireless devices for IoT, smart embedded applications. As a result, small antenna design will have a significant impact on these applications in the near future. A lot of procedures till now are proposed, cutting various shaped slots on the patch is one of the procedures used, Low-frequency resonance is caused by this. An E-shaped coupled edge resonator (ECER) is produced using an E-shaped open slot and a rectangular strip Another experiment To trigger and control low frequency resonances, the lengths of two symmetrical L-shaped and U-shaped slots on the patch were used. The ground's left and right sides are cut into two equally formed slots sides in another literature, providing extra resonance at low frequencies. On the ground plane, To reduce the size, an open-ended meandering shaped slit is cut. To achieve compactness, a specific form is cut and slots are loaded in some designs. For size reduction, Inside a broad split ring, a closed feed ring is inserted. The inner closed ring is also shortened to achieve wideband properties. Metamaterial has different types of structures in that we have placed a concentric complementary split ring resonator (CSRR) in the ground.

Details Preserving Multi-Exposure UsingPas Technique

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ABSTRACT

Due to the development of High Dynamic Range Images, multi-exposure fusion has received a lot of attention in recent years. High dynamic range (HDR) imaging allows for the preservation of natural scenes in the same way that human observers perceive them. Due to the wide dynamic range of natural scenes, significant details in images may be lost when using standard low dynamic range (LDR) capture/display devices. This study proposes an efficient multi-exposure fusion (MEF) approach with a simple yet effective weight extraction method based on principal component analysis, adaptive well-exposedness, and saliency maps to minimise information loss and produce high quality HDRlike images for LDR screens. These weight maps are then refined using a guided filter, and the fusion is performed using a pyramidal decomposition. Experiment results show that the proposed method produces very strong statistical and visual results when compared to existing techniques.

IndexTerms—Image Fusion, PCA, Adaptive Well Exposedness, Saliency Map, Dual Pyramid.

1. INTRODUCTION

Multi-exposure image fusion, in general, refers to the process of combining multiple images with complementary information into a single image with optimal information. High dynamic range (HDR) technology aims to produce high-quality images that are comparable to human perception. By proposing a multi-exposure image fusion scheme, we hope to acquire significant HDR images and improve the subjective and objective evaluation of the fusion effect. MEF's primary goal is to keep the most informative parts of each exposure image by extracting weight maps and then blending them into a single HDRlike image [1]. A weight map extraction scheme based on PCA, adaptive well exposure, and saliency map is proposed. The input stack is fused using the Gaussian pyramid of weight maps and the Laplacian pyramid of exposures. We present a method for more easily incorporating desired image qualities, particularly those relevantfor combining different exposures. In this paper, we present a new MEF algorithm that focuses on the design of an efficient and effective weight function. The weight is obtained as a function of pixel values within an image in the set of multi-exposure images in the majority of conventional pixel-wise MEF methods. In other words, existing methods typically apply the same rule to every image in the set, whereas our method employs an adaptive rule across all images. We define three weight functions that may reflect the quality of pixels. The first is to represent the pixel quality in terms of an input image's overall brightness and that of neighbouring exposure images. The weight is intended to be large in the bright areas of the underexposed image and small in the bright areas of the overexposed image. The second weight reflects a pixel's importance when its value is in a range with a relatively large global gradient when compared to other exposure images. The total weight is the sum of these three weights. Because of the simple weight function, the proposed method requires little computational complexity while producing visually appealing results and receiving high scores on an image quality measure. Multiexposure fusion (MEF) is a popular method for achieving high dynamic range imaging. The selection of features for fusion weight calculation is critical to MEF's performance.

The MEF method generates the weight map by combining three image quality measures (PCA, Adaptive well exposedness, and saliency map) and fusing the images in an efficient multi-resolution framework. A camera's dynamic range is usually less than that of most of the scenes we want to capture. Whatever a camera's bit-depth is, it is considered to have a relatively low dynamic range (LDR) when compared to scenes with a high dynamic range (HDR). As a result, the most common method for capturing such HDR scenes with an LDR camera is to take several pictures while changing the exposure time from short to long [2] and merge to an HDR one.

To display the synthesised HDR image on an LDR display device, however, we need a tone-mapping process to compress the HDR into the LDR [3,4]. When we only have LDR displays as targets, we can directly synthesise a tone-mapped-like LDR image from the multi-exposure images. The multi-exposure image Fusion (MEF) algorithm is commonly used for this purpose. It defines a weight map for each of the multi-exposure images and synthesises a final tone-mapped-like image as a weighted sum of the images. The model incorporates recursive downsampling and processing, and halo effects are significantly reduced. A MEF algorithm based on image linear embeddings and watershed masking is developed in a recent study by Ulucan et al [5]. As a result, the most important task in this approach is determining the appropriate weight maps. Burt et al. [6] used Laplacian pyramid

Image Denoising using RNN

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Abstract: -

This paper introduces a novel denoising approach Image denoising is one of the fundamental challenges in the field of image processing and computer vision. Our main aim of the project is to get a complete noiseless image with high accuracy and less time. So, in our project we are proposing an effective denoising technique using RNN (Recurrent neural network) for fixed pattern noisy images which may reduce the usage of number of auto encoders. Here, we are passing images into the recurrent neural networks as pixel information in the form of a 3D coordinate system. RNN doesn't migrate the information from one node to another node until it gets its basic requirements. As we are using a single auto encoder, it will reduce noise as well as time complexity. The statistical analysis is going to be observed by using the following metric considerations, namely PSNR (Peak signal to noise ratio), and Entropy. From this research work we are going to get a complete noiseless image

Keywords: RNN, Flatten 2D layers, Relu, Adam MSE, PSNR and Entropy

Introduction:

Noise is typically defined as a random variation in brightness or colour information. The presence of noise in an image might be additive or multiplicative. In the Additive Noise Model, an additive noise signal is added to the original signal to produce a corrupted noisy signal. Similarly, the Multiplicative Noise Model multiplies the original signal by the noise signal. There are different types of noises namely Gaussian noise, salt and pepper noise, poison noise, impulse noise, and speckle noise

- **Gaussian Noise:** It is commonly known that Gaussian noise is statistical noise with a probability density function (PDF) equal to the normal distribution. Gaussian noise has a uniform distribution throughout the signal.
- Salt and Pepper Noise: A type of noise commonly seen in photographs is salt and pepper noise. It manifests as white and black pixels that appear at random intervals. Errors in data transfer because this form of noise to appear.
- **Poison Noise:**Poisson noise is produced by the image detectors and recorders nonlinear responses. This type of noise is determined by the image data
- **Speckle Noise:**Unlike Gaussian or Salt and Pepper noise, speckle noise is multiplicative noise. This type of noise can be found in a wide range of systems, including synthetic aperture radar (SAR) images, and ultrasound imaging.

The Denoising concept is classical chapter in Image processing, In Ancient, before use of Emerging Technologies in Image processing, there exists some filters to smoothen the images and increase the sharpness in the pixels of an images. As Image processing and Denoising concept became trend with emerging tools and techniques Introduction of Machine Learning in Image processing is started with minor simulations which changes the Properties and Metrics of the Images. The Machine Learning consists of three different types of Algorithms like Supervised Machine Learning Algorithm, Unsupervised Machine Learning algorithm and Reinforcement Machine Learning algorithm. Here by In Image Processing Mostly till now Achieved the observations and change in properties in Images by Super vised Machine Learning Algorithms to achieve the good Accuracy and Time Complexity with smooth and Easy Simulation. Till now the Image denoising using Machine Learning done by using Auto Encoders and CNN (Convolution Neural Networks). Neural Networks are similar and imitates the functionality of human Brain. The Neural Networks consists of nodes and links were connected to each other. In this research work the denoising concept is going to implement with RNN (Recurrent Neural Network) and Single Auto Encoder.

Motivation of the Project:Image denoising is always a challenging task in the field of computer vision and in image processing. Image denoising is the process of removing noise from the original image. Addition of noise will cause loss of information in an image. So, to get noiseless image, this paper is going to use effective denoising technique. Image denoising plays an important role in a wide range of applications. There are many denoising techniques existing, but failed to get an accurate output. The existing method proposed an encoder decoder model with direct attention, which is capable of denoising and reconstruct highly corrupted images. This model consists of encoder as well as decoder where encoder is a convolutional neural network and decoder is a multilayer Long short-term memory network. Encoder reads image and catches the abstraction of that image

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Abstract: The IONOLAB group produced GPS-based TEC measurements that were used to compare the empirical IRI model with the IRI-PLAS model's effectiveness in predicting Total Electron Content (TEC). On the equinoxes (March 21 and September 23) and solstices (June 21 and December 21), TEC values were measured in India and Turkey during times of low (2009), medium (2012), and high (2015) solar activity. In order to determine how accurate the models were, they were statistically assessed by comparing the GPS-TEC and empirical models, taking into account the maximum and lowest deviations, correlation analysis, and root mean square error (RMSE). IRI-PLAS estimates are often closer to the observed GPS-TEC values than other possibilities of IRI-2016 model when plasmaspheric effects have been ignored, according to the results of the experiment. For TEC calculations over India and Turkey, the "IG" solar proxy option of the IRIPLAS model is a more suitable alternative than the others, as can be stated for "IRI2001," one of the IRI-2016's "topside" possibilities.

Keywords IRI model · IRI-PLAS model · Mid-latitude ionosphere · IONOLAB-TEC

1 Introduction

The ionosphere, a partially ionised region of the upper atmosphere between \sim 50 km and \sim 1000 km above the Earth's surface, is a naturally occurring plasma that is subject to a number of forces from both above and below, including solar-generated ionising precipitation, energetic particles, solar wind, the electric field produced by the interaction of the magnetosphere and ionosphere, internal atmospheric waves, and light. For ionospheric-based applications, such as communication, navigation, and surveillance systems to operate more effectively, it is required to continuously monitor the uncertainties in the ionosphere. This is because the ionosphere has major influence on long-range radio waves. The electron density is the most fundamental metric for observing these ionosphere abnormalities. The electrons along the course of the beam from

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Research Article

Patient Monitoring Using AI in Viral and Infectious Cases

Dr A Ravi^a, Ms. N Mounika^b, Mr. Anees Ahamed Baig^c, Dr. G.L.N. Murthy^d ^{a,b,c,d} IEEE & Department of Electronics and Communications

Abstract

The main agenda of this work is to monitor a patient in viral and infectious cases, since our world faced a nightmare of Covid 19 where it became a high risk and Challenging Situation for Doctors and Caretakers to monitor a patient. So this health thesis problem statement can be resolved by this work, like this work introduces Artificial Intelligence in order to monitor a patient. Since, Preliminary this work is designed for monitoring of Cardiac and Paralyzed Patients by the source of Emotional Intelligence and Vigorous body movement Detection.

Keywords: Image Processing, Deep Learning, Keras, Face detection, Java, Android Studio and API's

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Keywords: Image Processing, Deep Learning, Keras, Face detection, Java, Android Studio and API's

A Circular Slotted Shaped UWB Monopole Antenna for Breast **Cancer Detection**

Venkata L. N. Phani Ponnapalli^{1, *}, Shanumugam Karthikeyan¹, and Jammula L. Narayana²

Abstract—The design of an innovative breast model system that focuses on a wideband for the detection of malignant tumours is described. The planned antenna has an overall area of $18 \times 28 \,\mathrm{mm^2}$ and a fractional bandwidth (FBW) of 99% across a frequency spectrum of 3.4–10 GHz. The suggested antenna has excellent impedance matching, a considerable gain of 3.95 dBi, maximum efficiency of 96.98%. Omnidirectional radiated patterns are verified in the frequency, and time-domain analysis is also investigated for breast tumor diagnosis. For detecting a breast tumor with accuracy, the suggested antenna S_{21} parameters are evaluated together, including imaging outcomes of current densities and specific absorption rate (SAR). These findings show that the radiator and the whole system work well at finding the tumor.

1. INTRODUCTION

Many improvements over existing imaging modalities like computed tomography (CT) and X-ray radiography have emerged in the past few years for investigation on microwave imaging (MI). Female breast cancer is the leading cause of malignancy in developed nations [1]. Early diagnosis of breast cancer is believed to improve treatment outcomes. Microwave imaging system (MIS) allows for a detailed investigation of breast tissues. It assists in determining morphological alterations in these tissues. The forthcoming ultra-wideband (UWB) MI promises excellent outcomes because of its nonionizing signals operating at hundreds of MHz and tens of GHz. Antennas are vital in developing a sensor network in these systems. Because the instrument is so close to the human body, optimization is critical. Microwave imaging has been getting a lot of attention because it can help doctors find and place cancerous tissue in the female breast [2-5]. Microwave imaging systems are regarded as an option in contrast to X-ray mammography owing to their low cost and few side effects. MI uses extremely low levels of microwave radiation to image the breast tissue. The electrical characteristics of benign and diseased breast tissue vary, allowing tumor identification and localization. Because a cancerous tumor includes so much more water and blood than normal breast tissue, it scatters microwave signals more than normal. As shown in Figure 1 [6], a linear array can be used to get this scattered signal and process it on a computer. When it comes to identifying malignant tissue, there are two ways that are often employed. The first one is by using microwave tomography [7] to solve forward and backward electromagnetic field issues that can be hard to figure out in a woman's breasts. Each of these problems can be solved with a single frequency, but a multi-frequency method makes it easier to find [8]. Another way to look at things is to use microwave imaging, which is when users send and receive short pulses at different places on a probe radiator or array elements [9]. These are then concatenated to produce a two-or three-dimensional picture revealing the locations of highly reflective items bearing malignant tissue [10]. Multiple-frequency tomography and radar necessitate UWB antenna elements,

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Research Article

Defected Circular-Cross Stub Copper Metal Printed Pentaband Antenna

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A pentaband antenna is presented based on the conducting copper material printed on an FR4 substrate for the applications operating in the Gigahertz frequencies. The antenna has a substrate material with a dielectric constant of 4.4. The conducting copper is printed on the FR4 substrate acting as the radiating element and ground. The antenna radiating element has a defected circular structure with a cross stub. The proposed structure is operating at 2.64 GHz, 4.87 GHz, 7.86 GHz, 10.74 GHz, and 13.67 GHz. The antenna is simulated using CST software. The antenna is fabricated and validated with the measurement of return loss. The antenna simulated results like surface current distribution, gain, directivity, and radiation pattern prove that the proposed structure with its compact size is the right candidate for the GHz application.

1. Introduction

Many applications like medical and clinical imaging, sensing, and radar application widely use the GHz spectrum. In most communication devices, the space available for the antenna is minimal. So, there is a huge requirement for compact antennas, and also the multiband requirement is another major characteristic of the communication devices. The multiband antenna [1–16] can resonate at different bands, and hence it can be replaceable by multiple antennas operating at a different frequency. The microstrip patch antenna [1, 2] is the antenna currently used in the communication and GHz application due to its low profile. Another advantage is that it is the desirable antenna for multiband applications. There is a

variety of techniques incorporated in the patch antenna to achieve multiband techniques. The techniques [3] include meandering of edges, parasitic patch elements, stacking of patches, a slot in the ground plane, and circular radiating elements [9–12]. However, all these make the structure complex, and it affects the antenna's performance. The metamaterial is the technique that researchers widely accept nowadays to achieve multiband characteristics.

Metamaterials [4, 5, 7, 11, 17–25] are artificial manmade structures that create a negative refractive index, improving antenna performance. The metamaterials are widely used in microstrip patch antennas to enhance gain and directivity, tune radiation characteristics, and achieve multiband [5, 6] characteristics. The metamaterial is an

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LAND COVER CLASSIFICATION USING LANDSAT IMAGES, NORMALIZED DIFFERENCE VEGETATION INDEX IN VIJAYAWADA, A.P

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ABSTRACT

The death rates are decreasing, and the population is growing on a daily basis, owing mostly to the advances of science and technology. This is increasing land exploitation for expansion, which is degrading the eminence of land every day and distorting the environment and foliage. Human activities on land usage ultimately have an influence on the environment spatially and temporarily. The leading role for land use/land cover (LULC) modification aimed at fulfilling the demand for expanding population by stepping up cultivation of edibles and void natural LC, such as the woodlands, as colonization and trade activities. The NDVI, a consequence perception method, is used to provide detailed content in perceiving and observing LULC effects. This paper provides information on changes to land cover in Vijayawada a city in Krishna district of Andhra Pradesh, in 2000, 2010 and 2020 using Landsat 8 images, and OLI and TIRS images. ArcGIS v10.4 is used to process satellite images and Land Cover changes are identified using NDVI. Versatile bands of Landsat images are used to produce the information of vegetation, water bodies, bare soil, and urban by calculating NDVI. The results revealed that dense vegetation decreased by around 28%, whereas vegetation, built-up and water expanded respectively by 10%, 23% and 1%, and increased kappa coefficient and overall accuracy (OA).

Keywords: Land use, Landsat, Land cover, NDVI and Remote Sensing.

1. INTRODUCTION

Since the last few decades, there has been increasing curiosity in the land cover analysis where land planning and management issues are parasitic to the consequences in LULC. Land cover is related to the physical condition of the land and land use is related to modifications in the Earth's terrestrial surface (Cihlar, (2000); Ehsan and Kazem, (2013); Ellis and Pontius, (2007); Liping et al., (2018); Shaw and Banba, (2017). With growing strain on land resources as a result of population increase and human settlement development, LULC is also essential for disaster risk reduction (DRR) to mitigate the changes in climate. L.C. changes can be perceived by availing Remote Sensing and GIS used spatially and temporally (Estornell et al., (2013); Fraser et al., (2009); Maasikamäe et al., (2011); Mamun et al., (2013); Professor SM, (2008). Multi date R.S. images are exploited to detect LULC consequences (Coppin et al., (2004); Lu et al., (2004). Land cover classification, soil wetness, water content measurement in foliage are few applications of Remote Sensing, to map all these applications, Landsat Thematic Map spectral channels are exploited (Bhandari et al., (2012). High-resolution aerial and satellite imagery is essential for analyzing LULC alterations in major cities. These data sets, however, are restricted in availability because to budgetary constraints. Medium-resolution datasets like Landsat Multi Scanner and Operational Land Imager (OLI) are used internationally for LULC change detection studies (Gadrani et al., (2018); Vishwaarma et al., (2016). The Landsat is equipped with a Landsat Operational Land Imager (OLI) and an Infrared Thermal Sensor (TIRS). Landsat has 11 channels where 1-9, bands1-7, 9 are of 30m resolution, and band 8 is of 15m resolution are related to OLI, and 10-11 are to TIRS with 100m resolution (Jeevalakshmi et al., (2016).NDVI is one of the best reference indicators to track LC changes as a result of human activities, such as vegetation changes and constructional changes.

Equation 1 demonstrates how to compute NDVI from multispectral Landsat images utilizing the NIR and RED bands (Kiranmai et al., (2020); Yacouba et al., (2010)

 $NDVI = \frac{NIR - RED}{NIR + RED}$ (1)

NDVI is used to determine drought monitoring and assessment, as well as vegetation and crop coverage monitoring (Carlson and Ripley, (1997); Shikha et al., (2007); Lan et al., (2009). This paper mainly discusses changes to the land cover of the city of Vijayawada using the NDVI method.

COVID-19 DETECTION USING CHEST XRAY BY DEEP LEARNING

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ABSTRACT:

The exponential increase in COVID-19 patients is overwhelming healthcare systems across the world. With limited testing kits, it is impossible for every patient with respiratory illness to be tested. Using this work the Covid 19 is detected by the chest X-Ray. It is a viral infectious fast spreader disease that grows in human bodies rapidly within in hours. It is similar to the viral pneumonia. So, the backend inspiration of this work is the detection of pneumonia by chest X- ray. By creating a Machine Learning Model and that by the source of transfer learning the model is going to predict the Novel Corona Virus. The CNN and Transfer learning helps in producing accurate result in the detection of Covid 19

KEY WORDS:

X-Ray characteristics, CNN, Transfer Learning, VGG16, Average pooling 2D, Flatten, dense, optimizers, Confusion matrix

INTRODUCTION:

Artificial Intelligence sub parts like machine learning and deep learning playing a major role in Medical Image Analysis. There is a rapid development by producing a accurate results within short period of time. In these Work also the most Pandemic which was never seen before and the whole world is panic about that disease Novel Corona Virus. The Covid 19 is going to detect by the Chest X-Rays by creating a Machine Learning Model. Here, initially we Will give a dataset sample of chest X-rays of Covid Effected Person and Normal Healthy People. But here the dataset contains of normal viral Pneumonia chest X-rays also. Because a normal people will have a Flue by that some changes will occur in chest then in X rays will come some similar to Covid X rays. Then we came with Viral Pneumonia X rays it consists of Patches which differs in the Novel Corona X rays there we can distinguish easily. In many countries, the healthcare systems have already been overwhelmed. There are limited kits for diagnosis, limited hospital beds for admission of such patients, limited personal protective equipment (PPE) for healthcare personnel and limited ventilators. It is thus important to differentiate which patients with severe acute respiratory illness (SARI) could have COVID-19 infection in order to efficiently utilize the limited resources

ANALYSIS:

The Novel Corona Virus was born in China Wuhan City in November 2019. And rapidly it was declared as pandemic by the WHO on 13th January of 2020. The entrance of



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Title Value Stream Management through an Integration model of Agile and DevOps

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Paper Authors V S R K Sarma, Pathanjali Sastri





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Value Stream Management through an Integration model of Agile and DevOps

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Abstract:

The software Companies are transforming the way they operate to increase the probability of success of the project and delight their customers. The delivery estimates must use a realistic solution scoping with all functional and non-functional requirements. The best approach is demonstrating reduced costs, improving the speed, implementing the workflow and automating the internal processes to increase customer satisfaction. With a well-supported model, the organization will reach the level of maturity on which each successful project will be built with experience and credibility. The model will deliver a value by addressing a complex process that involves multiple teams with long workflows to complete the project within the estimated schedule and budget. There is a need for the projects to embrace DevOps and agile methodologies to drive innovation, speed and adaptability to provide a greater value to their customers for uplifting their level of gratification. This paper attempts to highlight the reasons due to which projects can fail and the strategies that can be adopted to prevent such failures.

Index Terms—Agile, DevOps, Value Stream, DevOps Metrics, DevOps Optimization.

Introduction

Setting unrealistic goals are the primary reason for the failure of the projects. The secondary important reason is, the project managers fail to assess the realistic risk. We need to avoid creating arbitrary schedules to avoid project failure and define quality objectives and measure against those objectives throughout the project lifecycle. The companies must first define the people and processes involved along with the expected end state goal. In most cases, failure occurs due to the inability of people to change and learn. The Project Managers know the myriad benefits of process improvement, but many miss the mark due to ineffective feedback loops from the frequent changes

An Effective Algorithm for FER (Facial Expression Recognition) by using Viola-jones, SVM, KNN, MLPNN.

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Abstract:Face Expression Detection (FED) is widely known for detecting facial expressions. Facial recognition was researched during the 1990's and so far, due to its importance, FER has played an important role in image processing. Known as paying. FER is basically performed in three stages, which include face detection, feature extraction, and classification. This paper introduces an automated facial facial recognition system that is capable of recognizing all 8 basic facial expressions we use to express it depending on the conditions that occur during communication. Angry, useless, shocked, depressed, happy and unpleasant while many FERs were suggested systems to recognize only a few facial expressions. To validate the procedure, the Extended Cohn-Kanade (CK +) dataset is used. The proposed method is Viola-Jones for face detection Uses algorithms. Histogram of Oriented Gradients (HOG) is used as computing to extract features from images of expressive faces. Principal Component Analysis (PCA) was applied to reduce the dimensions of features, so that the most important features could be obtained. In fact, the method used in this article consists of three different classifications: K-Nearest Neighbor (KNN), Support Vector Machine (SVM), Multi-Layer Perceptron, and Neural Network (MLPNN) facial expressions. And for classification. Their results are compared. Experimental results show that we used a method that used 93.54% when using SVM rating, 82.96% when using MLP rating, and 79 when using KNN rating.

Keywords: FER (Facial expression detection), Face detection, Super Vector classifier, K-nearest neighbor (KNN), MLP (Multi-layer Perceptron).

1.Introduction: Face Detection is playing the very leading role since 1990 to detect faces as per biometric terms and security terms. As we Humans communicate in verbal (words by using voice) and non-verbal (expressions). It was Albert Mehrabian, a body language researcher, who first broke down the elements of face-to-face conversation. It found widespread results such as when we communicate, we show 55% non-verbal, 38% vocal, and only 7% words. This study shows the importance or conveys of information from one human to human is almost by facial expressions. Human has a very fast reactive way to change their movement facial depending on the situation. It all depends on the brain system and the rapid change in facial muscles as per the situation. Based on these changes in the facial expressions on the face depends upon the situation we build a different algorithm to face detection.

To find the type of facial expression we consider the intensities of the face objects like (the nose, eyes, and mouth.). To calculate these intensities, we use some algorithms which are effectivity in the facial detection in ML. The widely used approaches for facial expression analysis are Support Vector Machine (SVM) is a supervised Machine Learning algorithm used for both classification and regression. We can solve regression problems as well as classification problems. As far as resolving ratings is concerned, SVM is the best. The purpose of the SVM algorithm is to locate a hyperplane in an N-dimensional space that clearly classifies the aircraft's data points, with the aim of finding the aircraft with the highest margin separation.Depends on production method ofidentification. Feature extraction in MLP is one of the most common used neural network techniques based upon back propagation algorithms. There are three ways to recognize faces with different facial expressions: Classifying object-based techniques, model-based techniques, and comparing one variable to other techniques. Feature-based techniques are classified into methods based on architectural features, appearance features, and facial or object features. The most commonly used approaches to feature-based techniques are architectural and visual methods. Geometric feature-based techniques are architectural and visual methods.



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Title CHATBOT USING FINE TUNED RANDOM FOREST

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Paper Authors Dr. Sk. Akbar , G. Vara Lakshmi, K. J Harsha Vardhan, M. Yesaswini, V. Prudhvi Charan , M. Deepikeswari





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CHATBOT USING FINE TUNED RANDOM FOREST

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ABSTRACT:

The Answering System is a type of information retrieval system in which a direct response is anticipated in response to a submitted query, as opposed to a list of references that could contain the answers to the questions. It is a piece of hardware that allows for communication between humans and machines. The quality assurance mechanisms used in natural language processing are intended to provide students with correct solutions to their questions. This article gives an overview of the many quality assurance (QA) solutions that are available. QA systems may be broken down into a few different categories, including text-based QA systems, factoid-based QA systems, Web-based QA systems, Information Retrieval or Extraction-based QA systems, Restricted Domain QA systems, and rule-based QA systems. This work analyses further a comparative assessment of these models for various sorts of questioners, which resulted in a breakthrough for new research pathways in this topic.

Keywords: Machine Learning, Natural Language Processing, Questioning Answering System, Query, retrieval, response, Naïve Bayes, SVM, Random Forest, etc.

1. INTRODUCTION

Unlike the majority of information retrieval systems, QA systems strive to retrieve pointby-point responses as opposed to a deluge of documents or even matching sections. The most difficult aspect of a question-answering system is providing reliable responses from the vast amount of web-based data. The processing of time-based data to respond to temporal inquiries is still a challenge. This study focuses on many types of quality assurance (QA) systems.

Research on quality assurance aims to cover a wide range of question types, including fact,

list, definition, how, why, hypothetical and semantically constrained among others. The question answering system may, in general, be broken down into two categories: the closed domain question answering systems and the open domain question answering systems. It is possible that answering questions posed within a closed domain would appear to be an easier task to complete due to the fact that NLP systems may employ domain-specific knowledge that is often defined in ontologies. An alternative usage of the term "closed domain" might refer to a circumstance in which only a select few



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Title: MELANOMA DETECTION USING CONVOLUTIONAL NEURAL NETWORK

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MELANOMA DETECTION USING CONVOLUTIONAL NEURAL NETWORK

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Abstract

Malignant melanoma was the third common and the most dangerous types of skin cancer, account for 79% for all skin cancer death. Melanoma is extremely cure if detected early and treated properly, with a lifespan ranging from 15% to 65% from begain to intermediate stages. Disease diagnosis has thus far relied on the dermatologist's subjective judgement. Epiluminescence microscopy is an injection technique for improving visibility of microscopic structures of pigmented lesions that is used to cure melanoma early. The last point checklist is a cure procedure these involves identifying only seven dermoscopic criteria and using algorithms to define the image. This research offers an experimental automated diagnosis system for melanocytic skin lesions using an image processing technology aimed at detecting the presence of certain epiluminescence features. The image processing architecture used in this work enables for automatic detection of some specific cures criteria. The blue whitish veil, regression, and uneven streaks are all investigated. A set of roughly 200 ELM pictures was used to test the approach devised. Using kappa analysis, a good match was found between the ELM 7-point checklist characteristics discovered and the new image processing method. Although ELM cannot replace histological assessment, it may be a useful tool for improving clinical accuracy in the identification of skin pigmented lesions.

I. INTRODUCTION

The ability to improve the accuracy of melanoma diagnosis is now one of the most essential tools for lowering the tumor's mortality rate. Prevention initiatives are designed to raise public awareness of early warning symptoms. New diagnostic approaches and algorithms may help to make an earlier diagnosis and lower the risk of metastatic disease. Melanoma skin cancer is one of the world's fast-growing and deadliest malignancies, accounting for 75 percent of all skin cancer deaths. The International Skin Imaging Collaboration has started to compile a huge dataset of dermoscopic pictures that is publicly accessible.

Currently, the collection has over 20,000 photos from prominent healthcare centers across the world, which were collected using a variety of technologies at each facility. In 2016, the International Standard Industrial Classification dataset served as the basis for the public benchmark competition in dermoscopic picture analysis. The challenge's purpose was to create a stable

*CHATBOT USING NEURAL NETWORK TECHNIQUES

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Abstract: We often spend our time on the internet chatting with various chatterboxes, most of which are primarily designed for such purposes or merely for pleasure. The chatbots include embedded data that allows them to recognize the user's question and provide an answer. The goal of the college inquiry chatbot projects was to apply algorithms to read user queries and understand the user's message. The chatbot project developed algorithms for analyzing and analyzing user conversations and inquiries. This method can be implemented as a web application that answers student inquiries. Students simply want to converse with the bot. the program evaluates and responds to user inquiries. The machine responds to the inquiry as if it were being asked by a person. To answer student inquiries, the application employs algorithms. A web board is included in the system, which can read any text message or PDF document via a link. This makes it simple for consumers to alter the notifications that are relevant to them. Users don't spend much time hunting for appropriate clues.

Keywords: NLU, NLG, Word Embedding, RNN, Bi-directional LSTM, Generative Adversarial Network.

1.Introduction: Chatbots are computer programs that assist humans in having coherent discussions with machines using natural language such as English. With a huge vocabulary and a wide range of conversational subjects, the conversation may be quite fascinating at times. The use of deep learning in the IT sector has recently expanded, and Chatbot is one of its applications that displays a user using the Chatbot for various purposes. This document will assist in the creation of an open-domain Chatbot that can later be subjected to a specific domain if necessary, as indicated in the figure below. It can be accomplished by altering the dataset, which entails training a model with specific domain expertise.Because of the Chatbot's open domain nature, it may be utilized to create Artificial Intelligence assistants that can have real-life conversations about any topic and situation. To make deep learning more accessible to everyone, Google implemented TensorFlow, a major deep learning toolkit that is now open-source. TensorFlow is a Python-friendly framework that includes models and techniques for machine learning and deep learning (neural networks). The paper explains how the Neural Machine Translation (NMT) model, which is an advance over the sequenceto-sequence model, is used to create a Chatbot.. The Chatbot uses Bidirectional Recurrent Neural Network (BRNN).



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Title DETECTION OF INDIAN CURRENCY DENOMINATION USING TRANSFER LEARNING AND DATA AUGMENTATION TECHNIQUE

Volume 11, SPL ISSUE 04, Pages: 56-66

Paper Authors Dr.M.Kalpana , N.Samyuktha, P.Gnaneswari,M.Harshitha, Md.Gousiya Begum





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DETECTION OF INDIAN CURRENCY DENOMINATION USING TRANSFER LEARNING AND DATA AUGMENTATION TECHNIQUE

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Abstract

In today's world, paper currency plays a major role because now-a-days the value of currency is high. In the year of 2016, the Indian Government announced that the denomination of old Rs.500 and Rs.1000 notes was banned. After that new denomination notes were entered they're Rs.10, Rs.20, Rs.50, Rs.100, Rs.200, Rs.500 and Rs.2000. Since, identification of the currency notes became difficult. So, in order to identify its denomination we are using a Neural Network algorithms. During this project, we'll perform Image PreProcessing, Edge Detection, Segmentation, Feature Extraction and Classification on the Indian currency notes by using Data augmentation and Transfer Learning technique. Here we consider the currency images in a dataset which consists of 80% training data and 20% test data. Here the user uploads the input currency image in the test dataset which will further give the result by representing its respective currency denomination with 97% accuracy.

Keywords: GANs, Generator, Transfer Learning, Denomination, CNN, Feature Extraction, Image Pre-processing.

I. INTRODUCTION

Different nations in the world have a variety of currencies for replacing and utilizing the motive of goods. Among all countries one common hassle confronted by means of all is associated with the currency identification, and additionally inclusion of the currency denomination in the system. Along with the other states India is one of the countries that face many problems such as large losses due to the problems with foreign money denomination. This hassle

has arrived on account of the 12 months 2016. Due to this there are many greater losses in the normal economic system of the country's forex value. The technological developments have made a pathway for currencies such that it can't be normally recognized. Advanced printers and new modifying pc software's are used to create

Published: 23 September 2021

Image Steganography Using Remainder Replacement, Adaptive QVD and QVC

<u>Gandharba Swain</u> [⊡] & <u>Anita Pradhan</u>

 Wireless Personal Communications
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 114 Accesses
 3 Citations
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Abstract

This research article reports a steganography method based on adaptive quotient value differencing (AQVD), quotient value correlation (QVC), and remainder replacement. It possesses two advantages, (i) avoids unused pixel blocks problem, and (ii) performs data integrity verification at the receiver. It accomplishes data camouflaging and retrieval on 3-by-3 disjoint pixel blocks. From a 3-by-3 size pixel block three new blocks are derived, (i) quotient (QT) block, (ii) middle bit (M) block and (iii) remainder (R) block. A quotient of the quotient block is decimal equivalent of six binary bits. AQVD procedure is enforced to hide data in 4 corner quotients of the quotient block. The top-middle and bottom-middle quotients are appraised as reference values for AQVD procedure. In left-middle, center, and right-middle quotients, QVC embedding procedure is plied for data camouflaging by using their respective top and below neighbors as reference values. The 7th bit forms the M block and the 8th bit (least significant bit) forms the R block. Secret bits are camouflaged in M block by bit substitution. The verification bits are computed from QT block and M block. The verification bits are stored at R block, so that at the receiver side the integrity of the pulled-out bits can be checked. The experimental results prove that the recorded HC and PSNR values are improved. Furthermore, regular-singular (RS) and pixel difference histogram (PDH) analyses could not detect this technique.
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Image Tamper Detection Based on Logistic Map and Block Average

Sarath Babu Kalisetty, Gandharba Swain, Naween Kumar, Anita Pradhan

ABSTRACT

Intruders can tamper the medical images while it is on transit in internet. So, various tamper detection techniques came into existence. Mainly the earlier research on watermarking focused on embedding the watermark, and extracting the water mark. Recently, tamper detection is also considered as a necessary task for any efficient watermarking mechanism. This article proposes a tamper identification scheme using the concept of blocks. In a block of 4×4 pixels, there exists 16 pixels, their LSBs are set to zeroes. Then the mean pixel value of a block is enumerated. These 8 binary bits of mean value is hidden in LSBs of upper half (UH) of the block. Furthermore, an 8-bit key value is generated from logistic map (LM). The binary value of block mean and key value are XORed to compute the watermark bits (WBs). These bits are hidden in LSBs of the lower half (LH) of the block. At the receiver side the block mean is computed and made XOR operation with the 8-bit key value created from LM. These are the computed WBs(CWBs). The 8 bits from the LSBs of the pixels of UH of the block mean is same as the extracted bits from the LH of the block. If the CWBs are same as the extracted WBs and computed block mean is same as the extracted bits from UH of the block, then the block is earmarked as not tampered. The merit of this methodology is enumerated by various quality parameters. The values of these parameters are improved as compared to the related existing literature.

PDF

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Optik Volume 261, July 2022, 169212

Image tamper detection and correction using Merkle tree and remainder value differencing

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Abstract

This article proposes an image tamper detection and correction technique. It uses the principle of differencing and addresses the fall off boundary problem (FOBP). It operates on 2 × 2 non-overlapped blocks. From each pixel of a block the decimal value for 4 most significant bits (MSBs), is called as quotient, and the decimal value for 4 least significant bits (LSBs) is called as remainder. The 4 watermark bits (WBs) are computed from 4 quotients as the root of Merkle tree. These 4 WBs are XORed with the 4 bits generated from logistic map sequence to generate the 4 recovery bits (RBs). The 4 WBs and 4 RBs are stored in 4 remainders by LSB alteration and remainder value differencing (RVD). While extracting the watermark, the tampered blocks can be identified and a correction logic can be applied to get the true value of the pixels in the block. The peak signal-to-noise ratio (PSNR) value is 42.02 <u>dB</u> and structural similarity (SSIM) index value is 0.9765. The tampered blocks can be accurately identified and corrected.



Next

Keywords

Data hiding; Tamper detection; Remainder value differencing; Watermarking; Tamper correction

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Title: DIGITAL IMAGE STEGANOGRAPHY USING USING EIGHT DIRECTIONAL PVD WITH ADD-SUB ARITHMETIC

volume 11, Issue 06, Pages: 1448-1458 Paper Authors: Dr. ANITHA PRADHAN, S. BHANU PRIYA, B. BABITHA NAGA VENKATASRI, K. VINEELA RANI, R. NAGA MAHESH





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DIGITAL IMAGE STEGANOGRAPHY USING USING EIGHT DIRECTIONAL PVD WITH ADD-SUB ARITHMETIC Dr. ANITHA PRADHAN¹, S. BHANU PRIYA², B. BABITHA NAGA VENKATASRI³, K. VINEELA RANI⁴, R. NAGA MAHESH⁵ ¹Associate professor in CSE, PSCMR College of Engineering & Technology, Vijayawada, Andhra Pradesh ^{2,3,4,5}Student, CSE, PSCMRCET, Vijayawada, Andhra Pradesh

Abstract

RS analysis detects least significant bit (LSB) replacement of methods and pixel value difference histograms (PDH) analysis detects traditional PVD methodologies. The employing the sides in numerous orientations, PVD steganography can throw off PDH analysis. This work presents a steganography technique that uses LSB substitution to resist both PDH and RS analysis by utilising the sides in eight directions. By using a modified LSB replacement approach, the middle pixel of each 33 pixel block is embedded with 3 or 4 bits of information. The central pixel's new value is then used to compute eight difference values with eight nearby pixels. These eight difference values have a tendency for conceal information. There were two of them. Regarding two separate range tables, there are two different types. Kind 1 employs range table 1 and 3 bit modified LSB replacement. Type 2 employs range table 2 and 4 bit modified LSB replacement. Kinds 1 and 2 are referred to as variant 1 and variant 2, respectively. Kind 1 has a greater PSNR, whereas Kind 2 has a high in concealing capacity.

Keywords - PVD, LSB substitution, QVD, Steganalysis, PVC

I. INTRODUCTION

One of the most well-known and successful data-hiding schemes is the LSB replacement. RS analysis is used to detect this most basic approach. The sting areas of a picture may conceal more information than the smooth sections, according to Wu and Tsai [1]. They developed pixel value differencing (PVD) steganography to support this notion. The image's elements should all be 12 pixels wide. The difference between two pixels in a block is calculated and transformed to a new value by adding data. To increase embedding capacity, the PVD approach with a block size of 22 has

been proposed [2, 3]. Edges in three directions are evaluated in blocks of size 22. The values of two, three, and four surrounding pixels were used by Chang & Tseng [4] to determine the differences in pixel values However, they made a blunder when it came to the autumn issue (FIEP). Yang et al. [5] defined four types of pixel value discrepancies for data concealment in fourpixel blocks. To enhance PSNR, Hong et al. [6] used diamond encoding with pixel value differencing. The embedding capacity of LSB replacement techniques is higher, but the imperceptibility of PVD approaches is higher. PVD and LSB techniques are used

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Implications of Big Data Analytics for Pharmaceutical Industry and Transforming Healthcare

J S V Gopala Krishna, K Sudhakar, Dr. Sandeep S R, KarthikS, NavarajaP

Keywords: Behaviour analysis - big data - clinical analysis - data mining Insights can be derived from organised & unstructured data.

ABSTRACT

Consistently, we refer to the current period as the Modern period, which is otherwise called the Big Data period in the Information Technology area. We carry on with a speedy life in a high-speed world that never is by all accounts fulfilled. This exponential rise in data output is leading in Exabyte(s) of data being produced every day in the sciences, engineering, and technology fields alone. Big data enables us to study and re-invent various industries, including education, health, and law, but it is not limited to these. The primary goal of this paper is to conduct an in-depth inquiry into the pharmaceutical sector and healthcare utilizing big data and analytics.. Big data is always being preserved, allowing us to look back in time, but at this point, it's time to focus on analyzing such data in order to improve medications and services. Despite the fact that many big data implementations are done in-house, this approach offers to use Hadoop on a bigger scale. This paper is about more than just improving and analyzing data; there are also advantages and disadvantages as compared to the typical techniques that are presently available on the market.

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Data Poison detection schemes for Distributed Machine Learning

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ABSTRACT: Distributed machine learning (DML) contains large amounts of data, due to enormous amount of data there would be a chance for hackers to hack and steal the data. Ultimetely leading to the exposure the sensitive data regarding the users. Data poisoning attacks involve polluting a machine learning model's training data. Data poisoning is considered an integrity attack because tampering with the training data impacts the model's ability to output correct predictions. Data poisoning happens when the adversary is able to inject bad data into your model's training pool, and hence can able to get the information of the sensitive data that should be hided or preserved. Such attacks aim to inject so muchbad data into your system that whatever boundary your model learns basically becomes useless. The main aim of this project is to detect where the data has been poisoned by the adversary and to prevent them from stealing it. This project uses the SVM and logistics regression models to optimize the training data sets and improve the accuracy of the final model. **Keywords:** Poison detection scheme, distributed machine learning(DML), SVM,

1. INTRODUCTION

Distributed machine learning (DML) can realize massive dataset training when no single node can work out the accurate results within an acceptable time. However, this will inevitably expose more potential targets to attackers compared with the non-distributed environment. In this paper, we classify DML into basic-DML and semi-DML. In basic-DML, the center server dispatches learning tasks to distributed machines and aggregates their learning results. While in semi-DML, the center server further devotes resources into dataset learning in addition to its duty in basic-DML. We firstly put forward a novel data poison detection scheme for basic-DML, which utilizes a cross-learning mechanism to find out the poisoned data. [1]We prove that the proposed cross-learning mechanism would generate trainingloops, based on which a mathematical model is established to find the optimal number of training loops. Then, for semi-DML, we present an improved data poison detection scheme to provide better learning protection with the aid of the central resource. To efficiently utilize the system resources, an optimal resource allocation approach is developed. Simulation results show that the proposed scheme can significantly improve the accuracy of the final model by up to 20% for support vector machine and 60% for logistic regression in the basic- DML scenario. Moreover, in the semi-DML scenario, the improved data poison detection scheme with optimal resource allocation can decrease the wasted resources for 20-100%.

1.1 Scope:

Machine learning (ML) has made tremendous progress during the past decade and is being adopted in various critical real-world applications. However, recent research has shown that ML models are vulnerable to multiple security and privacy attacks. In particular, backdoor attacks against ML models that have recently raised a lot of awareness. A successful backdoor attack can cause severe consequences, such as allowing an adversary to bypass critical authentication systems. [2]Current backdooring techniques rely on adding static triggers (with fixed patterns and locations) on ML model inputs. In this paper, the data poison detection scheme can be extended to a more dynamic pattern to fit the changing application environment and attacking intensity. Besides, since the multi-training of sub-datasets would increase the resource consumption of the system, the trade-off between security and resource cost is another topic that needs to be studied further. ML models that generate dynamic triggers, in terms of trigger pattern and location. We refer to our techniques as dynamic backdoor attacks offer the adversary more flexibility, as they allow triggers to have different patterns and locations with anonymization model to preserve the sensitive data.

Rainfall prediction using LLRS Algorithm.

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ABSTRACT

In India, Agriculture is the central issue for survi val. For farming, precipitation is generally significant. Nowadays precipitation forecast has become a significant issue. Pre word usage of precipitation offers attention to individuals and know ahead of time about precipitation to avoid potential risk to shield their harvest from precipitation. [1]Many methods appeared to pre dict precipitation. AI calculations are generally valuable in anticipating precipitation. Some of the major Machine Learning algorithms are ARIMA Model(Auto-Regressive Integrate d Moving Average), Artificial Neural Network, Logistic Regression, Support Vector Machine and Self Organizing Map. [2]Two commonly used models pre dict seasonal rainfall such as Linear and Non-Linear models. The first models are ARIMA Model. While using Artificial Neural Network(ANN) pre dicting rainfall can be done using Back Propagation NN, Cascade NN or Layer Recurrent Network. Artificial NN is same as Biological Neural Networks. [3]We can apply many techniques like classification like accuracy, correlation, and regression like RFR, SVC, Lasso and LR algorithm according to the requirements and also, we can calculate the error between the actual and prediction and also the accuracy.

Keywords: Rainfall, Machine Learning, Deep Learning, LLRS Algorithm, Prediction analytics

1. INTRODUCTION

Precipitation expectation is the one of the significant methods to anticipate the climatic conditions in any country. [5]Rainfall Prediction Model has a primary goal in forecast of the measure of downpour in a particular well or division ahead of time by utilizing different relapse strategy and discover which one is best for precipitation expectation. This model additionally helps the rancher for farming to choose the yield, helping the watershed division for water stockpiling and furthermore assists with investigating the ground water. [5] This model additionally helps the rancher for farming to choose the harvest, helping the watershed office for water stockpiling and furthermore assists with breaking down the ground water. What's more, it is likewise useful for the air terminal to remove the plane. At long last, it is utilized to shield numerous spots from the floods. In India, Agriculture is the central issue for endurance. For agribusiness, precipitation is generally significant. Nowadays precipitation expectation has become a significant issue. Forecast of precipitation offers attention to individuals and know ahead of time about precipitation to play it safe to shield their harvest from precipitation. Numerous procedures appeared to foresee precipitation. [6]Machine Learning calculations are for the most part helpful in anticipating precipitation. We can apply numerous strategies like characterization like exactness, relationship, and relapse like LR calculation as per the prerequisites and furthermore, we can ascertain the mistake between the genuine and expectation and furthermore the precision. The prescient model is utilized to expectation of the precipitation. The initial step is changing over information in to the right configuration to lead analyzes then make a decent investigation of information and notice variety in the examples of precipitation. We predict the rainfall by separating the dataset into training set and testing set then we apply different machine learning approaches (Lasso, RFR, LR etc.) and statistical techniques and compare and draw analysis over various approaches used. [7]With the help of numerous approaches, we attempt to minimize the error.



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Title: Synthetic media Deepfake Video Detection using ResNeXt& LSTM volume 11, Issue 06, Pages: 1471-1483

Paper Authors: Mr.K.Sudhakar ,A.Mallikarjuna Reddy , Ms. K.Siddika Harsha , Ms. K.Sai Mallika ,

Mr. V.Bharadhwaja



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Synthetic media Deepfake Video Detection using ResNeXt& LSTM

 $\label{eq:Mr.K.Sudhakar^1} \mbox{,} \mathbf{A.Mallikarjuna} \mbox{ Reddy}^2 \mbox{, } \mathrm{Ms.} \mbox{ K.Siddika} \mbox{ Harsha}^3 \mbox{, } \mathrm{Ms.} \mbox{ K.Sai} \mbox{ Mallika}^4 \mbox{, } \mathrm{Mr.} \mbox{ V.Bharadhwaja}^5$

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ABSTRACT:

Synthetic media Deepfake Attacks turn out to be one of the biggest issues in society these days. Everything that appears on social media is a sensation in this generation. Never trust your eyes blindly; they may appear to be realistic, but they are not. It is the time to flip the coin to the other side and understand. There might be a simple video released on social media of some famous celebrity or any other popular person saying something. But what if that person in the video is not actually him? This is called as Image tampering attacks or deepfakes. And it is the most widely happening technique now-a-days in order to spread negative information to misguide millions of people by simply releasing a forged video into the media. It is a media which can create fake information by replacing their faces and their speech. It can cause huge damage to the affected person's name and fame. This Deepfake Attacks are increasing two times for every six months. It can make anyone say anything at any place. Therefore, as the impact of creating tampered attacks is increasing widely, it also needs best technologies for its detection and hope for its prevention as well in future.

Keywords: Deepfake Video Detection, Synthetic media, Artificial Intelligence, Long Short-term Memory (LSTM), CNN, Res NeXt

1. INTRODUCTION:

"Synthetic media Deepfake video Detection using Res NeXt& LSTM" is the concept of detecting videos that are fake which are indistinguishable from the original ones. This is a technology which is utilized in the wrong hands to circulate misinformation. The invention of this kind of content has triggered several social consequences which is targeted upon notorious and influential people. This detection can be done by using several techniques and algorithms by using Deep learning and python. There should be a better approach for identifying these



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Title IDENTIFICATION OF TYPES OF INTRUSION ATTACKS USING SPARK AND GRADIENT BOOSTED TREE CLASSIFIER

Volume 11, SPL ISSUE 04, Pages: 49-55

Paper Authors K.Sudhakar, S.Chandana Sree, L.Meghana, S.Bhavana, B.Naga Durga





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IDENTIFICATION OF TYPES OF INTRUSION ATTACKS USING SPARK AND GRADIENT BOOSTED TREE CLASSIFIER

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Abstract

Big data has become a phenomenon in recent years, coinciding with the technological revolution. Big data is having a greater impact on nearly every field, from mathematics to medicine. To properly explore this data, we need a tool that can handle large amounts of data. Apache Spark is a tool that provides a real-time model for big data analysis. Spark includes memory operations. In addition to this data, data security is an issue. We must take appropriate measures to protect data from intrusion attacks. Knowing the types of attacks is critical in this situation. The main goal of this work is to use the libraries provided by Spark to pre-process the large amounts of data and identify the types of intrusion attacks. We classified the attacks using four different classifiers into two types of labels: benign attacks and infiltration attacks. As a result, we can determine the type of intrusion attack.

Keywords: Intrusion attacks, Apache Spark, Gradient Boosted Tree Classifier, Big Data, Linear SVM, Logistic Regression, Decision Tree Classifier, Benign attack, Infiltration attack.

I. INTRODUCTION

Intrusion attacks occur when unauthorized individuals attempt to gain access to a secure system and its data [3]. These can cause the system to crash or slow down. Private data can be viewed by intruders. To protect confidential data from others, we must take precautions, and in order to know what type of protection to provide, we must first understand the type of attack. Malicious and non-malicious intrusion attacks can be distinguished. Malicious attacks are those that disrupt system functionality, whereas non-malicious attacks are those that do not disrupt system operations. In our research, we classified intrusion attacks as benign or infiltration, with benign attacks being nonmalicious and infiltration attacks being malicious.

In general, when it comes to network and security data, we are presented with an abundance of data. So we used Apache Spark to pre-process and select the appropriate features for attacks. Spark provides various utilities for working with big data[6], as well as several libraries for working with machine learning algorithms. In our investigation, we first used the

Articles Recommendation System Using NLP Techniques

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Abstract: In today's world, so many people fantasize about reading articles on the topics they are interested in. It may waste time finding articles that are useful for the person. Reading all the content in the article to find out whether the article is useful for him or not is not the recommendable way. So, we are suggesting a way for the users to quickly find the articles in which they are interested. The content in the articles is also not in a simple manner. the articles which we find may not have simple language and they may trigger the wrong target, finding our type of articles will be a time-consuming thing. Based on the interactions of the user with the web, that actions will decide the interests of the user. Based on his interests, we find articles related to his interests. We make this by finding the articles which are viewed by the user. And try to find articles similar to the content that he had gone through. It helps the organizations to filter the advertisements or articles to be presented to the user based on one's interests will be simpler than we think. We used the strength calculator to find the fondness of the user.

1. Introduction: Users should be directed to high-quality Websites that are relevant to their interests as information on the Internet grows rapidly. These online pages, on the other hand, are impossible to judge. It is insufficient to show customers quality content based on ratings or previous Search results. There is a dearth of powerful automated processes that combine human opinions with personal preferences in machine learning. The purpose of this project is to research recommendation engines and identify their flaws, as well as to design a web-based recommendation engine that uses user-based collaborative filtering (CF) engine and incorporates context-based results. The system assesses the similarity between users' profiles to forecast recommendations of unseen items to the active user based on numerical ratings of similar items between the active user and other system users. Pearson's correlation is used by the system to determine how similar users are. The results demonstrate that the method is based on the concept that active 9 users would always react positively to goods that have been highly rated by like users, that certain products have a scarcity of ratings, and that users will adapt fast to changes in their interests, and that prospective attributes of an item that may be of interest to the user will be identified. This project will employ both a context-based and a content-based approach to propose great material to its consumers. It would include utilizing available contextual data, assessing and summarising user searches, and integrating metadata such as tags and feedback to a richer information model to propose content. The project also intends to construct an automated procedure and produce an intelligent web application employing soft computing technologies. Users that have to navigate through pages of results to discover relevant material will profit from the System.

2. Related Work:

In [1] Basic parametric function approximation" (p.163) was highlighted by Goodfellow et al. (2016) because of the center method on which maximum contemporary-day feedforward deep networks (FDN) are based. The term 'feedforward' is utilized by the authors to explain community enters this is thrust ahead from one feature to the subsequent even as being evaluated computationally for its approximation to a degree of hobby Many present-day neural networks, inclusive of Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), and Deep Neural Networks (DNN), are constructed on the inspiration of FDN. Others consist of Belief Networks (DBN) and others. These structures are presently extensively utilized in many industries. Object and speech recognition, in addition to herbal language processing, are utilized in many sectors. Not best for Natural language processing (NLP), but additionally for marketing and marketing and recommender structures (You et al. 2019). The purpose in such occasions is to approximate an object or piece of facts to a user (Goodfellow)(2016, et al.).

In [2] Shu et al. (2017) Used preceding pupil information, which changed into then processed the use of a CB advice machine to make suggestions approximately getting to know substances (see also Tian et al. 2016; Goldstein and Osher 2009). Rahman and Abdullah (2018) used a fuzzy clustering approach and a selection tree to categorize novices into beginner, intermediate, and grasp classes primarily based totally on their instructional overall performance and getting to know habits. This permits RS to endorse learner-targeted substances on an e-



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Title FORSEEING WORKER SAFETY AT CONSRTUCTION SITES

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FORSEEING WORKER SAFETY AT CONSRTUCTION SITES

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ABSTRACT:

According to a recent study, construction workers, mining workers, and municipal workers, in particular area at risk of being seriously injured. The falling objects among construction workers are one of the most common incidents at construction sites. The PPE should be wear workers all the moment at building site. However, some staff are still not wearing the helmets. So previously to reducing this problem by using some machine learning techniques. But the accuracy and speed are low. So, then we are reduced that to implementing this project by using YOLO algorithm and we use the R-CNN algorithm for feature extraction and classification. For each sector, we will use the computer vision to identify the problem and give the best solution. In this project we are going to identify those who are wearing the helmet or not and follow the safety rules.

KEYWORDS:

Computer vision (CV), Personal Protective Equipment(PPE), You Only Look Once(YOLO), R-CNN for feature extraction and classification.

1. INTRODUCTION

According to a recent study, construction workers, mining workers, and municipal workers, in particular, are at risk of being killed or seriously injured. One of the most hazardous jobs in the country has been acknowledged by the Ministry of Urban Development. Every industry has developed its own set of safety guidelines and policies in order to avoid dangers. It is impossible to

SMS SPAM DETECTION USING MULTINOMIAL BAYESIAN

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ABSTRACT:

Spammers come up with novel techniques to disseminate spam. It is performed through the use of several social media platforms. Most emails in the United States are spam, according to research by the Messaging Anti-Abuse Working Group. This is why we'll be looking at SMS spam in greater depth. There are several spam filters available for identifying spam, but there is no method to completely eliminate spam or stop spam communications. Many different text categorization algorithms have been developed, including the Bayesian approach.

The Bayesian methodology was one of the first methods for filtering spam, and it continues to function well today. In this post, we examine two Naive Byes text categorization and spam filtering improvements, as well as the differences between them and how they function. Spam filtering with Naive Bayes is a fundamental approach for eliminating spam that can adjust itself to specific users' email demands and has low false positive spam detection rates that are typically acceptable to users. It is one of the earliest methods of spam screening.

KEYWORDS:Data Set, DataCleaning, TextPre-Processing, Classification, Binary Classifier, Multi-Classifier, MultiNomial Bayesian

1.INTRODUCTION:

At present time information sharing has becamea easy task to perform and easily done by the common man itself. There are different connecting bridges that are used to connect the information among the people. Among the various connecting platforms the use of the email is very easy to make and been popular rapidly. Along with their simple usage mechanism there is also a drawback of getting harmed by the SPAM information messages that causes severe loss to the users that want to share information between them through mails. SMS spam can be simply called as the information that what we do not want at all and doesn't help us in anyway and due to it's availability at minimum range the attackers who sends these spam messages prefer to choose the SMS way of connection. Users does not like to receive the spam messages at any cost wasting their time and resource and mainly they start loosing hope in the technology itself. These spam messages can contain some harmful connecting links that can cause a severe harm to the privacy of the users that can make them really loose their personal data and valid information that should not be shared with others which is highly confidential.

Due to its very simplicity and popularity SMS system has been widely used in present generation in many fields like mainly in Banking services and Ticket booking services in many various fields. So this main problem of the spam messages can be avoided and prevented by the usage of the SMS SPAM DETECTION mechanism. Being attacked by the spam messages the companies started to use different methods to avoid and prevent the spam messages by using mail header analysis and whitelist/blacklist analysis and other such useful technique.

2.LITERATURESURVEY:

In [1]JeremyEberhardt demonstrated how Bayesian filtering may be readily constructed and maintained for a sufficiently accurate text classifier to have a significant impact on the accuracy of the filter. A number of changes may be made to Naive Bayes. Naive Bayes, which is commonly used in spam filtering, may be applied to a wide range of texts. Spam or ham are the categories for the papers and emails. A spam document is one that is undesirable, whereas a ham document is one that is not. Multinomial Bayes is an optimization that is used to improve the accuracy of the filter. After the supplied data, a filter is produced that assigns the likelihood that each characteristic is in spam. Due to the computation time, Multinomial Bayes does not scale well to huge documents with a higher possibility of duplicate features. The key to making Bayesian approaches successful is to find the alterations that maximize accuracy for a certain setting. On August 1, 2010, this entry was published.

AN INTEGRATED FRAMEWORK USING TRANSFER LEARNING AND RE-TRAINED MODELS TO DETECT THE STAGE OF BONE CANCER

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ABSTRACT:Due to change in food habits and life style of the human beings over two decades one of the major diseases that adversely affect the human beings irrespective of the age and the working scenario is "Cancer". The proposed research aims to focus on bone cancer, which generally infects pelvis, which is known as long bones in arms and legs. In this proposed research, the model automates the detection of bone cancer by applying computer vision techniques of the CT SCAN images. In traditional approaches, researchers used to extract necessary features using surf tools and apply image processing approaches to indentify cancer cells. The proposed research deals with identification of non-cancerous cells because with respect to bone tumours, non-cancerous cells are more frequent than cancerous cells. Non-cancerous cells may be affect less at the initial stage but with due course of time it may infect other bones and may lead to life risk stage. So, there is an urge for automation bone cancer detection system at early stages of attack.

INTRODUCTION:

Bone cancer can start in any bone in the body, but the pelvis and long bones in the arms and legs are the most usually affected.Some forms of bone cancer are more common in youngsters, whereas others are more common in adults. The most usual treatment is surgical removal, but chemotherapy and radiation therapy may also be used. The type of bone cancer being treated determines whether surgery, chemotherapy, or radiation therapy is used. The frequent types of bone cancers are discussed in figure 1.

Garbage Classification using Deep Learning

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Abstract: The Accumulation of strong waste in metropolitan regions has turned into a main pressing issue, and will prompt natural contamination and, while perhaps not appropriately made do, can be hazardous to human wellbeing. There should be a prominent level/clever waste administration framework to oversee various kinds of waste materials. One of the main strides in squandering the board is to isolate the loss into various parts and this cycle is normally completed physically. To work on this interaction, A garbage classification model can be used as a wise trash arrangement framework, created utilizing Python's TensorFlow, NumPy, Matplotlib and Pandas libraries, Convolutional Neural Networks (CNN) model, to test the informational index. Utilize pre-prepared models that can order squander into various sorts like cardboard, glass, paper, metal, plastic, and trash. The proposed framework is tried on the various kinds of waste depicted previously. Squander isolation will be quicker and better without the proposed trash arranging framework without human inclusion or limiting it. The model utilized would be a Convolutional Neural Network (CNN) due to its great and effective capacities in the realm of AI, particularly in picture characterization.

Keywords: Garbage classification, NumPy, Pandas, Matplotlib, TensorFlow, Keras, Convolution Neural Networks (CNN).

1.Introduction: Trash arranging is a subject connected with arranging various sorts of waste as per their sort which helps in reusing valuable materials in our everyday existence without expanding the heap of waste. With the quick development of the economy and the improvement in the expectations for everyday comforts of individuals, how much trash is expanding quickly. As per the most recent report by Lianhe Zaobao, worldwide waste volume will increase by 70% by 2050, and the undertaking of arranging waste will turn out to be increasingly troublesome. Researchers and specialists have done a great deal of examination on squander order; however, the vast majority of the proposed plans are developments in the last strategy for reusing. The stimulus for propelling this subject was that our current circumstance and attitude change consistently and an enormous number of lots of trash are unknowingly unloaded in water and ashore. Squander itself, whenever reused and utilized, can help the climate and humankind in endless ways. The initial phase in doing so is to choose the right kind of material for the suitable necessities that we are still physically doing with the assistance of restricted human information. However, involving top to bottom characterization of pictures can assist you with finding the right sort of material in a garbage bin that can then be utilized appropriately. Second, individuals who gather trash, on the off chance that they are not as expected, can combine various materials as one without their legitimate distinguishing proof, which can again be impeded by a point of interaction that utilizes pictures. Orders litter. Pictures are normally 512 x 384 pixels in size, yet a picture of this size made 589,824 sections and this gigantic dataset was too weighty to even consider handling with restricted computational assets, so the pictures were resized to their unique size. Diminished to 10% which implies fifty-one * thirty-eight pixels 5814 sections were made. The reason for this work is to take pictures with single items, to isolate them and to bunch these photos into five classifications of cardboard, glass, metal, paper, and plastic. We will utilize a dataset for certain photos of each class referenced before. Since the information managed here was as pictures, it was hard to conclude whether a pixel could be a significant part of demonstrating. Subsequently, layered decrease of pictures was the main procedure used to restrict the size of the dataset. Picture characterization, which can be characterized as the errand of grouping pictures in one of the many default classes, is an essential issue in PC vision. It shapes the premise of different elements of PC vision like restriction, recognition, and division. Albeit this undertaking might be thought of as various for people, it is substantially harder for robotized frameworks. Discussing the exhibition of overwhelming models, Convolutional Neural Networks offers cutting edge execution for picture acknowledgment and order, content arrangement. Convolutional Neural Networks (CNNs) have been applied to visual works since the last part of the 1980's. Notwithstanding, despite a few dispersed applications, they stayed latent until the mid-2000's, when progress in processing power and the coming of a lot of named information, which were achieved through better calculations, assumed a significant part being developed, and carried them into the positions of the sensory system. An organization renaissance that has seen fast development starting around 2012.

IPL Prediction using Machine Learning

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Abstract: This report was written by Computer Science Engineering students (third year, second semester) at Potti Sriramulu Chalavadi Mallikarjuna rao College Of Engineering And Technology for the project IPL Prediction Using Machine Learning. This is the result of a project started during the third year of undergraduate study in the department of Computer Science Engineering. Cricket is India's most popular and widely played sport, having the largest fan base. The Indian Premier League has a 20-20 format that is notorious for its unpredictability. The IPL match predictor is a machine learning (ML)-based prediction approach that teaches data sets and prior stats in all parts of the game, including the toss, home field, captains, favourite players, opposing battle, and previous numbers.

Keywords: Cricket Prediction, Adaptive Boosting Algorithm, Linear Regression, Decision Tree, Random Forest.

1.Introduction

Obtaining information on the inside and out has become relatively simple thanks to the rapid growth of technology in recent decades. Thanks to the availability of both live and historical data, machine learning is quickly becoming a prominent topic in sports research. Sports analytics is a means of collecting and analysing prior game data in order to extract basic information and inspire powerful and dynamic decision-making. It might include determining whether or not to purchase a player at an auction, deciding who to start in the following match, or making preparations for future matches based on predictions made from prior encounters.

2. A review of the literature

Various machine learning logics are employed, and their efficacy has been demonstrated. The link between ML and games can be traced back to the origins of man-made awareness over lengthy periods of time. Man-made awareness hypothesised that machine learning may be approached by playing checkers [1]. In cricket, one of the most important tasks in predicting a match's outcome is to separate basic highlights that determine the match's aftereffect. In order to predict the outcome, fascinating work has been done. The majority of previously published research that projected an aftereffect in a match coordinate for 50-over cricket are summarised in this literature review. Home field advantage, victory hurl, and the impact of the DL technique on 50/50 games were all investigated by Bandalasiri. [2]



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Title IOT BASED COVID-19 MONITORING SYSTEM FOR MASK & TEMPERATURE USING PI

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IOT BASED COVID-19 MONITORING SYSTEM FOR MASK &TEMPERATURE USING PI

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Abstract

After the arrival of covid in the modern era, survival has become a major issue that must be addressed and taken care of. As prevention is better than cure, it is necessary to take some preventive measures to limit the spread of coronavirus, such as wearing a mask, checking our body temperature, and sanitizing our hands. This can be done manually, but there are some drawbacks, such as many people may come into contact, which is a major source of spreadingthe disease, and it also costs high labor. So, in order to mitigate these issues, we intend to create device that automatically detects a person when he approaches the device and determines whether the person is following preventive measures or non. Detects face masks using a Pi camera integrated with the Raspberry Pi, and then measures temperature using a non-contact less temperature sensor; if a person is tiring a mask and has a normal temperature, the final sanitization process is performed using a servo motor; otherwise, if there is no mask or the measured temperature is higher than the specified value, the process is aborted. Then a buzzer sound is produced, indicating that the person is not following up on preventive measures. These types of devices are most commonly used in entry detection areas.

Keywords: USB Camera, MLX90614 Contactless Temperature Sensor, Servo Motor, IR Sensor.

I. INTRODUCTION

Since December 2019, the entire world has been experiencing numerous difficulties as a result of the entry of the coronavirus, also known as COVID-19, which originated in Wuhan, China and has rapidly spread to several countries, including India, the world's second-most crowded country with a population of over 134 billion persons [20- 22]. It has swallowed many lives and still many lives are in danger. We've been fighting this condition for two years, but there is still no proper vaccine or therapy for it, therefore the best approach to get rid of it is to take preventive measures, as prevention is better than cure. In densely populated countries like India. however, limiting disease spread is a undertaking. difficult Government authorities or any private institutions cannot take care of each and every person so every individual should take care of themselves by following the necessary precautions.

This project of covid guiding system based on IOT provides an efficient automatic detection of a person whether



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GAS LEAKAGE AND VOLUME (WEIGHT) MONITORING USING IOT

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Abstract

The goal of this project is to raise awareness about the gas level in the container and to place a gas order when the level drops. It's also capable of detecting gas leaks. When a cylinder becomes empty, we must notify the gas cylinder provider and request a new cylinder. There may be a delay in providing the gas cylinder due to the rush or hectic schedule, or due to a lack of the cylinder. This could be due to a delay in notifying the gas provider, or because we notify the gas provider at the last minute when the gas tank is empty. In our daily lives, we frequently confront the problem of gas leakage from the cylinder and fire. A fire sensor can be used to solve the problem of flame or fire in the kitchen. Furthermore, the use of a load sensor allows him to reserve a gas cylinder due to his hectic schedule. The goal of this project is to create a smart gas cylinder that is connected to the internet of things.

LPG is a gas that is commonly utilised in everyday life. We'll be focusing on continuous monitoring and leak detection in residential LPG cylinders in this research. If we haven't observed that the petrol tank is empty, we must book it in black for more money. The level of gas in the cylinder will be checked at all times by this project, and we will be notified when the gas is ready to run out. It serves as a reminder to the user to schedule a new cylinder. Another requirement of this project is to detect gas leaks and provide a warning message to the user when one happens. The goal of this project is to create a smart gas cylinder that is connected to the internet of things.

Keywords:InternetOfThings,MQ6gassensor,Loadcell,LPGgasbottle,NodeMCU,SNSservice,Arduino,Leakagedetection,Monitoringgaslevel.

A Comparative Study on Identification Bag of Words Using XGBOOST

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Abstract: The use of the Bag of Words (BoW) approach in computer vision has grown dramatically over the last fifteen years. It can also be used for image classification, video classification, robot localisation, and other tasks in addition to text classification and texture identification. It is one of the most widely used approaches for classifying text and objects. The BoW approach for in-text classification tracks the number of occurrences of each bag that is formed for each instance type or word, regardless of word order or grammar. Visual scene classification, on the other hand, is based on clusters of local descriptors extracted from photographs, regardless of their order. Many additional categorization algorithms are computationally and conceptually more complex than the BoW approach. As a result, BoW-based systems may be able to achieve new and improved performance on widely used text and picture classification technique benchmarks. While all of the models beat the keyword-based baseline classifier, XGBoost with all features comes out on top. The XGBoost framework for gradient boosting has grown quite popular. It's the name of a type of machine learning. It can assist us in predicting any type of data if we have previously anticipated it. Any type of data may be classified. It may also be used to classify text. The most popular way for retrieving information is BoW.

Keywords: Bag of words,XGboost, Term frequency,N-gram, dataset, Machine learning, countVectoriser, Natural Language Processing(NLP), normalization.

1.Introduction: The perplexed or jumbled character of many social influencers' postings is a huge problem with text modelling, yet they seem so trendy and even combined with emoticons, emojis, hash-tags, punctuation, and other elements. They jumble things up and make ML algorithms' analysis or processing more challenging. Deep learning methods have already achieved significant progress in the fields of computer vision and pattern recognition, in addition to standard text classification approaches. Traditional machine learning algorithms rely primarily on time-consuming and frequently incomplete handmade features, whereas neural networks based on dense vector representations can outperform them on a variety of NLP tasks.Word embedding and deep neural networks are outperforming more standard machine learning methods for text analysis, demonstrating their expanding success. The Bag Of Words (BOW) method is a Natural Language Processing method for learning from text. It is introduced to count the number of times a specific word appears in a text and enter those unique terms into a dictionary. XGBoost is a versatile and cutting-edge implementation of gradient boosting machines that have been found to outperform improved tree approaches in terms of computational power.

I love this movie! It's sweet, but with satirical humor. The dialogue is great and the adventure scenes are fun... It manages to be whimsical and romantic while laughing at the conventions of the fairy tale genre. I would recommend it to just about anyone. I've seen it several times, and I'm always happy to see it again whenever I have a friend who hasn't seen it yet!



Figure 1: BagOf Words



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DETECTION OF LIVER DISEASE USING HYPER TUNED GRIDSEARCH

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Abstract

Liver disease is considered a major health concern because of the increased risk of illness and mortality. As liver infections are slow and chronic, they are more difficult to diagnose. This is the same reason why many patients are unable to make a diagnosis until the final stage. In disease detection, machine learning approaches play an essential role. The main objective of this project is to assess to detect the liver disease with high accuracy, less computational cost, and less run time complexity. To determine liver disease, this model is developed using classification techniques that are employed as meta-classifiers. To complete the task, the technique is divided into various parts. In the first module, the traditional data is preprocessed. Data Cleaning, Data Transformations and standard scalar are the techniques that are used to compute preprocessing. Base classifiers like KNN, SVM, Decision Trees, and Naive Bayes are used, and Logistic Regression classifiers are used as meta classifiers to process the information. Then we apply hyper tuning by using the grid search technique. These algorithms are hypertuned by a grid search to attain more accurate results. Therefore, the significance of liver disease detection is known.

Keywords:Liver disease, hyper tuning, grid search, Logistic Regression, meta classifiers, SVM, KNN, Decision Trees, Naive Bayes, and Machine learning.

1. INTRODUCTION

Liver Disease is becoming a growing serious health problem. This ends in death or partially damaged because it is difficult to predict Liver Disease in its early stages. As an outcome, in this view, this approach improves the detection of liver disease in patients, allowing people to take actions that lower the death rate. The primary goal of this project is to use the Logistic Regression algorithm as a meta classifier and the other algorithms are hyper tuned by the grid search method.to detect liver disease. To perform the assignment, we will divide the procedure into discrete modules. The traditional preprocessed in the first module. To compute, the next module includes a Logistic Regression algorithm.

Today we see that liver patients are increasing rapidly, and it is very important to predict the disease early to control the widespread of the disease. Here, we need to collect sample data from a liver-infected patient to detect liver disease. Machine learning plays a very important role in detecting liver disease. The main objective of the study is to detect liver disease based on relevant information stored in a large database. It is very important to detect liver disease early in order to save the patient's life and help us live a normal life as before. Machine learning is growing very important as it helps in analyzing and summarizing data from different perspectives.

The proposed system began with a strong desire to forecast liver disease using an effective model and to achieve a high level



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Title DETECTION OF ANDROID MALWARE USING GENETIC ALGORITHM BASED ON OPTIMIZED FEATURE SELECTION

Volume 11, SPL ISSUE 04, Pages: 22-39 Paper Authors **Mr. Anand Thota ,Shaik.Raheem, P. Krishna Mouli, P.Bhargav,B.Lakshmi Prasad**





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DETECTION OF ANDROID MALWARE USING GENETIC ALGORITHM BASED ON OPTIMIZED FEATURE SELECTION

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ABSTACT:

Android is a open source operating system which is developed by google.Most of the people use android mobiles.So they have become a major target for the cyber attackers.This study focuses on machine learning approach for malware detection which uses evolving Genetic algorithm.Genetic algorithm is helpful in achieving optimization.machine learning classifiers are trained with important features from the genetic algorithm,they can be able to detect malware is evaluated before and after feature selection.Researchs tell us that Genetic algorithm gives the best feature set,with feature dimension reduced to less than half .By this we can achieve an accuracy of 94 percent.

KEYWORDS:

AndroidMalwareDetection(AMD),GeneticAlgorithm(GA),MachineLearning(ML),Suppo rtVectorMachine(SVM),Neural Networks(NN),Optimized Feature Selection using Genetic Algorithm (GA).

A PROJECT REPORT ON BIKE SHARING DEMAND ANALYSIS USING ENSEMBLE REGRESSORS

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Abstract:Bike-sharing has grown in popularity as a novel means of transportation around the world. It's vital to understand how various elements, such as land use and the built environment, influence demand in order to establish and build bike-sharing programmes. The majority of studies used a holistic approach to the subject, relying on regression models with spatially homogeneous component coefficients. However, ignoring the local spatial consequences of several components is unrealistic. To study how land use, socioeconomics, and transportation infrastructure affect bike-sharing demand at different stations, we constructed a regression model with spatially changing coefficients. We develop station-specific regression and use a network topology to favour close stations with comparable coefficients, unlike earlier geographically weighted models. In terms of out-of-sample prediction, the suggested method outperforms existing machine learning and geo statistics techniques.

Keywords: Autoregressive Moving Average (ARMA), Autoregressive Integrated Moving Average (ARIMA), univariate regression, multivariate regression, supervised learning, geographic attributes, mean square error, gradient-based boost.

1.Introduction:Concerns about urban sustainability and climate change have sparked a surge in interest in green mobility options like bike sharing. By acting as a "last mile" connector to public transportation, bike-sharing systems can assist reduce air pollution and natural resource consumption while also boosting multimodal transportation links. Several communities have created bike-sharing programmes as a result of these benefits.

By 2014, 855 cities had bike-sharing programmes in place, with 946,000 bikes in use, and that number has now risen to almost 1500 cities with 4.5 million bikes. The majority of existing bike-sharing systems, such as the BIXI system in Montreal, Canada, are station-based, with users borrowing and returning bikes at designated docking stations. Weather, physical environment and land use, public transportation, socio-demographic variables, and temporal factors all influence bike-sharing demand, according to various research.

Understanding how different factors affect user demand at the station level is critical for the establishment and operation of a bike-sharing service, as planners and operators may employ different approaches depending on the specific circumstances. Understanding the relationships between these variables and user demand can aid service planning by allowing us to forecast future demand for additional stations.

2. Related Work:

In [1] **Froehlich,Neumann, and Oliver** Models were employed to predict the amount of bikes available at each station. The four options are last value, historical mean, historical trend, and Bayesian network. Autoregressive Moving Average (ARMA) and Autoregressive Integrated Moving Average (ARMA) are two time series analysis methodologies used to anticipate the number of available bikes/docks for each bike station (ARIMA). Kaltenbrunner, Meza, Grivolla, Codina, and Banchs have all adopted ARMA. Yoon, Pinelli, and Calabrese proposed a modified ARIMA model that takes into consideration geographic and temporal factors.

In [2] **Faghih-Imani et al** bike-sharing demand in Montreal was investigated, taking into account meteorological and temporal factors. A linear mixed model was employed to capture the relationships between repeated observations of the same station; a similar technique was previously applied on a Toronto bike-sharing system.

In [3] **Shen et al**Over the period of nine days, a SAR model was utilised to explore the factors that influence the utilisation of dockless bikes. The spatial influence was introduced using a spatial weight matrix defined as the inverse distance between neighbourhoods within 5km. Guidon et al. (2020) compared a SAR model to random forests in bike-sharing demand modelling; the results showed that SAR outperformed random forests due to its ability to integrate spatial dependence.

In [4] **Bao et al** Researchers used a simple SVC model–geographically weighted regression–to capture the spatial heterogeneity of the effect of points of interest (POI) on bike-sharing demand (GWR). The weights in a weighted local regression model are defined by the distance between two data points.

In [5] **Munira and Sener**Researchers looked at how socioeconomic and land-use characteristics influence Strava bike activity using a spatially weighted Poisson model (GWPR). Traditional GWR coefficients are all local variables; however, in a semi-parametric GWR (S-GWR) model, both local and global variables can be included in the regression model.

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Title A CNN BASED APPROACH TO IDENTIFY NOVEL DISEASES IN PLANTS

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Paper Authors

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A CNN BASED APPROACH TO IDENTIFY NOVEL DISEASES IN PLANTS

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Abstract:

The most recent development in the field of farming is utilizing Machine Learning and Deep Learning methods to identify its problems. Deep convolutional neural networks are very effective in this field to identify and classify the diseases that are affecting the crop. ResNet-50 is a layered network which uses computer vision as input to organize the model. We trained it using the Plant Village dataset which contains over 54000 images in 38 different classes of species and diseases. The CNN with five layered structures maintained 95.6% accuracy and the classification model was shown to be very effective on the testing data.

Introduction

Artificial intelligence is founded on the idea that human intelligence may be described in such a way that a computer can simply imitate it and carry out tasks ranging from simple to sophisticated. Artificial intelligence aims to improve learning, reasoning, and perception.

Agriculture and farming are two of the world's oldest and most essential occupations. It has a significant impact on the economy. Agriculture is a \$5 trillion industry around the world.

By 2050, the worldwide populace is anticipated to contact in excess of nine billion individuals, requiring a 70% increment in agricultural creation to satisfy need. As the total populace develops, land, water, and assets become inadequate to keep the interest store network going. Therefore, we need to adopt a more essential strategy and become more proficient in how we farm so that we can be more productive.

The global population has already surpassed 7.5 billion people in 2017, and it is expected to reach 9.7 billion by 2050. The need for food is increasing as the world's population grows. Agriculture is one of the most frequent jobs in India. Experts estimate that roughly 20% of India's population works in agriculture-related employment, yet agricultural products make for only 8-10% of Thailand's gross domestic product (GDP). We are certain that technology can be integrated into agriculture to improve agricultural production efficiency and crop yields.

In this paper we build an overall model for all the plants and diseases available and maintain the accuracy of the model. The data from the publicly available website from plantvillage.org is used. We give the input images to the CNN network and it automatically identifies the disease, we build the architecture of it as light as possible to implement it in real time devices like mobile phones with simple applications as they have limited computational power.

Efforts to build automated methods for detecting plant illnesses using visual symptoms on leaves have exploded due to the advent of computer vision models. These methods attempt to make farmer participation as simple as feasible while also making the discovery system as idiot proof as could be expected. Preceding the inescapable accessibility of profound learning models, specialists generally depended on picture handling/include extraction to make sickness conclusion calculations, with conflicting outcomes. The most difficult part of this technique, characterizing manifestations for PC acknowledgment, has been overwhelmed by using profound learning, in which the models don't should be indicated and rather become familiar with the attributes through streamlining. In recent years, a lot of research has successfully used deep learning models to achieve varying degrees of accuracy on laboratory/field pictures. When evaluated on data that is identical to that used during training, these accurate classifiers accomplish high exactness, however when tried on various information, they flop appallingly. For

instance, Mohanti[11] and Ferentinos [19] found that preparation models accomplished exactness and certainty in excess of close to 100%, however



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Title DETECTION OF FAKE AND CLONE ACCOUNTS IN TWITTER USING CLASSIFICATION AND MAXIMUM REDUNDANCY FEATURE SELECTION

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Paper Authors V.NavyaSree, B.K.N.V. Lakshmi Gowri, M.Likitha, K.Uma,K.Likitha





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DETECTION OF FAKE AND CLONE ACCOUNTS IN TWITTER USING CLASSIFICATION AND MAXIMUM REDUNDANCY FEATURE SELECTION

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Abstract:

Online Social Network (OSN) might be an organization center point where individuals with comparable interests or certifiable connections interface. As the recognizable nature of OSN is expanding, the success and security issues related with it comparably are rising. Fake and Clone profiles are making hazardous security issues to loosened up association customers. Cloning of client profiles is one genuine danger, where ahead of time existing client's subtleties are taken to make copy profiles then, at that point it's mauled for harming the personality of novel profile proprietor. They can even dispatch risks like phishing, following, spamming, etc Fake profile is that the game plan of profile inside the name of an individual or an affiliation which doesn't actually exist in online media, to hold out unsafe exercises. In this paper, an area system has been proposed which may see Fake and Clone profiles in Twitter. Counterfeit profiles are perceived kept up with game plan of rules which will sensibly orchestrate phony and veritable profiles.

For Profile Cloning attestation two frameworks are used. One utilizing Similarity Measures and along these lines the other utilizing C4.5 decision tree assessment. In Similarity Measures, two kinds of likenesses are thought of - Similarity of Attributes and Similarity of Network relationships.C4.5 sees clones by building decision tree by contemplating information secure. An evaluation is formed to perceive how well these two techniques help in unmistakable clone profiles.

Introduction

In the present generation, everyone in society has gotten related with the Online Social Networks (OSN). These OSN have carried out a remarkable improvement inside the way in which we pursue our public movement. Making new colleagues, keeping in touch with them and understanding their updates has gotten less difficult. In any case, with the speedy move of web-based media various issues like fake profiles, online emulate have moreover developed. There are no feasible plan existing to control these issues. Counterfeit records can be either, human generated, computer generated (furthermore implied as "bots"), or cyborgs [1]. A cyborg is half-human, half-bot account [1]. Such a record is really opened by a human, yet beginning there onwards the activities are electronic by a bot. To divert into an individual from the OSN the customer needs to make his profile by entering information like name, photo, date of birth, Email ID, graduation nuances, working climate, old locale, interests, and so on [2][3].

A piece of the fields are mandatory and some are optional and it shifts from one OSN to the another. These districts are outstanding a direct result of individuals' advantage in discovering partners, sharing pictures, naming individuals in pack photographs ,sharing their thoughts and perspectives on standard subjects, stay mindful of inconceivable business relationship and general interest with others. In this paper we pondered a structure in which changed affirmation of phony profiles is conceivable and is competent. This development utilizes plan

procedures like Support Vector Machine, Random Forest and Deep Neural Networks to bundle the profiles into phony or certifiable classes. As it is an altered affirmation framework, it very well may be applied satisfactorily by OSN which has a huge number profile where profiles can't be examined genuinely .We overview whether quickly accessible and arranged elements that are utilized for the useful region ,utilizing AI models.



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Title INDIAN PREMIER LEAGUE MATCH SCORE PREDICTION USING MACHINE LEARNING ALGORITHMS

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Paper Authors V.Sowjanya,A.Pramod,G.Sandhya,K.Uma,K.Hema Vinay Kumar





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INDIAN PREMIER LEAGUE MATCH SCORE PREDICTION USING MACHINE LEARNING ALGORITHMS

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Abstract:

In cricket, especially the 20-20 strategy is most watched and valued by individuals, where it's illogical for anyone to examine who will oversee the game until the last wad of the last wrapped up. In India, The IPL began in 2008 and eventually this is the prevalent prominent Twenty20 class inside the planet . So we chose to energize an AI model for foreseeing the deferred results of its matches. Overpowering during a game relies on many key factors sort of a trademark natural components advantage, past introductions consequently ground, records at an equivalent scene, the general information on the players, record with a picked obstruction, and likewise the general current kind of the get-together and moreover the individual player. This assignment gives about the key factors that influence the aftereffects of the match and accordingly the discretionary woods model that the greater part vivaciously fits this information and gives the single measures. Cricket, the standard and thoroughly played game across India which has the prevalent critical fan base. IPL follows a 20-20 game-plan which is unimaginably whimsical. IPL match marker could even be a ML based guess approach where the informational indexes and past nuances are prepared out and out measurements covering terrifically significant factors, for example, Toss, environment , Captains, Favorite Players, Opposition Battle, Previous Stats and so forth.

Key Words: The Indian Premier League; Machine learning, rectilinear relapse, Runs scored, Prediction, Winning likelihood, Random Forest Classification, Prediction System, Score Prediction, Cricket, Decision Tree, Gradient Boosting, Linear Regression.

Introduction

IPL is an expert cricket class dependent on Twenty20 arrangement and is represented by the BCCI. The class happens each year with taking part groups' names addressing different urban communities of India. There are numerous nations dynamic in getting sorted out Twenty20 cricket leagues. The IPL (Indian Premier League) is a 20-20 cricket class in India where eight groups (addressing eight urban areas in India) play against one another.

In India, The IPL started in 2008 and presently it's the chief notable T-20 pack inside the world. So we chose to encourage an AI model for anticipating the deferred outcome of its matches. Overpowering during a game relies on many key factors kind of a living space advantage, past introductions thusly ground, records at a vague scene, the general information on the players, record with a particular obstruction, and the overall current kind of the social gathering besides the individual player. i.e., eventually in International, T20 and Test Matches.

IPL is a 20-20 cricket competition association set up with the goal of advancing cricket in India and along these lines supporting youthful and skilled players.A method of foreseeing the result of matches between different groups can help with the group determination measure. The made models can help supervisors during the IPL matches to guage the strength of a social occasion against another.

II. LITERATURE WORK

The related work for this project is taken from and implemented is "Foreseeing Cricket Score By Using Machine Learning Concepts" H.V Ramachandra Prof., Jspm's, RSCOE. R.R.Kamble Assistant Prof., Jspm's, RSCOE from this reference able to get the minimum knowledge of this project. Daniel etal.have examined many features to anticipate the match champ before the start of the



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Title ONLINE CUSTOMER BUYING PROBABILITY DETECTION USING K BEST AND RANDOM FOREST ALGORITHMS

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Paper Authors

V.Sowjanya, A. DurgaBhavani, K.B.S.S. Nandini, M.V.V.S. Chaturya, K. Geethika





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ONLINE CUSTOMER BUYING PROBABILITY DETECTION USING K BEST AND RANDOM FOREST ALGORITHMS

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Abstract:

The customer conduct investigation is the method which is applied to dissect buyer conduct. The client conduct investigation has the three phases which are pre-dealing with, feature extraction and game plan for assumption. In the past work, Naïve Bayes knn and Fc-LSTM was applied for the buyer conduct examination. In this work, a half breed classifier is intended for the client conduct examination utilizing K-best and irregular backwoods. Furthermore, our work is identified with client conduct examination. So in the client conduct investigation method which is intended to explore work will be founded on the cross breed characterization. The half and half arrangement approach will be work on two classifiers which are Meta classifiers and base classifiers. The base classifier will separate the elements of the dataset and it will set up connection between target set and property set. In the last, the Meta classifier will be applied which can create the last characterized consequence of expectation.

Key Words: K-best random forest, Revenue, Classification meta class, Demographics prediction.

Introduction

These days, individuals like to purchase online as opposed to on the spot. Online exchanges make individuals' lives simpler. The condition requires the dealer to comprehend the attributes of the expectation of the planned purchaser. This study aims for a genuine time online customer conduct forecast framework which predicts the guests shopping plan when the site is visited and demographics like age, gender, salary. Buy choice interaction depicts the grouping of activities performed by a client when choosing to get a particular item or administration. It can likewise be portrayed as a cycle of critical thinking, where a client fulfills his requirements after smart contemplations .The result of a buy choice interaction is a choice if a client will purchase a given item and afterward we ascertain the likelihood of purchasing.

II. LITERATURE WORK

The related work for this project is taken from and implemented is "Client Purchase Intent Prediction Under Online Multi-Channel Promotion " Chen Ling, Tao Zhang, and Yuan Chen. Published in: IEEE Access (Volume: 7) this reference is in a position to urge the minimum knowledge of this project.

"Utilization of Naive Bayes classifier calculation to identify clients interests in purchasing web tokens"

D R Prehanto1, A D Indriyanti1, K D Nuryana1,Content from this work could likewise be utilized under the provisions of the Creative Commons Attribution 3.0 permit. Distributed under permit by IOP Publishing Ltd.Journal of Physics: Conference Series, Volume 1402, Issue 6.

"The association impact of online survey language style and product type on buyers' buy aims" Zhen Liu, Shao-hui Lei, Yu-langGuo and Zhi-ang Zhou Palgrave Communications volume6, Article number: 11 (2020).

III. EXISTING SYSTEMS

The showcasing of the ticket business additionally exploits online channels to direct commercials ,while clients can have prompt admittance to the present special data and think about costs and administrations between various online channels to help their buying choices.

Albeit most exploration exhibits a full scale level expansion in buy change rate inside the presence of advancements, still some potential clients probably won't finish the obtaining for different reasons like missing the advancement data.

Drawbacks:

•Features selection is not good.

•Miss probability occurrence by using traditional models KNN, NB.
BREAST CANCER PREDICTION ANALYSIS

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Abstract

According to the World Health Organization, breast cancer is the most frequent cancer in women, affecting 2.1 million people each year and causing the most cancer-related deaths in women (WHO). Breast cancer killed an estimated 627,000 women in 2018, accounting for almost 15% of all cancer deaths among women. Breast cancer rates are increasing in practically every country in the world, while they are higher among women in more developed countries. Breast cancer prognosis and survival are greatly improved by early detection. Early diagnosis and screening are two methods for detecting breast cancer early. Because the majority of women are identified late, early detection programmes should be prioritised in low-resource areas with a lack of health infrastructure.

In order to provide fast cancer treatment, early diagnosis programmes strive to decrease obstacles to care and/or enhance access to effective diagnosis services. The goal is to increase the percentage of breast cancers discovered early, allowing for more effective treatment and a lower risk of breast cancer death. Because early detection of cancer is crucial for effective treatment of breast cancer, we apply different machine learning algorithms to predict whether a tumour is benign or malignant depending on the attributes presented by the data.

1.Introduction

Breast cancer (BC) is one of the most common diseases among women worldwide, accounting for the majority of new cancer cases and cancer-related deaths, making it a huge public health burden in today's society, according to global data . Early detection of BC improves the prognosis and chances of survival by allowing patients to receive timely clinical treatment. Patients could avoid unnecessary therapies if benign tumours were classified more precisely. Patients could avoid unnecessary therapies if benign tumours were classified more precisely.

As a result, precise BC diagnosis and classification of individuals into malignant or benign groups is a major study topic. Due to its particular benefits in recognising fundamental characteristics from complicated BC datasets, machine learning (ML) is commonly recognised as the approach of choice in BC pattern categorization and forecast modelling.

2.Related work

[]**1V Chaurisya & S Paul** Patient features are statistically assessed based on the type of individual feature extracted from data materials. Then 51 traits or features are chosen, and the relevance score of each feature is determined. Repeated 10-fold cross validation is used in the XGBoost algorithm

[2]Bellaachia et al simple and quick classifier It is referred to be 'Naive' since it posits mutually independent qualities.

[3]Khuriwal And Mishra A binomial target characteristic can be used to forecast the class. [4]Keles, M. Kaya SVMs transform the hyperplane that divides the data points into two groups by transforming the input vector into a higher-dimensional feature space. The marginal distance between the chosen hyperplane and the occurrences that are closest to the border is maximised.

MERCARI PRICE SUGGESTION USING LIGHTGBM

Mrs.V.Sowjanya¹, Pokuri Pallavi², Pitta Madhuri³, Kuncham Vathsalya⁴ ¹Assistant Professor, CSE, PSCMRCET, Vijayawada, Andhra Pradesh ^{2,3,4}Student, CSE, PSCMRCET, Vijayawada, Andhra Pradesh

ABSTRACT

Modern gradient boosting software program frameworks, together with XGBoost and LightGBM, put into effect Newton descent in a useful space. At every boosting iteration, their aim is to discover the bottom speculation, decided on from a few base speculation Elegance, this is closest to the Newton descent course in a Euclidean sense. Typically, the bottom speculation elegance is constant to be all binary choice bushes as much as a given intensity. The opposition is organised via way of means of Mercari and it's far approximately constructing a version which can robotically and as it should be shows a promoting charge for a given object primarily based totally at the records that the vendor is providing. The supplied records might be the outline of the object, the category, the emblem name, the object situation or the transport choice in addition to different things. This is a regression trouble and Natural Language Processing (NLP) strategies are used as well. An giant facts and specific capabilities are blended with numerical ones. The advanced modal produced promising results. As the device mastering version goes to run as an internet app the time latency for the prediction need to be less.

1. INTRODUCTION:

Mercari is an internet buying market that's powered via way of means of one in all the most important network of Japan in which customers can promote quite lots anything. The network desires to provide rate pointers to the dealers however is a hard undertaking because the dealers are enabled to position pretty much anything, or any package deal of factors, on merceri market. Because the rate of a product relies upon on it's emblem and the product usage. It's pretty not unusual place to get unique fees for the equal merchandise with unique brands. Mercari wishes us to construct an set of rules that mechanically shows the proper product fees from the userinputted textual content descriptions in their merchandise, consisting of info like product class name, emblem name, object condition, etc. Business targets and constraints The aim is to clear up the trouble of suggesting an appropriate rate of merchandise to on line dealers.

Mercari is an e-trade organization presently operational with inside the US and Japan. This affords a platform in which clients can promote objects which might be now not useful. It attempts to make all of the procedures hassle-unfastened via way of means of supplying at-domestic pickups, equal-day delivery, and plenty of different advantages. You'll be supplied user-inputted textual content descriptions in their merchandise, consisting of info like product class name, emblem name, and object condition. Mercari is one such on line buying market, that's Japan's largest network-powered buying platform.

Mercari desired to provide pricing pointers to its dealers. This is hard due to the fact their dealers can promote pretty much anything, or any package deal of factors on Mercari's market. To apprehend why this trouble is hard to clear up, recall the subsequent merchandise which might be placed on sale. The capabilities we've in teach records are train id, name, item condition id, category name, brand name, rate, shipping, item description of the object. The capabilities aren't handiest specific and numerical. Mercari, Japan's largest network-powered buying app, is aware of this trouble deeply. They'd want to provide pricing pointers to dealers, however that is hard due to the fact their dealers are enabled to position pretty much anything, or any package deal of factors, on Mercari's market. This is an initial explanatory Data analysis for the Mercari Price Suggestion with matplotlib.



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Title ASSOCIATION RULE BASED BOOK RECOMMENDATION SYSTEM USING NLP

Volume 11, SPL ISSUE 04, Pages: 1-12 Paper Authors Mrs. V. Sowjanya, M.Sai Sudha, 3 Sk.Sameena Parveen, P.Chinmaya Srinivas, B.Hema Latha





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ASSOCIATION RULE BASED BOOK RECOMMENDATION SYSTEM USING NLP

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Abstract

Every year the university library introduces a many books. A lot of time needs to be spent by user and similarly, all the books are may or may not be effective. So, this results in wasting time. When the library contains more books, it is difficult for users to choose an appropriate book based on a particular subject. To overcome this situation, the unique and simple solution called as a Book Recommendation System. To implement this, the book recommendation system follows the step-by-step process. Firstly, It follows the collaborative filtering method. That means, It gathers the information from previous user's review to recommend the books based on their similar predilections. Gathering of the previous user's reviews of the different textbooks through the questionnaire form is the foremost task. To build a strong recommendation system, it considers both comments and ratings. NLP is the best choice for analyzing comments like whether the comment is given by the user is positive or negative or neutral. After this, the technique called as association rule mining is very helpful for strong recommendations. In this technique, the apriori calculates three parameters like support, confidence, and lift for each unique textbook based on comments and ratings. Finally, it provides the recommended data-set. This data-set contains only positive records and these are useful for the users. Based on the user requirements this system suggests textbooks for the users.

Keywords: Collaborative Filtering, NLP, Association Rule Mining, Apriori Algorithm, Logistic Regression, SVM, Decision Tree Classifier, Logistic Regression, SVM, Random Forest Regression.

I. INTRODUCTION:

Currently recommendation approaches are used to suggest the different items to the users based on their predilections of . The information filtering systems are also known as recommendation systems that are used to forecast the preferences or ratings of a user wants to give a particular item. YouTube, Amazon, Netflix etc., are some of the examples of the

recommendation systems. The main usage of a recommendation is to, it can reduces the time for searching or finding a particular item. There exist many drawbacks for traditional method called as searching a perfect book based on the particular subject

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Title DETECTION OF INTRUSION ATTACK USING

CUSTOMISED ANN

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Paper Authors

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DETECTION OF INTRUSION ATTACK USING CUSTOMISED ANN

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Abstract

Malicious assaults on client or server machines via the internet are more common than ever, and there is no way to prevent them. To address this, we suggest a method in which an IDS is requested (Network Intrusion Detection System). IDS will keep an eye on the provided data and determine whether it contains normal or malicious signatures. The request will be dropped if it is discovered to contain attack signatures. When new request signatures arrive, the IDS will be taught with all of the options for attacking signatures with machine learning techniques and then produce a training model, which will be used to future requests to determine whether they contain normal or attack signatures. We used machine learning methods such as SVM and ANN, as well as experimentation, to come up with a solution in terms of accuracy, the ANN outperforms the conventional SVM.

To avoid all attacks, IDS structures have evolved in such a way that every incoming request is analysed to locate such assaults, and if the request is coming from genuine users, it will only be sent to the server for processing; if the request contains assault signatures, the IDS will drop the request and log such request statistics into a dataset for future detection. To find such attacks, IDS might be taught with all possible assault signatures resulting from a malicious user's request first, then generate a schooling version. When IDS receives a new request, it will be practised on that teach version to determine whether the request belongs to ordinary elegance or assault elegance. Many statistics mining classes or prediction algorithms could be utilised to teach such fashions and predictions.

Keywords: Network Security, attacks, hackers, Cloud-environment security, zero-trust model (ZTM), Trend Micro internet security.

Machine Learning Based Face Recognition System

IMV Krishna I¹, R Madhu Kanth² and V. Sowjanya² © 2022 ECS - The Electrochemical Society ECS Transactions, Volume 107, Number 1 Citation IMV Krishna I *et al* 2022 *ECS Trans.* **107** 19979

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 2 n/a

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Abstract

This task intends to provide progressed protection by using way of allowing a patron to understand who is in reality attending to the framework using facial acknowledgment. The framework allows sincerely permitted customers to get entrance. Python is a programming language implemented alongside machine getting to know methods and an open supply library that is applied to configuration, manufacture, and educate machine gaining knowledge of fashions. An interface tool is moreover accommodated unapproved clients to enlist to acquire the front with the sooner consent from the Admin.

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Title An Improved Machine Learning Framework for Cardiovascular Disease Prediction

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Paper Authors Sarath Chandra Banala, V. Sowjanya





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An Improved Machine Learning Framework for Cardiovascular Disease Prediction

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Abstract:

Cardiovascular illnesses are the most life-threatening syndromes in the world, with the greatest fatality rate. They have become quite common throughout time, and they are now overstretching the healthcare systems of countries. High blood pressure, family history, stress, age, gender, cholesterol, BMI, and an unhealthy lifestyle are all key risk factors for cardiovascular disease. Researchers have proposed numerous ways for early diagnosis based on these criteria. However, due to the inherent criticality and life-threatening dangers of cardiovascular disorders, the accuracy of offered procedures and approaches requires some refinement. A Machine Learning based Cardiovascular Disease Diagnosis framework is proposed in this paper for the accurate prediction of cardiovascular disorders. The approach mean replacement technique and Synthetic Minority Over-sampling Technique (SMOTE). Following that, the Feature Importance approach is used to choose features. Finally, for improved prediction accuracy, an ensemble of Logistic Regression and K-Nearest Neighbour (KNN) classifiers is presented. The benchmark datasets are used to validate the framework for achieving better accuracy. Finally, a comparison of framework to existing state-of-the-art approaches.

Keywords: Machine Learning; ensemble; SMOTE; cardiovascular prediction; feature importance.

I. INTRODUCTION

The current era's hectic pace leads to an unhealthy lifestyle that generates anxiety and despair. To cope with these conditions, people often turn to excessive smoking, drinking, and drug use. All of these factors play a role in the development of a variety of severe diseases, such as cardiovascular disease and cancer. Early detection of these disorders is critical so that preventative steps can be implemented before something terrible occurs. A disorder that damages the heart and the blood vessels is referred to as cardiovascular disease Coronary heart disease, stroke/transient ischemic attack (TIA/ Mini-stroke), peripheral arterial disease, and aortic disease are the four main kinds of CVDs [1].

CVDs are associated with hypertension, smoke, diabetic, body mass (Bms), fat, age, and family history. For several people, these factors are different. CVDs are brought on by a number of factors, like youth, genetics, strain, as well as an addictive personality. The main problem is to accurately forecast these diseases in a timely manner so that mortality can be decreased through appropriate medicine and other countermeasures.

Using various datasets and approaches, researchers have suggested multiple algorithms in order to anticipate cardiovascular diseases. Heart

Data Augmentation Techniques on Chilly Plants to Classify Healthy and Bacterial Blight Disease Leaves

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Abstract—Designing an automation system for the agriculture sector is difficult using machine learning approach. So many researchers proposed deep learning system which requires huge amount of data for training the system. The proposed system suggests that geometric transformations on the original dataset help the system to generate more images that can replicate the physical circumstances. This process is known as "Image Augmentation". This enhancement of data helps the system to produce more accurate systems in terms of all metrics. In olden days when researchers work with machine learning techniques they used to implement traditional approaches which are a time consuming and expensive process. In deep learning, most of the operations are automatically taken care by the system. So, the proposed system applies neural style and to classify the images it uses the concept of transfer learning. The system utilizes the images available in the open source repository known as "Kaggle", this majorly consists of images related to chilly, tomato and potato. But this system majorly focuses on chilly plants because it is most productive plant in the South Indian regions. Image augmentation creates new images in different scenarios using the existing images and by applying popular deep learning techniques. The model has chosen ResNet-50, which is a pretrained model for transfer learning. The advantage of using pretrained model lies in not to develop the model from scratch. This pre-trained model gives more accuracy with less number of epochs. The model has achieved an accuracy of "100%".

Keywords—Image augmentation; geometric transformations; transfer learning; neural style learning; residual network

I. INTRODUCTION

The main goal of the data augmentation technique is to develop the model which is capable of handling the input that is unknown to the system and to develop a generalized training model. The proposed system focused on chilly plants but there is a situation where it can get similar leaf images of chilly but it is really chilly. So the proposed system uses the neural style learning to combine images of different plants and produce a new synthetic image. The image augmentation acts as a pre-processing step in the deep learning area to train the model. The proposed paper discusses the basic image manipulation operations, deep learning[5] and meta-learning Deepthi Kamidi³

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techniques that can be performed on the image. The image augmentation operation is classified into two ways as shown in Fig. 1.

Offline mode stores the different augmented images in the hard disk, which requires high configuration of processor and RAM to run the program. Online mode utilizes the cloud services to store the image and it uses GPU's to run the program [19]. Google CoLab is an open source tool that run huge amount of images at a faster rate. Among the two types augmentations namely offline and online modes, this paper considers the online augmentation techniques since all the operations are performed in cloud using GPUs due to which waste of disk space is reduced. The offline data augmentation is preferred for the smaller datasets; the newly created images will be stored in the disk. This offline process is timeconsuming and is expensive whereas in online or real data augmentation the transformation images occur randomly on different batches and the model is trained with more cases in each epoch in this method [8]. There three ways to generate augmented images as shown in Fig. 2.



Fig. 1. Modes of Image Augmentation.



Fig. 2. Different Ways of Image Augmentation Techniques.

Synthetic Data Augmentation of Tomato Plant Leaf using Meta Intelligent Generative Adversarial Network: Milgan

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Abstract—Agriculture is one of the most famous case studies in deep learning. Most researchers want to detect different diseases at the early stages of cultivation to save the farmer's economy. The deep learning technique needs more data to develop an accurate system. Researchers generated more synthetic data using basic image operations in traditional approaches, but these approaches are more complicated and expensive. In deep learning and computer vision, the system's accuracy is the crucial component for deciding the system's efficiency. The model's precision is based on the image's size and quality. Getting many images from the real-world environment in medicine and agriculture is difficult. The image augmentation technique helps the system generate more images that can replicate the physical circumstances by performing various operations. It also prevents overfitting, especially when the system has fewer images than required. Few researchers experimented using CNN and simple Generative Adversarial Network (GAN), but these approaches create images with more noise. The proposed research aims to develop more data using a Meta approach. The images are processed using kernel filters. Different geometric transformations are passed as input to the enhanced GANs to reduce the noise and create more fake images using latent points, acting as weights in the neural networks. The proposed system uses random sampling techniques, passes a few processed images to the generator component of GAN, and the system uses a discriminator component to classify the synthetic data created by the Meta-Learning Approach.

Keywords—Basic image operations; meta-learning techniques; generator; discriminator; synthetic data; sampling techniques; latent points; kernel filters

I. INTRODUCTION

Deep Learning algorithms are famous for solving case studies related to medicine and agriculture. The efficiency of the deep learning model depends on the selection of neural network design. The process of defining the best estimators for a network is coined "Hyper Turning." he system needs more balanced and huge of data to estimate the proper parameters that suit the network. It is highly impossible to collect the real-time images from the farming lands using digital cameras, and the collection of satellite images covers the entire crop. However, it cannot provide individual leaf analysis [19]. So, the agriculture industry needs a system that can generate similar images covering controlled and

uncontrolled situations like blur leaf images due to heavy wind effects, half leaf images due to the distance, and others. The generation of similar images is known as "Data Augmentation," and the data is known as "Synthetic Data.' The previous researchers created synthetic data using basic image manipulation techniques, GANs or Auto encoders and decoders [10]. The number of images will increase using manipulation techniques like transformation and rotation, but they cannot produce uncontrolled images. Researchers have introduced GANs and encoders over the past few years to create compressed and noisy images so they can handle uncontrolled conditions. However, due to single components of GANs, they produce more noise than required. The proposed system to reduce the number of noisy images and enhance the quality of controlled images introduced a metaintelligent environment where the architecture is improved by increasing the components of GAN, and these components take the manipulated images rather than the original images from the GAN. The proposed research generates images using simple operations, as discussed below.

A. Basic Image Operations

Traditionally, to manipulate the images, researchers performed Geometric transformations [18], which involve rotations, flipping, resizing, shifting, zooming, cropping, and noise operations. The system can also perform color space transformations. Images are composed of RGB color conventions but must be converted into grey-scale or other color saturation values for efficient data processing. The essential operations involve a kernel filter [16], extracting the region of interest from the image using convolution neural networks. The image is saved as a two-dimensional matrix, and the filter does a dot product between the inputs and filter layers and then adds the values to get a single value in each location. Edge detection, image sharpening, and blurring operations benefit from kernel filtering. The most recent improvements are the random erasing technique to remove pixels in an image by choosing a rectangular region based on the likelihood determined by aspect and area ratios. The Random Erasing technique is essential for image recognition, object detection, and people re-identification. It can be used on pre-trained models and easily combined with neural networks [13]. The different types of image operations are shown in Fig. 1.

Performing Inferential Statistics To identify important features in Cross Language Informational Retrieval using clustering.

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Abstract: Internet is a massive information retrieval resource that is extensively used by all the users around the world, if we discuss about the truth in these present days online sites were used by the individuals all throught the world, they should come over all the language barriers. In these present days, information is available differently and the obstacles of the language creates obstacles to cross-clutural communication. By introducing CLIR system we can easily come over all the struggles in the communication problem. CLIR refers to the availability of information by using CLIR we can get the output information in different languages by giving query in his (or) her own native language. CLIR main goal is not to just provide the translation but also gives the data which is related to the user query. This paper takes an overview of the number of oppositions and the different types of problems in CLIR like as morophologicalerrors, translation, translationambuigity, phrase translation.

Keywords: CLIR, Lexical Semantics, Disambiguation, machine translation.

1.Introduction:cross language information retrieval is a system that is used to get the data from the internet sites in various languages.when the client searches the query in their native language CLIR gives the related information (or) documents in different languages. In machine translation the system discovers the translation of the query and collects the related data from different languages.Machine translation uses the normalization technique for getting the data which matches with the already available indexes, and observes the how the words are weighed in a user given query whereas CLIR is distinct and a bit easier than the machine translation. On comparing with the CLIR machine translation is a bit difficult why because it has to translate each term from one source, and the result should be grammatically valid.CLIR does not contain any specific order it has only randomly arranged words.CLIR gives the related data in various languages from a user local language query, Soby using this we can give different translations in multiple ways.wherereas CLIR systems are heavier than the machine translation systems why because MT focuses on particular domains but CLIR deals withspecfic independent methodology, and different employing techniques which the related information to the user given queryCLIR holds a large number of words because it works on different languages.Numerous workshops are being held to adresssheterogenous concerns, Each workshop covers with different types of languages apart from the English, about various languages like Chinese, Italin, Spanish, Arabic were talked by TREC .So far,German,French,Swedish,Russian,Spanish, Dutch these languages were focused by CLEF, andChinese, Korean, Japanese these languages were concentrated by NTCIR.

BOOK RECOMMENDER SYSTEM USING SURPRISE ANALYSIS MODULE

Ms Sri Silpa Padmanabhuni¹,Janga Manikanta Reddy ²,Koduri Sai Satyanarayana³,Avula Sai Hitesh Yadav⁴,Mugada Satya Varaprasad Yadav⁵,Jorige Abivignay⁶ ¹Associate Professor,CSE,PSCMRCET,Vijayawada,Andhra Pradesh ^{2,3,4,5,6}Student, CSE, PSCMRCET, Vijayawada, Andhra Pradesh

Abstract :

The latest exploring done by the users that assist them in internet and receiving information based up on their likes and opinions is done with the help of the Recommender System and nowadays it is widely used in areas of domains like ticket booking and selection of choice of music and food in different hotels that gives the best selection and still its applications are been widely investigated in many other areas how good it can be used to make the choice of selection as easy as possible. This Recommender System also serves the selection of books of different domains and gives them suggestions in choice of considering their thoughts and ideas and present them the best selection that they could give them. The architecture of the entire system that is suggested is described along with the working model that reflects the best suggestions on different users decisions.

Key-Words:- Recommender system, Surprise module, Data mining.

1.Introduction:-

The bookstores are developing various methods in order to attract the people to sell their books and gain profits in order to sell the books in a profitable way such that they match their books according to the people's likes and opinions which makes their business healthy in now a days comepetition. The Recommendation system helps users in building their own profiles based on up their history of usage of their books that they read and what they browse for in internet and gives them the profile that easily gives the best selection in terms deciding a book. The profile that is generated by the different users in turn will also will be helpful in selecting other people of their wide areas of different likes in domain of the books.

There are some recommendation systems that are developed by the people in knowing to know what the users really desire for and developed like semantics and scalability that makes recommendations good fits in different domains. The major problem in the profile creations and doing recommendations is dynamic user nature which means the likes of the people can change at any time but the profiles cannot be updated every time the likes of the people changed and a very deep investigation is being carried on in order to overcome this problem and makes it a better tool for the user to use.

Nearest Neighborhood:

Nearest neighbor algorithms are the most commonly used type of collaborative filtering. There are two types of CF, user-based and item-based. Let's start with a user-based CF. For users u_{i} , i =



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Title: STOCK PREDICTION USING ENHANCED LSTM

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STOCK PREDICTION USING ENHANCED LSTM Ms. P. Sri Silpa¹,A.Mallikarjuna Reddy²,MNV. SAI NADH³, K.B.V.P.S. MANEESH⁴, Y. GANESH BABU⁵

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Abstract

Most analysts, researchers, and investors face trouble in predicting stock volume and stock price. People pay more attention to stock trends to earn money rigorously. LSTM (Long-Short-Term-Memory) is used because it is a time series notation. In this model, a stock system uses two user-defined or customized activation functions. This model avoids the drawbacks of Hyperbolic Tangent (Tanh), and Rectified Linear Activation (ReLU) activation functions are integrated with LSTM to achieve accuracy which became important in the current society because most people are attracted to stock market to enrich their economic status. Failure of this model leads to illegal activities by human beings. In this model, there is a comparison between two stocks. The prediction of stock is considered by taking the apple data set (AAPL), which consists of 10 years' data, and Microsoft (MFST) consists of recent years' data. By this model, we can predict the volumes of stock of a company.

Keywords: Stock Price, Stock Volume, Long- Short Term Memory (LSTM), Hyperbolic Tangent (Tanh), Rectified Linear Activation (ReLu), Apple Data Set (AAPL), and Microsoft Data Set (MFST).

I. INTRODUCTION

Today a very often word we here in our daily life is financial marketing, it keeps on changing continuously and has many sectors involves in it, and due to that, the system incorporated is a bit complex. Here, people generally trade on stocks, currencies, etc and each entity is bounded with some equities and derivatives. Since the system is international and tends to connect remote people, the whole process had been automated and is performed on virtual



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Title: Twitter CRIMEPREDICTIONUSINGRANDOMFORESTALGORITHM

volume 11, Issue 06, Pages: 1438-1447

Paper Authors: Mrs.N.V.MahaLakshmi' S.Tejaswini, Ch.Jayapriya, Ch.DivyaSudha, Ch.TagoreBabu





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CRIMEPREDICTIONUSINGRANDOMFORESTA LGORITHM

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ABSTRACT:

Crime poses a serious threat to humanity. Many different forms of crimes occur in everyday life. These typesof crimes occur throughout the world. There are many different forms of crimes, including robbery, murder, assault,rape, battery, false imprisonment, kidnapping, and so on. All of these illicit behaviors are on the rise in modern society. To some extent, reducing crime aids in the resolution of this issue. It can be carried out by foreseeing a crime before itoccurs. The two basic ways to prevent crime before it occurs are crime prediction and crime identification. Severalthinkers have devised crime prediction models to aid in crime prevention. To calibrate the prediction models, themajority of them used Machine Learning Algorithms and Historical Crime Data. Machine learning is a branch of artificial intelligence that focuses on problem-solving. Machine Learning is a branch of artificial intelligence that workswithstatisticalapproachesthatallowcomputerstolearnfromtheirpreviousexperiences.Datagathering,categorization, pattern recognition, prediction, and visualization are all common steps in machine learning-based crimeanalysis. The

main goal of this project is to develop a prediction model based on a crime dataset in India that canaccuratelyforecastcrimelocationsusingmachinelearningalgorithms.

KEYWORDS:

Crime Prediction,Crime Rate,Numberof Crimes,RandomForestAlgorithm,DataAnalysis,Cri meForecasting, MachineLearning

1. INTRODUCTION

Developmentin humanstandardsof livingalongwith Crime rate is also increasing.AsTechnologyadvances, new kinds of Crimes are rising. Recently in human history, we Cyber Crime and in recent days see virtualrealityCrimes.Asaresult,CrimemaytakeSom elives.Itisbettertostopsomethingbadfromhappening ,thanifitis to deal with it after it has happened. As it is difficult for security forces to predict the crime before it's going tohappen. This would become a helping hand for the Security forces that

we hope for. This project helps them bypredicting the crime.By Analyzing the Previous Conditions and Crime records. That resultof analysis matchingwith recent conditions makes it predict the forthcoming crime. This helps the Security Forces by marking theanticipatedlocationsofCrimeinreal-time.

2. RELATEDWORK

Indifferentapplications, crimeprediction isvaried. the subsequents quaremeasure an umber of the studies:

BAYESIAN LOGISTIC REGRESSION ON BANK MARKETING ANALYSIS

N.V Maha Lakshmi¹,Byreddy Navya², Chirala jaya³,Dhulipalla Chandra Deepika⁴,

Jetti Nandini⁵

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ABSTRACT: With great predictive performance and good comprehensibility, logistic regression is one of the most common algorithms in customer churn prediction. This study shows how to use an adaptive Bayesian framework to investigate consumers' opinions of financial institutions' services in a target market. The method estimates the key factors of consumers' preferences for competing banks in the market using multiple-measures data. This is performed primarily by adding previous structural information into analyses, which is then used to stabilise the observed predictor-criterion covariance matrix. Bayesian structural regression estimates are proven to offer a banking institution with trustworthy data for placing itself in the financial market. The study also discusses some of the consequences of using the methodology in real-world marketing response applications.

KEYWORDS: customer churn prediction, predictive analytics, logistic regression

1.INTRODUCTION: The Bayes' Theorem, which asserts that the distribution of parameters is proportional to the product of two quantities: the likelihood of witnessing the data given the parameters and the prior density of parameters, is the starting point for Bayesian Logistic Regression. In business analytics, logistic regression is a statistical approach for predicting the likelihood of an occurrence or situation. For instance, a business can use it to forecast whether clients will visit/not visit, buy/not buy, and so on. The technique of attracting and acquiring new clients through traditional and digital media strategies is known as bank marketing. The application of various media methods aids in determining what type of customer is drawn to a particular organisation. Bayesian framework to investigate consumers' opinions of financial institutions' services in a target market. The method estimates the key factors of consumers' preferences for competing banks in the market using multiple-measures data. This is performed primarily by adding previous structural information into analyses, which is then used to stabilise the observed predictor-criterion covariance matrix. Bayesian structural regression estimates are proven to offer a banking institution with trustworthy data for placing itself in the financial market. The study also discusses some of the consequences of using the methodology in real-world marketing response applications.

Data Visualization Analysis on Covid-19 Cases Using Infer-Desc Statistics

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Abstract: This report has been prepared on the project of topic - Tracking OF COVID-19 Based On State Handling by the students of Computer Science Engineering (Third year-second semester) of PottiSriramuluChalavadiMallikarjunarao College Of Engineering And Technology. This is an outcome for the project launched under the department of Computer Science Engineering, a third year of undergraduate studies. Due to the effect of corona virus all over the world, education status also affected by this and in order to continue the course, department launched a new format. The main objective of this project is to study timely tracking of COVID-19 based on state in home districts of the students (allocated group) along with the comparative study of situations. Initially we collected raw data through some of the official websites, District Administration Office and related local level websites which was followed by sorting data in excel sheets. Afterwards we analyzed the collected data. We also presented our improvement in different time period through mid- term presentation and discussions with supervisors. Finally, we carried out comparison of the States based data using different way of representation.

Keywords: COVID-19, Impact, Health Issues, SARS-CoV-2.

1.Introduction: COVID-19 is the cause of SARS-CoV-2, a coronavirus that first appeared in December 2019. COVID-19 is a horrible virus that has killed millions of people around the world and left others with long-term health issues. The coronavirus is a virus that can be transmitted from person to person. A test is used to diagnose it. The best ways to protect oneself are to get vaccinated (and boosters if available), follow testing criteria, wear a mask, wash your hands, and maintain physical distance.



Figure 1: COVID-19

The COVID-19 epidemic has claimed many lives and poses an unprecedented threat to public health, food systems, and the workplace. The pandemic's economic and social consequences are devastating: tens of millions of people are at risk of falling into extreme poverty, and the number of undernourished individuals is predicted to reach 132 million by the end of the year.

Countless businesses are closing their doors. Almost half of the world's 3.3 billion workers are facing layoffs. Workers in the informal economy are more vulnerable due to a lack of social security, proper health care, and productive assets. Many people are unable to feed themselves and their families during lockdowns because they lack the means to make money. For the vast majority of individuals, a lack of funds means no food or, at the very least, fewer nutritious meals.



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Title PREDICTION OF PARKINSON'S DISEASE USING GRADIENT BOOSTING ALGORITHM

Volume 11, SPL ISSUE 04, Pages: 13-21 Paper Authors A.ChandraMouli, K.Lakshmi Yasaswi, Divvela Swetha, G.Naga Sowmya Sree, Kasiboyina Manisai





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PREDICTION OF PARKINSON'S DISEASE USING GRADIENT BOOSTING ALGORITHM

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Abstract

Parkinson's Disease (PD) is a persistent neurological disorder, mainly influencing the 40 to 60 year age group. It affects the midbrain region called substantia nigra, which produces dopamine. Reduced dopamine concentration causes motor symptoms like tremors, bradykinesia, vocal symptoms, and non-motor symptoms like painful cramps, constipation, gastric problems, and sleeping problems in people having PD. Above 90% of the PD patients experience vocal damage that causes a symptom called, Dysphonia. As an incurable disease, it requires to predict at an early stage. With Developing technology and data, Machine Learning plays a vital role in considering the most accurate decisions at lower costs. Our ML model consists of a feature selection and classification process, which uses to predict whether a particular person is suffering from PD or not. We used a vocal dataset that contains many multivariate attributes. We use the Pearson correlation for feature selection to get the correlation based on the relation between the target attribute with others in the dataset. We trained our model with Gradient Boosting Classifier, Decision Tree Classifier, and Naïve Bayes, where Gradient Boosting gives the highest accuracy of 94.87% compared to others. We build a user interface that would take the relevant features as input from the user and displays the predicted result. The main aim of this project is to differentiate whether a person is a healthy or PD patient.

Keywords: Parkinson's Disease, Naïve Bayes, Decision Trees, Gradient Boosting, Correlation, Machine Learning.

I. INTRODUCTION

Parkinson's is a long-standing neurological disease that shows a gradual decline in the count of neurons in the midbrain called substantia nigra, a part of the basal ganglia. PD is incorrigible neurodegeneration. This illness shows symptoms of rigid muscles, tremors at rest, retarded movements, postural imbalance, cognitive impairment, and psychological problems. These signs of PD are easy to identify at their growing stage, but it is difficult to identify at an early stage. There is a neurochemical, Dopamine, responsible for the human nervous system.



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Title PHISHING WEBSITES DETECTION USING RANDOM FOREST

Volume 11, SPL ISSUE 04, Pages: 40-48 Paper Authors **Mr A. Chandra Mouli , M.N.V. Rohit, M. Teja, SK. Aakhil4 N. Sirisha**





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PHISHING WEBSITES DETECTION USING RANDOM FOREST

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Abstract

Emails that contain Uniform Resource Locators, also known as URLs, pose significant risks to businesses because they have the potential to compromise an organization's credentials in addition to the network security of the organisation through spear-phishing and general phishing operations directed at the employees of the organisation. An important academic topic with realworld ramifications is the identification and classification of URLs that link to harmful websites. This topic focuses on the identification and category of URLs that lead to hazardous websites. An organisation may protect itself by screening incoming emails and the websites that its employees are visiting by using an appropriate machine learning model to determine the maliciousness of URLs contained in emails and web pages. This screening can be done for both incoming and outgoing emails. Filtering like this may be used as a defence mechanism against cyberattacks. In this study, we compare the performance of popular deep learning framework models, such as Fast.ai and Keras-TensorFlow, with the performance of traditional machine learning algorithms, such as Random Forest, CART, and kNN, across CPU, GPU, and TPU architectures. We find that traditional machine learning algorithms perform better than deep learning framework models when it comes to performance. Random Forest, CART, and kNN are a few examples of the algorithms that fall under this category. We use the dataset ISCX-URL-2016, which is accessible to the general public and can be obtained here, to show the performance of the models across binary and multiclass classification tasks. When it came to the identification and categorization of dangerous URLs, we discovered that the Random Forest, Keras-TensorFlow, and Fast.ai models all performed in a manner that was comparable and had accuracies that were more than 96 percent. The Random Forest model, on the other hand, is the one that is recommended because of the time, performance, and complexity limitations that are involved. When we compared the results of using all of the features that were provided in the dataset to those of rating the features and using feature selection methods, we found that using the top five to ten features produced the best results. This was in comparison to using all of the features that were provided in the dataset.

Keywords: Malicious URLs, Phishing URLs, Deep Learning, Web Security, Machine Learning

Text Classification Using Keras on Consumer Complaints

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Abstract: This study is mainly about the classification of the complaints given by the consumers for a product, financial issues in bank sectors, business feedbacks...etc. In this project we are using Keras. It's a Google-developed high-level deep learning API for building neural networks. It's written in Python and helps with neural network development. Multiple backend neural network computations are also supported. We'll look at how to classify customer complaints text into these groups using the dataset of Consumer Complaints on Financial Products: Consumer credit, Debt Collection Loans, Mortgages...etc. Finally we carried out this classification of consumer complaints using a different type of representation.

Keywords: business, complaints, consumer, project, python.

1. Introduction: Text categorization is the process of assigning labels to a collection of texts or words in one of three formats: one, zero, or predetermined labels, with the labels indicating the sentiment of the words.

To begin with, human language is nothing more than a string of words strung together. Every time a human speaks, it is accompanied by an emotion that another human may easily comprehend. Humans can quickly tell if a statement is angry or not. We can teach a machine to understand human language using deep learning techniques. To classify text, you'll need: to classify the data given; the data used is provided that will be provided based upon information then it is classified into tables and graphs... Etc.



Figure 1: Text Classification

When consumers choose between good and poor items, they frequently assume they are making trade-off judgments, in which good products provide moral benefits but have price or quality drawbacks when compared to standard products. In the context of privately consumed green products, we investigate the implications of such trade-offs for consumer value. We base our classification on the concept of self-communicating, which refers to a consumer's act of signalling information about their internal attributes to their own self via choosing. We investigate how and when self-signals resulting from such trade-off decisions influence customer value derived from green vs. standard product comparisons. By this text classification can help the consumers who are new to the products and businesses.

2. Literature Survey:

[1] Gustavo M. C. Coelho1 proposed that Text classification is a common NLP job that seeks to predict the category values associated with textual examples. The legal area, which comprises a large amount of



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Title: MUSIC RECOMMENDATION SYSTEM BASED ON EMOTION USINGFISHER FACE ALGORITHM

volume 11, Issue 06, Pages: 1484-1491 Paper Authors: Mr.Pavan.Movva, I.Gopichand, P.Someswarababu, A.Govind, Y.Vardhan



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MUSIC RECOMMENDATION SYSTEM BASED ON EMOTION USINGFISHER FACE ALGORITHM

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ABSTRACT

As all we realize music performs an crucial position in our way of life, music alters one'stemper.Itmaybeveryperplexingf oraconsumer/manorwomantoworkout whichmusiche/she needs to listen to from a decent sized series of present alternatives relying upontheir mood. There were several concept frameworks available for issues like as music, dining, and purchasing that were dependent on the user's mood. The first goal of our music recommendation system is to provide consumers with suggestions that are tailored to their preferences. The analysis of the user's facial expression/emotion may also lead to a better understanding of the patron's current emotional or intellectual state. it's a famous truth that persons specific greater actually what they have to say and therefore the context whereinthey supposed their phrases via way of means of their facial expressions. Over 60% of users believe that their playlist's large number of songs will make it difficult for them to find the

music they want to listen to at some point. Creating an advise device might aid a customer in determining which music to listen to, so assisting the customer in lowering his or her blood pressure. The customer will no longer have to waste time browsing for songs, since high-quality music that matches the customer's mood will be identified and songs will be played to the customer in accordance with his or her mood. With the use of a camera, the patron's image is taken. The customer's photo is captured, and appropriate music from the user's playlist is played to fulfil the customer's requirements, based on the customer's mood/emotion.

Keywords Fisherface, ImageProcessing, FDL

1. INTRODUCTION

Different music recommendation systemshad already living that recommend music.Mostofthepresentmusicrecom mendationsystemsweredesignedby using psychological sensors, during

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Predicting Diamond Prices

Mrs.CH.B.V Durga, D.Priyanka, B. Jayasree Priyanka, N.Venkatesh, K.Jayanth Assistant Professor, CSE, PSCMRCET, Vijayawada, Andhra Pradesh Students, CSE, PSCMRCET, Vijayawada, Andhra Pradesh

Abstract: Diamond is a form of carbon that is one of the hardest and most valuable substances found in nature. Unlike gold and silver, however, determining the price of a diamond is particularly difficult due to the multiple variables that must be taken into account. The purpose of this study is to find the most effective algorithm for predicting diamond prices. Some of the algorithms used to train machine learning models for predicting diamond prices based on various attributes on the diamond dataset include linear regression, support vector regression, decision trees, Random Forest regression, K-Neighbors regression, CatBoost regression, Huber regression, Extra tree regression, Passive Aggressive regression, Bayesian Regression, and XGBoost Regression. There is a comparison of various Machine Learning Regression models.

A comparison assessment of multiple Machine Learning Regression models is performed for the price forecast of each diamond. Based on the performance parameter values and studies, the CatBoost Regression method proved to be the most optimal solution, with an R2 score of 0.9872 and formidable training and testing accuracies of 98.74 and 98.72 percent, respectively. As a result, the CatBoost method for predicting the price of a diamond specimen was created utilising the values of attributes derived from an image of a diamond certificate.

Keywords: predicting, colour, price, CatBoost, analyzing, utilising, frames,

1.Introduction:

As soon as I have enough money, I want to buy my mother a diamond ring. I looked up its costs on Google the other day, but I had no idea what parameters were used to determine them. As a result, I decided to use machine learning techniques to determine what factors influence the price of a flawless diamond ring!

To create a web application that allows users to check up a predicted pricing for the diamonds they want.

Data: I utilised a dataset from pycaret's dataset folder on GitHub for this project, preprocessed the data, then developed a regression model to forecast the diamond's price (\$326-\$18,823) using basic diamond measurement variables. A price is assigned to each diamond in this dataset. Seven input variables affect the diamond's price:

Carat weight ranges from 0.2kg to 5.01kg.

Excellent, Excellent,

Descriptive Analysis on Student Performance & Prediction of Placement using Logistic Regression

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ABSTRACT: These days, the prediction of placements based on student marks is more common in universities. So instead of doing it manually by going through the Marks of every student is a task where lots of human work is necessary. It's better to calculate by a computer instead of a human to get an accurate analysis. This project is to decrease the efforts of humans and save time for the universities to predict the number of students who are going to get a placement based on their performance. So, we use the Logistic regression. It is one of the famous algorithms in Machine Learning. And it is used for the prediction of Probability in terms of binary values. It is the data mining technique adopted in this process. Calculating the Probability is to decide how many people are ready to get their jobs during their placements. For this, we use Python as our source of programming. Python is famous for its libraries. It is helpful in machine learning.

Keywords: Visualization, Logistic Regression, Statistical info, Placement prediction.

1.INTRODUCTION: Analysis of student performance depending on the educational overall performance is the goal metric for calculating the expertise received via way of means of a student. We can calculate by the student who has the best graph and performance in their academics are categorized or predicted for the placement selection. So, every university will analyze the student performance and predict the placements. That overall analysis of every student will be done by the university every year.

Based on some other studies, we can also advocate that educational overall performance should impact placement and placement rates, some the others. If the student has less academic performance will have fewer chances for placements. And the student who has a high academic performance will have more possibilities. So, the person who has a good score will get placed. He must not have any background in backlogs. Researchers say that the individual academic performance at the university has a long history depending upon their capacity. Sometimes, academic performance can be affected by some factors. Those factors may be any health issues or teaching approach being improper or difference in the learning style or influence of some other persons etc. This factor saw in the young students who can't stabilize their minds. The students who have a positive and healthy relationship with prior academic performance to get placed in their placement selection. The student who overcomes all the mentioned factors will get the improvement and see an improvement in the category of placement selection by the university.

We used logistic regression for all these predictions. Logistic regression is one of the best and main data mining techniques for predicting placements based on student performance. It is done by analyzing the practical relevance of prior academic performance and comparing it with the present academic performance. The developed model uses in this prediction. The choice assist device makes use of for powerful screening. And it is also used in checking the academic performance of the student.

2.LITERATURE SURVEY:

In [1] Student academic performance played a crucial role in determining their ability. Student academic performance is like a mark that shows the learning results. It contains several parameters like examination scores, test scores, and Grade Point Average (GPA). These parameters are for measuring the academic performance of a student. But William (2016) argues that only student grades or marks may not indicate a

A Comparative Study on Grocery Sales Forecast using Linear Regressor

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Abstract: Improved retail sales predictions can have a favourable environmental and economic impact. These projections have traditionally been made using a combination of statistical metrics and personal experience. However, with current computers' greater computing capability, there has been interest in using machine learning to this problem. The purpose of this thesis was to see which machine learning approach could best estimate sales using two years of sales data, yearly calendar events, and meteorological data. Various machine learning techniques are used to analyse these projections. Various strategies are presently in use to analyse the data of various datasets depending on the situation.Machine learning allows a user to give a set of instructions and a large amount of data to be reviewed or analysed based on data already in the database.

Keywords: Linear Regressor, K – Nearest Neighbour, Regressor, Confusion Matrix, Visualization

1.Introduction: Improvements in the science of Machine Learning, as well as increased processing capacity, have resulted in a growth in the use of machine learning in various industries. The grocery retail and sales industry is no exception to this trend. The use of advanced forecasting algorithms to better estimate incoming sales, enhance ordering procedures, and allocate products is one of the applications of machine learning in the grocery and retail industries.

There are numerous applications for improved forecasting models in the grocery and retail industries. The products are in increased demand among end users, and stores have become a trusted source of commodities availability.Improved forecasting performance for retailers can allow them to: limit product waste due to overstocking, which can be costly; optimise sales by avoiding under-stocking, which can result in lower sales owing to a lack of product availability; and enhance labour allocation.

As a result, better forecast accuracy could be beneficial to grocery stores in a variety of ways. Furthermore, 30 000 tonnes of groceries were abused in grocery stores in Sweden throughout the year 2016. Improved projections could thus be beneficial to the environment. As a result, it is clear that enhanced projections might be beneficial from a variety of viewpoints and for a variety of stakeholders across the retail business, but particularly in grocery stores.

2. Proposed System:

Linear Regressor:

The purpose of this part is to determine the current depth of knowledge in the field of grocery sales, the amount of academic experimentation that has been conducted, how that analysis has been conducted, and where any gaps in the literature exist. A secondary goal was to go further into previous studies to see which algorithms, features, and evaluation measures appear often in the literature.

Using academic literature sources such as Web of Science and Google Scholar offered a quick way to learn about the current state of the academic literature in this thesis area. There was more scholarly study on algorithms and solutions for the topic at hand by extending the search and focusing on knowledge rather than application. As a



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SIGN LANGUAGE TRANSLATION SYSTEM BASED ON CONVOLUTIONAL NEURAL NETWORKS

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Abstract

Humans engage with one another in order to communicate their ideas, thoughts, and opinions to the people around them. However, this is not the case for deaf-mute people. Deaf-mute people can communicate with each other via sign language. Conversation is possible for a deaf-mute character using sign language rather than acoustic sounds. motif in the other time of these paintings is to detonate a tool to detect the language of the signal, which offers conversation among human beings with speech impairment and ordinary human beings, thereby decreasing the conversation hole among them. Hand gestures play an important function in comparison to critical gestures (arm, face, head, and body), because they represent the user's opinions in hundreds of times less time. In today's work, a flex sensor-based totally completely without a doubt sincerely gesture recognition module has been developed to recognize English alphabets and a few phrases, and a Text-to-Speech synthesizer based totally completely without a doubt totally on HMM has been built to transform the corresponding text.

Keywords: Sign language; Machine learning; Hand Recognition; Convolutional Neural Network (CNN); Image Processing.

I. INTRODUCTION

For hearing-impaired people, sign language is the final natural medium and means of expression. People who are not deaf do not need to understand sign language in order to interact with deaf people in their daily lives. Deaf people are isolated as a result of this. However, if the computer could be programmed in such a way that it could convert sign language into text, the gap between ordinary people and the deaf community could be bridged. Indian Sign Language (ISL) uses every finger to represent each alphabet and gestures. ISL alphabets are acquired from British Sign Language (BSL) and French Sign Language (FLS). Most researchers in this issue focus on American Sign Language recognition (ASL) because of the truth that

A Comparative Study on Performing Inferential Statistics To Identify Important Features In Black Friday Sales using Linear Regression and Decision Tree Regressor.

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Abstract: The start of the Christmas shopping season is historically marked by Black Friday bargains. Many large shopping malls, like as Flipkart and Amazon, provide steep discounts on a variety of products around that time. Various academics conducted research on Black Friday sales in order to forecast sales on that day. The study serves as the foundation for several discounts. For predicting and evaluating sales, we used two models. The black friday sales dataset is easily available on kaggle for prediction and analysis. The models utilised for prediction are linear regression and decision tree regression. Mean Squared Error can be used to evaluate performance in this case (MSE).

Keywords: Linear regression, Decision Tree Regressor, Mean Squared Error(MSE), Regression, Data Analysis, Correlation Analysis.

1.Introduction: The Internet revolution has increased the shopping sector. Most people are preferring online shopping rather than offline shopping. The use of online shopping is variety of models, better prices, low crowd and delivery etc. In USA black Friday is known as Thanks Giving day. On 4TH Thursday of every year November this day is celebrated by sales. This day is one of the busy day. This sale is kept for the purpose of promoting the products to customers.

We have proposed a model which is known as prediction model which helps us to examine the correlation between the different attributes. We can perform training and prediction for the given dataset named as black Friday sales. The Biggest dataset in online platform is Black Friday dataset and is take part in several e-commerce websites. The prediction can be done by age of the customer, city category, occupation, gender etc, and we have used different types of models like linear, ridge, lasso, decision tree regression this model for implementation.



Figure 1: Factors Affecting Purchase

Movie Recommendation System Using Sentiment Analysis.

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Abstract: In today's world, when technology is at the forefront of every business, there is an abundance of data and information. As a result, a recommendation system comes in handy to cope with this massive amount of data and filter out meaningful information that is both quick and relevant to the user's preferences. To improve the user experience, this system uses machine learning to perform sentiment analysis on the movie reviews. To improve efficiency and accuracy, two supervised machine learning techniques, Naive Bayes (NB) Classifier and Support Vector Machine (SVM) Classifier, are utilised. As a result, SVM outperforms NB in Sentiment Analysis. Over the last few years, both machine learning and the amount of data available on the internet have grown at a fast pace. Recommendation Systems enter the picture to direct consumers to relevant content based on their interests. This article explains the development and implementation of Movie Recommendation Systems Using Machine Learning Algorithms, Sentiment Analysis, and Cosine Similarity in the context of Recommendation of Films and Tv shows on Internet Broadcasting Forms.

Keywords: Sentiment Analysis, Feature Extraction, Seaborn Library, Data Visualization, Support Vector System, Naives Bayes, Cosine Similarity.

1. Introduction: The availability of a large amount of excess information has had a serious impact on the precise selection of information by people. In recent years, an important requirement has been to assist users in identifying invalid information and to provide users with information that may be of interest in a timely manner. Traditional search engines are a single search result based on static key words that cannot meet individual user needs. With the development of artificial intelligence, big data and cloud computing technologies, the limitations of the traditional recommendation "Algorithms" are becoming increasingly evident, and many recommendations of "Algorithms" have emerged, including new technologies Following the widespread usage of collaborative filtering algorithms in recommendation systems, models including logistic regression, factorization machines, and gradient boosting trees arose.For different application contexts and data properties, several recommendation models are appropriate. As a result, selecting an appropriate core recommendation algorithm based on the application scenario is critical to constructing a successful recommendation system. At the same time, improving the effectiveness of feature engineering by utilising user input, scene information, and historical behaviour is a key upstream job for training recommendation models. One of the most well-known applications of recommendation systems is movie recommendation.

Traditional movie recommendation algorithms use ratings and other partial user information to create models of how people might behave. Traditional algorithms, on the other hand, primarily employ tag data to define movie aspects while ignoring the vast amount of user assessment data collected by UGC (user-generated content) websites. User reviews are unstructured pieces of information, and the emotions that often accompany them are often associated with movie features. Recognition of user emotional trends towards product characteristics helps to enrich the design of facilities. This website is typical of UGC websites. Douban has a large movie collection and a large user base. It has a lot of information about movie reviews. This study offers a movie recommendation system on sentiment classification, which was tested using movie assessment data from pictures pulled from Douban to evaluate the effectiveness of the proposed approach.

BITCOIN PRICE PREDICTION USING SVR

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Abstract: The increasing profit potential in virtual currency has made projecting crypto currency prices an interesting subject of research, and the steady growth in their prices has drawn a huge number of investors to participate in them. Accurate projections can help bitcoin investors make better investment decisions and boost their profits. One of the research topics is virtual currency price prediction, which involves gathering and evaluating historical data on virtual currency prices in order to forecast future prices. The main purpose of this research is to examine multiple frameworks for predicting bitcoin's daily closing price.High volatility of an asset in the financial market is often viewed as a negative feature, yet it is precisely this factor that has made crypto currency trading so profitable in recent years. We present a unique support vector regression (SVR) based on linear regression to handle this problem, which can increase the accuracy and effectiveness of virtual currency price prediction.

Keywords: Virtual currency, bitcoin, linear regression, support vector machine(svr)

1.Introduction:

Bitcoin is a cryptocurrency that is utilised for digital payments and investing around the world. Bitcoin is decentralised, and no one has access to it. Bitcoin transactions are simple since they are not bound to any region. Different marketplaces known as "bitcoin exchanges" are available for investment. These allow users to sell and purchase Bitcoins in a variety of currencies. Bitcoins are a type of digital currency that functions similarly to a virtual bank account. In the digital market, the predictability of bitcoin values is a divisive subject. Many authors have attempted to predict future directions of different digital currencies by using various features such as changes of daily prices of a specific digital currency, relevant currency exchange rates and prices of economic goods. Bitcoin's value changes just like a stock market differently. There are a number of algorithms used in stock market data for price prediction. However, the parameters affecting bitcoin are dissimilar. Therefore it is necessary to predict value to determine profitable investment for an investor. One can more accurately estimate virtual currency market events in the coming days by developing a calculable link between previous and

Churn Prediction in Telecom Industry Using Auto Encoders

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Abstract: Customer churn is a serious problem for both traditional and emerging businesses, including telecommunications, digital service providers, online marketplaces, payment banks, and social media. When customers leave a company, the bottom line suffers. This is particularly true for businesses that offer subscription-based services. The telecom industry is more vulnerable to churn due to its large client base and fierce competition. Predicting customer churn using random logic is a time-consuming and labour-intensive operation with customer databases in the petabytes and terabytes. While machine learning appears to be the easier option, many databases contain a large number of string properties that are difficult to use in machine learning.

Keywords:Machine learning, Neural Network, telecommunication, accuracy, divergence,PCA,CNN,VAE

1.Introduction: Telecommunications has emerged as the most important industry in developed countries today. The degree of competitiveness in today's globe has risen as a result of technological advancements and operators. Companies employ a variety of techniques to stay afloat in the market. Acquiring new clients, upselling existing customers, and lengthening customer retention are the three basic techniques. When all of the techniques are compared, the third is the most profitable, indicating that keeping the current one is preferable to getting a new one. In service industries with high levels of competition, customer churn is a major worry. Predicting which clients are likely to depart the company, on the other hand, might result in a significant increase in revenue if done early enough.

Many studies show that Machine Learning is extremely effective at predicting this situation. This method is used to learn data from the preceding one. We created each client's social network and calculated attributes such as degree centrality measures, similarity values, and customer network connectedness. SNA features improved AUC results significantly, which is owing to their contribution in providing more diverse information about clients. Syria has two telecommunications companies, Syria Tell and MTN. Syria tells us that the study piqued their interest because the cost of getting a new client in the organisation is six times more than the cost of retaining a churning customer. The Syria dataset faces numerous difficulties.

	customerID	gender	SeniorCitizen	Partner	Dependents	tenure	PhoneService	MultipleLines	InternetService	OnlineSecurity	•••
0	7590- VHVEG	Female	0	Yes	No	1	No	No phone service	DSL	No	
1	5575- GNVDE	Male	0	No	No	34	Yes	No	DSL	Yes	
2	3668- QPYBK	Male	0	No	No	2	Yes	No	DSL	Yes	
3	7795- CFOCW	Male	0	No	No	45	No	No phone service	DSL	Yes	(22.2)


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COUPLED FIXED POINTS OF GENERALIZED SUZUKI TYPE \mathscr{Z} -CONTRACTION MAPS WITH RATIONAL EXPRESSIONS IN *b*-METRIC SPACES

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Abstract. In this paper, we introduce generalized Suzuki type \mathscr{Z} -contraction maps with rational expressions for a single map $\mathfrak{A} : S \times S \to S$ where S is a *b*-metric space and prove the existence and uniqueness of coupled fixed points. We extend it to a pair of selfmaps by defining generalized Suzuki type \mathscr{Z} -contraction pair of maps with rational expressions. Two corollaries are drawn from our results and we provide examples in support of our results. **Keywords:** coupled fixed points; *b*-metric space; *b*-Cauchy sequence; generalized Suzuki type \mathscr{Z} -contraction maps with rational expressions.

2020 AMS Subject Classification: 47H10, 54H25.

1. INTRODUCTION

The study of existence and uniqueness of coincidence points of mappings satisfying certain contractive conditions has been interesting field, when Banach stated and proved his famous result Banach contraction principle and it plays an important role in solving nonlinear functional analysis. In the direction of generalization of contraction condition, Dass and Gupta [14] initiated a contraction condition involving rational expression and established the existence of

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Coupled fixed points of generalized rational type \mathcal{Z} -contraction maps in *b*-metric spaces

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(Communicated by Abdolrahman Razani)

Abstract

In this paper, we introduce generalized rational type \mathcal{Z} -contraction maps for a single map $f: X \times X \to X$ where X is a b-metric space and prove the existence and uniqueness of coupled fixed points. We extend it to a pair of maps by defining generalized rational type \mathcal{Z} -contraction pair of maps and prove the existence of common coupled fixed points in complete b-metric spaces. We provide examples in support of our results.

Keywords: coupled fixed points, b-metric space, generalized rational type \mathcal{Z} -contraction maps 2020 MSC: 47H10, 54H25

1 Introduction

Banach contraction principle plays an important role in solving nonlinear functional analysis. In the direction of generalization of contraction condition, Dass and Gupta **13** initiated a contraction condition involving rational expression and established the existence of fixed points in complete metric spaces.

In the direction of generalization of metric spaces, Bourbaki [10] and Bakhtin [5] initiated the idea of *b*-metric spaces. The concept of *b*-metric space or metric type space was introduced by Czerwik [11] as a generalization of metric space. Afterwards, many authors studied the existence of fixed points for a single-valued and multi-valued mappings in *b*-metric spaces under certain contraction conditions. For more details, we refer [2] [3] [8] [9] [12] [14] [16] [18] [23] [24].

In 2006, Bhaskar and Lakshmikantham [6] introduced the notion of coupled fixed point and established the existence of coupled fixed points for mixed monotone mappings in ordered metric spaces. Later, Lakshmikantham and Ćirić [19] introduced the notion of coupled coincidence points of mappings in two variables. Afterwards, many authors studied coupled fixed point theorems, we refer [20], 22, 25, 26.

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Optical Materials Volume 121, November 2021, 111590

$^{Research\,Article}$ Spectroscopic properties of $P_2O_5-MgO-Na_2O:Dy_2O_3$ glasses for the applications of W-LEDs

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Abstract

 P_2O_5 -MgO-Na₂O glasses with varied concentrations of (RE) Dy³⁺ ions (Dy₂O₃: 0.5, 1.0, 1.5, and 2.0 mol percent) were prepared by melt quenching technique. The prepared glass samples have been characterized using XRD and SEM techniques and the amorphous nature of the samples was ensured. <u>Optical absorption</u> and <u>photoluminescence</u> spectra and also decay characteristics were recorded. Using absorbance spectra, the J-O parameters Ω_2 , Ω_4 , and Ω_6 were calculated for the glass doped with 1.0 mol % of Dy₂O₃. Several radiative parameters such as radiative probability, A_R, radiative lifetime τ_R , branching ratio, β_R , emission cross-section, σ^E_P for Dy₂O₃ doped glasses were evaluated and reported using the <u>emission spectra</u>. The quantum efficiency of 1.0 mol% Dy₂O₃ doped glass was determined to be 86%, which is observed to be the largest when compared to that of all other glasses. The color chromaticity co-ordinates were observed to move towards white region as the concentration of Dy₂O₃ is increased. The quantitative analysis of these data in commination with results of infrared spectral investigations, revealed that the 1.0 mol % of Dy³⁺ ions is optimal concentration for achieving the highest luminescence efficiency.

Graphical abstract

Excitation spectra of P₂O₅–MgO–Na₂O glasses mixed with the concentrations of Dy₂O₃.





Dr. Amara Rama Devi (Professor of English, PSCMR College of Engineering & Technology,Vijayawada-01) Email: ramadevi.amara@gmail.com DOI : DOI: <u>http://dx.doi.org/10.54513/JOELL.2022.9117</u>

ABSTRACT



The God of Small Things throws light upon hierarchical structures of power, and oppression at various levels in patriarchal societies. Arundati Roy explores how these differences of caste, gender and race, function through social institutions and the way they affect human interactions and relationships. In this paper, an attempt is made to show how the novel highlights the interrelationships of all power structures to shape society. The "Big Things" – the things in power, indicating in the end that the God of small things is an absent god, a god of loss.

Keywords: Small Things, Big Things, Hierarchical, Human, Relationships

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SUSTAINABLE SUPPLY CHAIN MANAGEMENT: REACH, ACTIONS AND INTERRELATIONS WITH **OTHER CONCEPTS**

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