Institute Name	Vivekanand Education Society's Institute Of Technology
Institute ID	IR-E-C-33895
Discipline	Engineering
Parameter	Patents Details CY 2023

Patents Granted

1. A blockchain-based medical logistics system

Dr. Nupur Giri

Publication no. DE202023102823U1

Date of Grant : 23.05.2023

Abstract- A blockchain-based medical logistics system (100), the system (100) comprising:a front-end module (102) connected to a patient wallet (104), the wallet comprising a variety of smart -conducts contract transactions, wherein the front-end module (102) scans a QR code to provide details about the drug; a plurality of interface modules (106) that interface with the front-end module (102), wherein a first interface module (106a) forms a bridge for establishing communication via web services by allowing immediate access across a variety of networks to create a variety of smart contracts, wherein a second interface module (106b) allows a manufacturer of the drug to automate the creation of multiple smart contracts for the blockchain network; Anda backend module (108) in conjunction with the frontend module (102) for adding multiple details to the blockchain, the multiple details including patient details, prescriptions, doctor details and pharmacy details.

2. Device for Common Mode Voltage Removal

Nilima Warke, Dr. J .M. Nair, Dr. P. P. Vaidya,VESIT

Application No.-201921042142

Patent Granted - 10/04/2023

Abstract- The present invention relates to electronic systems for reducing common mode

voltage signals and more particularly to a system for common mode voltage removal having effective common mode rejection ratio (CMRR) without affecting differential voltage.

3. Robust Fluid Dispensing System

Mrs. Deepti Khimani(VESIT), Mr. Rakeshkumar Barai, Dr. Machhindranath Patil(VESIT)

Application No.-201921025601

Patent Granted: 28/12/2023

Abstract- Fluid dispensing system is primarily responsible for the controlled flow of liquids such as solvents, inks, and glues for diverse applications including medical devices and electrical and electronics assembly. Most processes involve some or the other fluid flow from one point to another. For example, a fuel dispensing system at fuel stations. It is of utmost importance to accurately regulate the fuel flow from the source to the tank of the vehicle, here one cannot afford any less or more quantity to be dispensed. During this process, the velocity of fluid changes rapidly in several working conditions, which results in a temperature, pressure change which affect Fluid properties. This invention relates to the design of control law that alters the fluid flow-rate as per the specified quantity of the fluid to be dispensed.

4. Method and Partial Discharge Measurement System for Examining Partial Discharge Characteristics of Objects.

Dr. P. P. Vaidya, Mrs. Lekshmi Ajesh

Application No.-201621029072

Patent Granted: 29/12/2023

Abstract-The embodiment herein generally relates to the field of pulse generation, and more particularly relates to a method and partial discharge measurement system for examining partial discharge characteristics of an object.

Patents Published

1. Audio emotion recognition using digital Stethoscope and Deep Learning Techniques

Mannat Doultani Priya R.L

Application no. 202321003900

Date of Published : 19/09/2023

Abstract- Emotion Recognition is a trending research topic these days, with its main motive to improve human-machine interaction. As human beings, speech is the most natural way to express oneself. Emotions can be determined considering various factors like speech, facial expressions, and body language. Also, Auscultation tests are performed to listen to the sounds of internal organs like lungs, heart, etc using a stethoscope. The existing classifiers are found to be good at end-to-end audio classification models, aiming to learn a direct mapping from audio spectrograms to corresponding labels. The proposed idea is to define an Emotion Recognition (ER) system as a collection of methodologies by correlating audio signals and heartbeats of an individual for the detection of various emotions. The system aims to extract the most prominent features from the input audio file imported using a microphone and the sounds of the heart is measured via a digital stethoscope. As emotions bring a greater impact on the functionality of heart rate, the recognizer is allowed to view the auscultation signal in the form of wave plots (heart rate), the pitch diagram (for input speech), and the resultant of both will help in the classification of individual emotions using deep learning techniques. Such a system can be used in a wide variety of application areas like interactive voice-based-assistant or caller-agent conversation and analysis of human mental and heart health prediction and human-robot interaction.

2. Efficient Vehicle tracking and Monitoring System and Method

Priya R L

Richard Joseph

Published Application no. 202321016758

Date of Published :13.03.2023

Abstract-The Regional Transport Office (RTO) in India is a government body responsible for enforcing motor vehicle regulations. Its functions include issuance of driving licenses, vehicle registration, collection of taxes and fees, and enforcing traffic laws. The RTO system has faced challenges such as irregularities and inefficiency, however, efforts have been made to improve the experience through digitization and online services. Despite these efforts, the system still faces issues such as long wait times

and backlogs of pending applications. The proposed model aims to track and record information about vehicles for traffic monitoring and ticket generation using IoT and blockchain technology. The process includes: (1) collecting data from various sensors from vehicles and signal cameras for traffic violations such as over speeding or running red lights, (2) creating a blockchain for vehicle information and traffic rule violations, (3) using sensor data and camera footage to issue tickets with video proof for users to verify or contest, (4) queries on issued ticket by the accused is managed in a separate Complaint tracking Blockchain and ticket's status is updated accordingly, (5) using crash detection sensors and GPS to send an emergency message with location information to designated individuals appointed by the RTO

3. A PRIMARY AID FOR LEARNING TO WRITE AN INDIAN REGIONAL LANGUAGE CHARACTERS USING A DEEP LEARNING APPROACH

Indu Dokare

Published Application no. 202321034134

Date of Published :15.05.2023

Abstract-It is never too late to learn anything new, no matter how old you are. India is a country where people speak a wide range of languages, with each state having its own language. However, there aren't many online platforms and resources available for regional languages. The demand for self-learning apps has increased recently. Many individuals feel at ease studying at their own pace. The difficulty of teaching letter writing is one of the major challenges in language instruction. In the conventional method of instruction, the teacher demonstrates how to draw a letter to the class and corrects any mistakes the students may have made. This application will provide the same level of sophisticated approach for teaching to write the letters. This language learning web application will help individuals of all ages learn the fundamentals of the Indian regional languages (Marathi and Bengali) in an approachable manner through well-prepared and organized video lessons teaching them how to pronounce and write the letters by giving them a canvas where they can practice the letter writing and check the accuracy with the aid of voice commands. This is where we bridge the gap between traditional and self-learning methods using AI. The correctness of the character written by the user will be checked by a convolutional neural network-based character recognition model. In order to facilitate this, the utilization of convolutional neural networks involves feature extraction and classification stages in order to perform accurate pattern recognition. In order to achieve high performance while predicting images, convolutional neural network architecture based on a deep learning technique possesses the capabilities of tackling the complexities by generalizing the uncertainties and the missing values of data with high classification accuracy, minimum computation time, and low-cost manner. The proposed invention facilitates learning and writing Indian regional language handwritten characters efficiently and with high accuracy. This invention will assist people in learning and writing Indian regional languages and eventually becoming fluent in the language.

4. Cardiac Arrest Prediction Using Machine Learning Technique

Dr Chandan Singh Rawat

Application no. 202321071156

Date of Published-18.10.2023

Abstract-TECHNIQUE The present invention pertains to the field of healthcare technology and, in particular, to a groundbreaking system and method for Cardiac Arrest Prediction using Machine Learning Techniques. Cardiac arrest, characterized by the sudden cessation of the heart's pumping function, poses a significant threat to human health, often occurring without warning. Timely identification and intervention are paramount in mitigating this life-threatening condition. The invention addresses the critical need for improved cardiac arrest prediction by harnessing the potential of advanced machine learning methodologies. The invention is a comprehensive solution that begins with real-time monitoring and continuous data collection of an individual's physiological parameters, including heart rate, blood pressure, and electrocardiogram (ECG) signals. The collected data undergoes rigorous preprocessing to ensure its reliability, followed by the extraction of vital features, such as heart rate variability and ST-segment changes. A machine learning model, trained on historical data, plays a central role in making predictions about the likelihood of cardiac arrest based on these features. A distinguishing aspect of the invention is its ability to provide real-time predictions and alerts. When the machine learning model foresees a high probability of cardiac arrest, it triggers an alert system. These alerts are transmitted to healthcare professionals, emergency services, or directly to the individual, enabling swift and targeted intervention. By issuing these early alerts, the invention offers a pivotal window of opportunity to save lives, improve patient outcomes, and reduce post-arrest complications. The invention promotes a user-centric approach to healthcare, encouraging individuals to proactively monitor their cardiac health. It is highly adaptable and customizable; allowing healthcare providers to tailor the system to the unique needs and risk profiles of individual patients. Furthermore, the system seamlessly integrates with existing healthcare systems, making it accessible and versatile for widespread adoption.

5. Arduino Embedded T-Shirt For Continuous Monitoring Of Cardiac Health Using Ecg Signal

Dr Chandan Singh Rawat

Application no. 202321075820

Date of Published-06/11.2023

Abstract- System and method for Cardiac Arrest Prediction using Machine Learning Techniques. Cardiac arrest, characterized by the sudden cessation of the heart's pumping function, poses a significant threat

6. Converting sign language to text in real-time using Machine Learning and incorporating it to Google meet via Chrome extension.

Mrs Manisha Chattopadhyay

Application No.202221038190

Date of Published : 06/10/2023

Abstract- Sign language is a source of communication used primarily by the community of speech and hearing-impaired people. The history of sign language goes as far back as the Seventeenth century wherein the basic tool of communication for the aforementioned community was not universal but geography-specific. The work is based on the implementation of a Google Chrome extension for the Google meet (Videoconferencing) software which translates sign language into captions with the use of Machine Learning. Additionally, there is also a provision for text to speech for the translated texts. By making this extension, the foundation for a bridge is laid between users of ASL signs and the people who cannot understand them.

7. Electronic vision assistant system

Mrs.Manisha Joshi

Application No.201821041037A

Date of published: 06/10/2023

Abstract-The system of the present invention facilitates the blind user to have normal social interactions without the need to touch the face of a person to recognize him/her, using a convenient wearable device.

Patents Filed

1. A Reconfigurable Antenna For Cognitive Radio

Dr. Ranjan Bala Jain

Application no. 202321056848

Date of filing :24.08.2023

Abstract -The present invention relates generally to communication antenna and more particularly relates to the reconfigurable antenna design for cognitive radio.

2. Copyright on 'pseudo-random bit generation using b-exponential chaotic map and precision matching for image encryption application'

Dr. Rasika Naik

Filing Application No. -12046/2022-CO/L

Abstract -In today's technology-driven era, the majority of the tasks have shifted online. Sectors such as e-commerce, multimedia, e-learning, etc. have rapidly grown. The classic username and password systems are becoming less popular over the internet due to their vulnerabilities. These systems are prone to cyber attacks. Hence there is a need to develop a highly secure algorithm, which is hard to hack into by unauthorized users. Encryption and decryption systems are secure algorithms that are resistant to cyber-attacks. The pseudo-random number generator based on the chaotic maps method is the backbone for building encryption algorithms.The proposed 24-bit (6-digit) long OTP system offered 120 times higher security as compared to traditional 4-digit systems, with a faster backend computing system that selects 24-bits out of 10^8 bits in 89 seconds. The proposed precision-based PRBS generator's output passed all

of the NIST test suite's performance assessments with a 98.45 % success rate. We tested the algorithm for multiple B values up to 10,000 and discovered that the Lyapunov exponent was positive (approximately 3.8), indicating good randomness in the output. The output bit rate, for10^6 bits, was determined to be 1.09 Mbps. Compared to the methods reported in the literature, we managed to produce a highly efficient cryptographic pseudo-random bit sequence generator with a correlation coefficient of 0.00076.

Design Patents (Granted)

1. Wireless Laptop Charger Cum Cooling Pad

Dr Chandan Singh Rawat

Application no. 6327546

Date of Grant :27.11.2023

Abstract- International Design Classification:

Version: 14-2023

Class: 14 RECORDING, TELECOMMUNICATION OR DATA PROCESSING

EQUIPMENT.Subclass: 06 HOLDERS, STANDS AND SUPPORTS FOR ELECTRONIC EQUIPMENT, NOT INCLUDED IN OTHER CLASSES

2. Wireless Networking Device For Controlling Home Appliance

Dr Chandan Singh Rawat

Application no. 395854-001

Date of Grant :23.09.2023

Abstract - WIRELESS NETWORKING DEVICE FOR CONTROLLING HOME APPLIANCE(certificate of registration of design)