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सत्यमेव जयते

ORIGINAL
क्रम सं/ Serial No. : 185143

पेटेंट कार्यालय, भारत सरकार | The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 430377-001

तारीख / Date : 13/09/2024

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *DEVICE TO MEASURE HEAT OF HYDRATION OF CEMENT AND CONCRETE* से संबंधित है, का पंजीकरण, श्रेणी 10-05 में 1.Dr. M. Karthikeyan 2. Mrs. Geena M.G 3.Mrs. Reena P 4.Mrs. V. Mohanapriya 5.Mrs. K. Revathi 6.Dr. E.K. Mohanraj 7.Mr. P. Easwaran के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 10-05 in respect of the application of such design to *DEVICE TO MEASURE HEAT OF HYDRATION OF CEMENT AND CONCRETE* in the name of 1.Dr. M. Karthikeyan 2. Mrs. Geena M.G 3.Mrs. Reena P 4.Mrs. V. Mohanapriya 5.Mrs. K. Revathi 6.Dr. E.K. Mohanraj 7.Mr. P. Easwaran.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि :
Date of Issue : 22/11/2024

उन्नत की ओर

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वत्वाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निबंधनों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

Certificate of Registration for a UK Design

Design number: 6366051

Grant date: 25 July 2024

Registration date: 14 May 2024

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Dr. Pawan Bhambu, Shubham Shukla, Rashima Mahajan, Jayasri

Manickavasagam, Naveen Kolla, Dr. Ravindran Ramkumar

in respect of the application of such design to:

AI based Balance and Posture Training Equipment

International Design Classification:
Version: 14-2023
Class: 24 MEDICAL AND LABORATORY EQUIPMENT
Subclass: 99 MISCELLANEOUS

Adam Williams

Adam Williams
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/01/2024

(21) Application No.202441006620 A
(43) Publication Date : 09/02/2024

(54) Title of the invention : METHOD OF MAKING NOBEL METAL NANO PARTICLES

(51) International classification :B82Y0005000000, B82Y0030000000, B82Y0040000000, A61K0009500000, C09D0011520000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[045] This invention presents a pioneering method for the synthesis of noble metal nanoparticles, primarily focusing on gold, silver, and platinum. The proposed system overcomes existing limitations by introducing a novel reduction and stabilization process that ensures precise control over the size, shape, and composition of the nanoparticles. This method optimizes precursor selection, drawing insights from colloidal chemistry and materials science, resulting in improved uniformity and scalability. The systematic approach not only addresses challenges associated with reproducibility but also aligns with environmentally conscious practices, minimizing waste and energy consumption. The synthesized noble metal nanoparticles exhibit enhanced properties, opening up new frontiers in biomedicine for applications like targeted drug delivery, imaging, and therapeutic interventions. Additionally, the method revolutionizes catalysis by providing highly efficient catalysts with unprecedented precision. In the realm of electronics, the nanoparticles become pivotal components in advanced sensors, conductive inks, and electronic devices, marking a significant stride in the evolution of the electronics industry. This innovation signifies a convergence of scientific disciplines, fostering a future where the manipulation of matter at the nanoscale becomes a transformative force in scientific and technologic Accompanied Drawing [FIGS. 1-2]

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :19/03/2024

(21) Application No.202441020880 A

(43) Publication Date : 29/03/2024

(54) Title of the invention : A NOVEL DEEP LEARNING ENABLE ROBOT TO MIMIC EMPLOYEES

(51) International classification :B25J0009160000, G06N0003080000, G06N0003040000, G06N0003000000, G06N0020000000

(86) International Application No :NA

Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA

Filing Date :NA

(62) Divisional to Application Number :NA

Filing Date :NA

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Abstract :

vention presents a groundbreaking robotic system designed to leverage advanced deep learning algorithms to accurately mimic the tasks, behaviors, and problem-solving strategies of employees across various work environments. Equipped with an array of sophisticated sensors and actuators, this robot is capable of observing and learning from human actions in rea hereby acquiring the skills necessary to perform a wide spectrum of activities previously exclusive to humans. This capability is facilitated through a cutting-edge deep learning module ocesses environmental and interactional data, enabling the robot to adapt its actions and responses to match those of its human counterparts. The system is distinguished by its bility, allowing for seamless integration into diverse settings such as offices, manufacturing facilities, and retail spaces, with the aim of enhancing operational efficiency, productivity, man-robot interaction. Through continuous learning and adaptation, the robot evolves to meet changing workplace demands, representing a significant advancement in the field of s and artificial intelligence. Accompanied Drawing [FIGS. 1-2]

of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :20/08/2024

(21) Application No.202441062633 A

(43) Publication Date : 23/08/2024

(54) Title of the invention : ARTIFICIAL INTELLIGENCE-BASED FOUR-ARMED ROBOTIC SURGICAL SYSTEM

(51) International classification :A61B0034300000, A61B0017000000, A61B0090000000, A61B0034000000, G06N0020000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an advanced robotic surgical system featuring four articulated arms enhanced with artificial intelligence (AI) for precision and autonomy in minimally invasive procedures. The system includes a mobile base, four versatile robotic arms equipped with specialized surgical tools, and an AI module that processes real-time data to control the arms and assist in decision-making. By integrating machine learning, computer vision, and data analytics, the system improves surgical accuracy, reduces cognitive load on surgeons, and enhances patient safety. The innovative design allows for simultaneous and coordinated manipulation of surgical instruments, and incorporates features such as collision detection, anomaly monitoring, and fail-safes to ensure reliable and effective performance in complex surgeries. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

TENT APPLICATION PUBLICATION

(21) Application No.202441062640 A

DIA

e of filing of Application :20/08/2024

(43) Publication Date : 23/08/2024

e of the invention : MACHINE LEARNING TECHNIQUES FOR ANALYZING AND IDENTIFYING AUTISM SPECTRUM DISORDER

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n :G06N0020000000, G16H0050200000, A61B0005000000, G16H0050700000, G06N0020100000

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No :NA
Date :NA

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No : NA

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ntion relates to a system and method for diagnosing Autism Spectrum Disorder (ASD) utilizing advanced machine learning techniques. This system e data sources, including behavioral assessments, genetic information, and neuroimaging data, to enhance diagnostic accuracy. By employing chine learning algorithms, the system analyzes and synthesizes these data types to identify patterns and markers indicative of ASD. The resulting is presented through a user-friendly reporting module, which includes visualizations and actionable insights to support clinicians in making informed mprehensive approach not only improves diagnostic precision but also offers valuable insights into the underlying mechanisms of ASD, facilitating e intervention. Accompanied Drawing [FIGS. 1-2]

No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/09/2024

(21) Application No.202441070038 A
(43) Publication Date : 20/09/2024

(54) Title of the invention : IoT & ML for Crop Health Monitoring and Management System

(51) International classification :C07D0417120000, C07D0413120000, A61K0045060000, C07D0409120000, C07D0403120000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed invention is a Crop Health Monitoring and Management System that integrates Internet of Things (IoT) and Machine Learning (ML) technologies to enhance precision farming. The system uses a network of IoT sensors to continuously monitor environmental and soil parameters, providing real-time data on moisture, temperature, humidity, and nutrients. This data is transmitted to a central repository, where ML algorithms analyze it to detect patterns associated with crop diseases, pests, and other health issues. Predictive analytics offers proactive recommendations for optimal resource use and crop management. The system is scalable, customizable, and designed to be user-friendly, with a mobile app for real-time alerts, data visualization, and educational resources. It promotes sustainable agriculture by optimizing resource use, reducing environmental impact, and enhancing productivity, thus empowering farmers to make data-driven decisions for improved crop health and yield.

No. of Pages : 27 No. of Claims : 10

710014456

FORM1 THE PATENTS ACT 1970 (39 of1970) and THE PATENTS RULES, 2003 **APPLICATION FOR GRANT OF PATENT** (See section 7, 54 and 135 and sub-rule (1) of rule 20)	(FOR OFFICE USE ONLY)

	Application No.	202241063001
	Filing date:	04/11/2022
	Amount of Fee paid:	1750/-
	CBR No:	44453
	Signature:	04/11/22
1. APPLICANTS REFERENCE/ IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)		

2.TYPE OF APPLICATION |Please tick () at the appropriate category|

Ordinary (✓)		Convention ( )		PCT-NP ( )	
Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )

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3B. CATEGORY OFAPPLICANT [Please tick () at the appropriate category]

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	Small Entity ( )	Startup ( )	Others ( )

4. INVENTOR(S) [Please tick () at the appropriate category]

Are all the inventor(s) same as The applicant(s) named above?	Yes(✓)	No ()

5. TITLE OF THE INVENTION: ML strategies approach for Analysis of IoT Traffic Mechanisms in an IoT Cloud Environment.

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PATENT OFFICE CHENNAI 09/11/2022 12:17

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8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION COUNTRY, PARTICULARS OF CONVENTION APPLICATION

Country	Application Number	Filing date	Name of the applicant	Title of the invention	IPC (as classified in the Convention country)

9. IN CASE OF PCT NATIONAL PHASE APPLICATION, PARTICULARS OF INTERNATIONAL APPLICATION FILED UNDER PATENT CO-OPERATION TREATY (PCT)

International application number	International filing date

10. IN CASE OF DIVISIONAL APPLICATION FILED UNDER SECTION 16, PARTICULARS OF ORIGINAL(FIRST) APPLICATION

Original (first) application No.	Date of filing of original (first) application

11. IN CASE OF PATENT OF ADDITION FILED UNDER SECTION 54, PARTICULARS OF MAIN APPLICATION OR PATENT

Main application/patent No.	Date of filing of main application

12.DECLARATIONS

(i) Declaration by the inventor(s)

(In case the applicant is an assignee: the inventor(s) may sign here in below or the applicant may upload the assignment or enclose the assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period).

I/We, the above named inventor(s) is/are the true &first inventor(s) for this Invention and declare that the applicant(s) herein is/are my/ our assignee or legal representative.

(a) Date

(b) Signature(s)

(c) Name(s)

(ii) Declaration by the applicant(s) in the convention country

(In case the applicant in India is different than the applicant in the convention country: the applicant in the convention country may sign herein be low or applicant in India may upload the assignment from the applicant in the convention country or enclose the said assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period)

I/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a)Date

(b)Signature(s)

(c)Name(s) of the signatory

(iii) Declaration by the applicant(s)

I/We the applicant(s) hereby declare(s) that:-

I am/We are in possession of the above-mentioned invention.

The provisional/complete specification relating to the invention is filed with this application.

There is no lawful ground of objection(s) to the grant of the Patent to me/us.

I am/we are the true &first inventor(s).

I am/we are the assignee or legal representative of true &first inventor(s).

The application or each of the applications, particulars of which are given in Paragraph-8, was the first application in convention country/countries in respect of my/our invention(s).

I/We claim the priority from the above mentioned application(s) filed in convention country/countries and state that no application for protection in respect of the invention had been made in a convention country before that date by me/us or by any person from which I/We derive the title.

My/our application in India is based on international application under Patent Cooperation Treaty (PCT) as mentioned in Paragraph-9.

The application is divided out of my/our application particulars of which is given in Paragraph-10 and prays that this application may be treated as deemed to have been filed on DD/MM/YYYY under section 16 of the Act.

The said invention is an improvement in or modification of the invention particulars of which are given in Paragraph-11.

13.FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION

(a) Form2

Item	Details	Fee	Remarks
Complete specification	No. of pages pages 6	-	-
No .of Claim(s)	No. of claims 5 & No. of Page 1	-	-
Abstract	No. of page 1	-	-
No. of Drawing(s)	No. of drawings 1& No. of page1	-	-

#In case of a complete specification, if the applicant desires to adopt the drawings filed with his provisional specification as the drawings or part of the drawings for the complete specification under rule 13 (4), the number of such pages filed with the provisional specification are required to be mentioned here.

(b) Complete specification (in conformation with the international application) / as amended before the International Preliminary Examination Authority (IPEA), as applicable (2copies). (c) Sequence listing in electronic form

(d) Drawings (in conformation with the international application)/ as amended before the International Preliminary Examination Authority (IPEA), as applicable (2copies).

(e)Priority document(s) or is quest to retrieve the priority document(s) from DAS (Digital Access Service) if the applicant had already requested the office of first filing to make the priority document(s) available to DAS.

(f)Translation of priority document/Specification/International Search Report/ International Preliminary Report on Patent ability.

(g) Statement and Undertaking on Form 3 (h) Declaration of Inventor ship on Form 5 (i) Power of Authority

(j).....

Total feeRs. in Cash Date .....

I/We hereby declare that to the best of my/our knowledge, information and belief the fact and matters stated herein are correct and I/We request that a patent may be granted to me/us for the said invention.

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Golla Naresh Kumar	Dr.T.R.Kalai Lakshmi	**Dr. Sheshang Degadwala**
Dr.R.Thiagarajan	**Dr. R.Ramkumar**	

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Department for Promotion of Industry and Internal Trade
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Government of India

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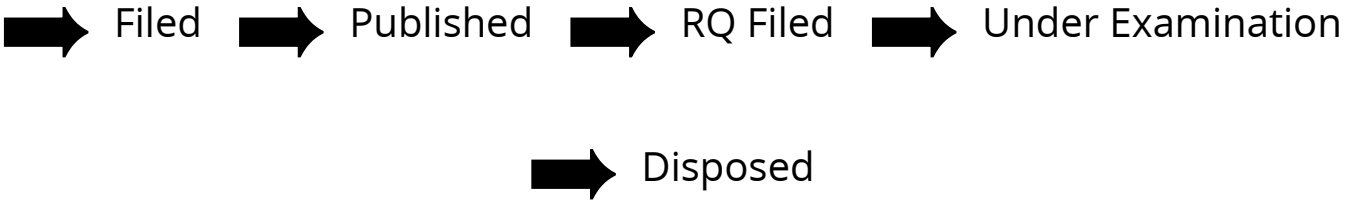
Application Details	
APPLICATION NUMBER	202241074165
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	21/12/2022
APPLICANT NAME	1 . DR G SUSEELA 2 . DR.T.SATHIS KUMAR 3 . DR. N. GOBALAKRISHNAN 4 . UTHAYAKUMAR J 5 . DR S.SELVI 6 . DR. PRAVIN KULURKAR 7 . PROF. VAISHALI JANGADE 8 . PROF. RITA BHAWALKAR
TITLE OF INVENTION	A UNIQUE IDENTIFICATION OF THE CONTINUOUS MONITORING MECHANISM TO EVADE CYBER-ATTACKS IN SMART HEALTCARE
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	suseelag@srmist.edu.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	30/12/2022

Application Status

APPLICATION STATUS	Awaiting Request for Examination

View Documents



In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BIOMEDICAL ENGINEERING

PATENT DETAILS

Sl. No.	Patent Application No.	Status of Patent (Published / Granted)	Inventor/s Name	Title of the Patent	Applicant/s Name	Patent Filed Date (DD/MM/YYYY)	Patent Published Date / Granted Date (DD/MM/YYYY)	Patent Publication Number / Patent Granted Number	Assignee/s Name (Institute Affiliation/s at time of Appication)
1	6365163	Published	Dr N Shankar	RADIO FREQUENCY POWER AMPLIFIER FOR 6G COMMUNICATION	Dr Kavuri Vijaya Chandra, Dr. Venkatesan Vaithianathan, Dr. Kailairajan Jeyaprakash Jegadish Kumar, Suganthi Jambulingam, Mr Prabhat	10-05-2024	17-05-2024	6365163	DSU
2	202441091932 A	Published	Dr N Shankar	HIGH-THROUGHPUT MICROFLUIDIC SYSTEM FOR ORGANIC COMPOUND SYNTHESIS USING CLICK CHEMISTRY	Ms Anne Lino Jenina A, Mrs. Geetha Chandrasekran, Dr. A Jayanthi, Dr. A Samsath Begum, Mr. Tharun Raj K, Mr. M Sudhakar	25-11-2024	29-11-2024	202441091932 A	DSU
3	202541087971 A	Published	Dr N Shankar	A TATTOO-BASED WEARABLE DEVICE FOR MONITORING PHYSIOLOGICAL PARAMETERS	Dr Samsath begum A, Anne Lino Jenina A, Dr C Suresh, Dr K Mahmoodah Parveen, Dr M Anu, Dr. M Lakshmi, Dr. S Bharath, Dr M Ismail Gani, Dr Indirajith	16-09-2025	17-10-2025	202541087971 A	DSU
4	202541106573 A	Published	Dr N Shankar	A SMART DIAGNOSTIC BEAKER FOR REMOTE HEALTH MONITORING	Anne Lino Jenina A, Dr G Karthy, Dr Sundara Rajulu Navaneethakrishan, Dr T Aparna, G J Chithiraimaindan, K Jeeva Mohamed Nizarudeen, M Vijayalakshmi, T Prasanna Vengatesh	04-11-2025	19-12-2025	202541106573 A	DSU
5	202521052091	Published	Mrs N Sripoornima	A SYSTEM METHOD FOR HANDWRITING-BASED RECOGNITION, PERSONALITY PREDICTION, AND EMOTION DETECTION USING COMPUTATIONAL INTELLIGENCE.	Dr Vishal Patil, Dr Bajirao Shirole, Mr M D Sanap, Dr Kailas V Chandratre, Mr. Vijay Bodake, Mr Bhushan Shirish Chudhary, Gaurav Vijay Barde, Harish P Bhabad, Pravin V Nagare, Mrs Archana V Gangurde, Mr. Nikhil V, Kapade, Raees M Shaikh	29-05-2025	20-06-2025	202521052091	DSU

Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6365163

Grant date: 17 May 2024

Registration date: 10 May 2024

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Dr. Kavuri Vijaya Chandra, Dr. Venkatesan Vaithianathan, Dr. Kailairajan

Jeyaprakash Jegadish Kumar, Suganthi Jambulingam, Mr. Prabhat K. F ...,

Dr. Shankar Nagarajan

in respect of the application of such design to:

Radio Frequency Power Amplifier for 6G Communication

International Design Classification:
Version: 14-2023
Class: 14 RECORDING, TELECOMMUNICATION OR DATA PROCESSI EQUIPMENT
Subclass: 03 TELECOMMUNICATIONS EQUIPMENT, WIRELESS REMOTE CONTROLS AND RADIO AMPLIFIERS

Adam Williams

Adam Williams
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2024

(21) Application No.202441091932 A
(43) Publication Date : 29/11/2024

(54) Title of the invention : HIGH-THROUGHPUT MICROFLUIDIC SYSTEM FOR ORGANIC COMPOUND SYNTHESIS USING CLICK CHEMISTRY

(51) International classification	:B01L0003000000, B01J0019000000, G01N0035000000, C07H0021000000, G01N0035100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a high-throughput microfluidic system for the efficient synthesis of organic compounds using click chemistry. The system integrates a network of precisely engineered microchannels, automated reagent delivery systems, and micro-mixers to ensure optimal reagent interaction. Temperature-controlled reaction chambers with integrated sensors enable precise reaction optimization, while a real-time monitoring module employs optical sensors for tracking reaction progress. A feedback control system dynamically adjusts reaction parameters, enhancing efficiency and yield. The system's modular design allows flexibility for diverse reactions, including azide-alkyne cycloaddition and thiol-ene coupling. Additionally, an intuitive software interface automates parameter control, data logging, and process optimization through machine learning. The invention reduces resource consumption, minimizes reaction times, and ensures scalability for industrial and research applications. It provides an env

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/05/2024

(21) Application No.202441034769 A
(43) Publication Date : 10/05/2024

(54) Title of the invention : SMART WASTE MANAGEMENT INNOVATIONS IN GARBAGE SEGREGATION AND RECYCLING

(51) International classification :B65F0001000000, B65F0003000000, C12M0001107000, G06Q0010000000, B07C0005342000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT This paper presents a solution to address the mounting challenge of waste management amidst escalating urbanization and industrialization. With the proliferation of waste, efficient segregation becomes imperative for effective recycling and utilization. We propose a cost-effective Automated Waste Segregator system designed for household-level waste segregation. The system, employing Arduino Uno board as the central controller and an array of sensors, facilitates the segregation of waste into metallic, wet, and dry categories, with further subdivision of dry waste into paper and plastic. By automating the segregation process, this system streamlines waste management practices, enabling direct recycling of separated materials.

No. of Pages : 9 No. of Claims : 4

Intellectual Property Office

Registered design
[UNCERTIFIED COPY]

Design details

Design application number
6335760

Filing date (provisional)
26 December 2023

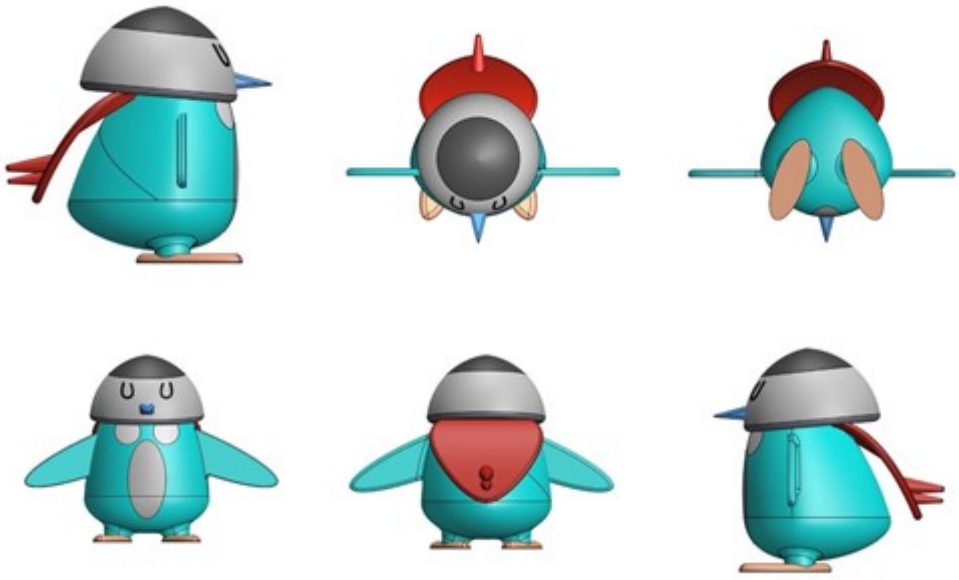
Defer registration
No

Design
A Computer Game Character

Additional description
None

Illustration disclaimer
No claim is made for the colour shown

Illustrations



Repeated surface pattern

No

Priority claims

None

Owner details

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/03/2024

(21) Application No.202441018053 A
(43) Publication Date : 22/03/2024

(54) Title of the invention : PREDICTION OF PADDY SHEATH BLIGHT DISEASE USING GENERATIVE AI-BASED ALGORITHMS INSPIRED BY THE HUMAN

(51) International classification :G06N0003040000, G06N0003080000, G06N0020000000, G06K0009620000, G06Q0010100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A paddy plant's productivity is seriously threatened by the Sheath Blight disease, which aécounts for 50% of the losses in grain production in a wide range of conductive environments. Therefore, there is a critical need for approaches to early disease prediction in order to take for active steps against plant disease attacks. The current computer vision disease detection solutions can only detect the presence of the disease after it has already manifested; in addition, the present machine learning disease prediction solutions are power and data-hungry, noise-prone, and require large amounts of data preprocessing. The purpose of this research is to provide an approach for online, real-time disease identification for proactive control using Hierarchical Temporal Memory (HTM) built on the Internet of Things immediately observed agricultural ground etiological factors. The proposed HTM is inspired by the human neocortex; HTMs are noise-resistant and continually learn and adapt. The HTM technique helps to effectively predict the presence of plant diseases utilizing Internet of Things based environmental factors related to the agriculture grounds. The proposed model is employed for the projection of sheath blight (Rhizoctonia Solani) for, the paddy (Oryza sativa) plant to examine the value of the proposed éoiutior}. By mimicking the cognitive processes of human lgaming, the incorporation of human neocortex-inspired algorithms into generative AI not only offers a powerful tool for paddy sheath blight prediction, but also improves interpretability. By providing a strong predictive framéwq - for early disease identification and proactive crop management, this research advances precision - agriculture and ultimately helps protect rice produétion worldwide from the damaging effects of paddy sheath blight.

No. of Pages : 10 No. of Claims : 3

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

ORIGINAL
क्रम सं/ Serial No. : 173191

पेटेंट कार्यालय, भारत सरकार | The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 414404-001

तारीख / Date : 22/04/2024

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *SMART AIR PURIFICATION SYSTEM FOR ELEVATED INDOOR ENVIRONMENTAL SOLUTIONS* से संबंधित है, का पंजीकरण, श्रेणी 23-04 में 1.Dr. M P Murugesan 2. Mr. Ganta Suresh 3.Mr. S. Kirubhakaran 4.Dr. M.Gowtham 5.Dr.Sundara Rajulu Navaneethakrishnan 6.Dr.M.S.Manojkumar 7.Ms. C.D.Karthika 8.Mrs. Karri Aswini 9.Dr. R. Kalaivani 10.Ms. Padmapriya Veerappan के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 23-04 in respect of the application of such design to *SMART AIR PURIFICATION SYSTEM FOR ELEVATED INDOOR ENVIRONMENTAL SOLUTIONS* in the name of 1.Dr. M P Murugesan 2. Mr. Ganta Suresh 3.Mr. S. Kirubhakaran 4.Dr. M.Gowtham 5.Dr.Sundara Rajulu Navaneethakrishnan 6.Dr.M.S.Manojkumar 7.Ms. C.D.Karthika 8.Mrs. Karri Aswini 9.Dr. R. Kalaivani 10.Ms. Padmapriya Veerappan.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि :
Date of Issue : 24/06/2024

उन्नत की मंडिव

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वत्वाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निबंधनों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

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निर्गमन सं. 06/2024	शुक्रवार	दिनांक: 09/02/2024
ISSUE NO. 06/2024	FRIDAY	DATE: 09/02/2024

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/01/2024

(21) Application No.202441001524 A
(43) Publication Date : 09/02/2024

(54) Title of the invention : A METHOD AND SYSTEM FOR PROVIDING TIME SYNCHRONIZATION INFORMATION FOR TIME SENSITIVE COMMUNICATION IN A 5G SYSTEM

(51) International classification :G06F0016230000, G06N0020000000, H04L0007000000, H04J0003060000, G02B0027000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[054] The proposed invention presents a comprehensive approach to address the pivotal challenge of time synchronization within the context of 5G Time Sensitive Communication (TSC). Leveraging cutting-edge technologies, including machine learning and artificial intelligence, our system offers a dynamic synchronization solution capable of predicting and compensating for synchronization errors in real-time, ensuring sub-microsecond accuracy across diverse applications within the 5G ecosystem. Additionally, synchronized base stations are strategically deployed to minimize signal propagation delays, guaranteeing consistent low-latency communication in dynamic network environments. Specialized synchronization protocols, enriched with error detection and correction mechanisms, further enhance the reliability of time-sensitive data transmission. With this holistic solution, our invention revolutionizes communication precision and efficiency, paving the way for transformative applications in autonomous vehicles, telemedicine, and industrial automation, ultimately reshaping the landscape of 5G TSC. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 23 No. of Claims : 10

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

ORIGINAL

क्रम सं/ Serial No. : 188921

पेटेंट कार्यालय, भारत सरकार | The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 435368-001

तारीख / Date : 23/10/2024

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *ARTIFICIAL INTELLIGENCE BASED DEVICE FOR SECURITY* से संबंधित है, का पंजीकरण, श्रेणी 10-05 में 1.Dr. B. Suganthi 2. Ms. M. R. Mano Jemila 3.Ms. Ritu Juneja 4.Mr. P. Suresh Kumar 5.Dr. Prashant Sunagar 6.Dr. M. Jasmin के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 10-05 in respect of the application of such design to *ARTIFICIAL INTELLIGENCE BASED DEVICE FOR SECURITY* in the name of 1.Dr. B. Suganthi 2. Ms. M. R. Mano Jemila 3.Ms. Ritu Juneja 4.Mr. P. Suresh Kumar 5.Dr. Prashant Sunagar 6.Dr. M. Jasmin.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

पेटेंट कार्यालय, भारत सरकार
The Patent Office, Government Of India
सत्यमेव जयते

जारी करने की तिथि : 06/01/2025
Date of Issue :

उन्नाम. पंडित

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/03/2023

(21) Application No.202341014807 A
(43) Publication Date : 24/03/2023

(54) Title of the invention : REDUCED CARBON EMISSIONS FROM VEHICLE EXPULSION THROUGH SUPERVISED MACHINE LEARNING METHODOLOGY

(51) International classification :G06K 096200, G06N 200000, G06Q 500000, G06Q 500600, H02M 054580
(86) International Application No:NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract: Carbon dioxide emissions were typically assumed to be minimised inside the automotive exhaust system in order to decrease emissions of greenhouse gases. One of the most significant effects is greenhouse gas emissions, which can be predicted and managed through. vehicle use using the supervised technique. Vehicle usage must be controlled based on the release of gaseous components in order to decrease emissions of greenhouse gases. The interaction of one of the primary greenhouse gas emissions, including atmospheric C02, methane, and nitrous oxide, with the ozone layer could result in significant climate change throughout the globe. The major source seeks to examine the relationship of known components inside C02 emissions and to minimise vehicle emissions of infrared pollutants, which may drastically affect the atmosphere's temperature.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/02/2023

(21) Application No.202341011359 A
(43) Publication Date : 24/03/2023

(54) Title of the invention : MAINTENANCE OF HYGIENIC ENVIRONMENT IN VARIOUS HUMAN PERSONAL HYGIENE THROUGH WRIST BAND USING AI TECHNIQUES

(51) International classification :A61P 070000, B32B 150100, G06T 190000, G10L 190200, H04L 693290
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT Dreadful diseases arise from various bacteria and viruses. This is due to unhygienic environment around us. Major diseases arise if washrooms are not maintained properly. When coming to public buildings this become a very major issue. In spite of many housekeeping facility still it's difficult to maintain washrooms properly. So an alert cum feedback system is developed which helps the housekeepers get an alert when the washroom is not clean.. The status of the washroom is updated by using sensor. The cleaning process of an individual is noted through the wrist band incorporated with RFID tag which registers the employee id. Once an alert is received the cleaners immediately clean the respective washroom which is registered back in database. Also through feedback system the public users can revert back the issues of washroom. This helps to maintain hygiene which keeps us away from severe impacts.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2023

(21) Application No.202331023322 A
(43) Publication Date : 07/04/2023

(54) Title of the invention : AI POWERED TECHNOLOGY FOR CHATBOT (CHAT GPT) THE REVOLUTION AND EVOLUTION

(51) International classification	:C12N 151000, G02B 030400, G03B 171200, G06F 163320, H04L 510200
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. R. Ramkumar
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(57) Abstract :
ABSTRACT AI POWERED TECHNOLOGY FOR CHATBOT (CHAT GPT) THE REVOLUTION AND EVOLUTION In a world that has already stepped into the Age of Imagination, an era that directly follows the Digital Age, the rise of the use of new technologies has led to the emergence of not only augmented and virtual reality and the accelerated development of robotics, but also to a leap in the development of artificial intelligence. Its outlines are clearly visible in the latest model of ChatGPT, a product of the company, it already had one million users. The name of this AI bot appeared in thousands of daily newspaper headlines, including in the domestic Serbian daily newspaper, and continuously appears in everyday reports from various fields that are also published by electronic daily portals. In addition, the news about it gained significant number of followers as the AI itself on the social and business networks such as LinkedIn. Given that this is the beginning of a new era both for numerous sciences as well as for the civilization, this article is divided in three parts. According to said, the first part pays attention to early impressions of the use of this model and its possibilities, the second analysis its application so far and its impacts, while the third part reviews its possible applications in digital humanities, archivists and museology. Additionally, as the first search engines based on the use of this model appeared in the meantime, attention is also drawn to their capabilities. This invention is written based on the material and articles published so far, as well as on testing of this model and its related search engines.

No. of Pages : 14 No. of Claims : 7

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

ORIGINAL
क्रम सं/ Serial No. : 140014

पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India

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डिजाइन सं. / Design No. : 383823-001

तारीख / Date : 13/04/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *MEDICAL WASTE TREATMENT DEVICE* से संबंधित है, का पंजीकरण, श्रेणी 24-01 में 1.Dr. P.Nagarajan 2. Dr. R.Anitha 3.Dr. K.Sundaramoorthy 4.Dr. R.Ramkumar 5.Dr. A.V.G.A.Marthanda के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

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जारी करने की तिथि :
Date of Issue : 03/07/2023

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क्रम सं/ Serial No. : 160002

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डिजाइन सं. / Design No. : 385077-001

तारीख / Date : 26/04/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *MACHINE LEARNING-BASED HUMANOID DEVICE FOR OBJECT IDENTIFICATION* से संबंधित है, का पंजीकरण, श्रेणी 10-05 में 1.Dr. Manoj Eknath Patil 2. Dr. Sandip Shankarrao Patil 3.Dr. Anjana Ghule 4.Mr. Ashish Tryambak Bhole 5.Mr. Sarkarsinha Harsinha Rajput 6.Mr. Rohidas Balu Sangore 7.Dr. R.Ramkumar के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

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In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि :
Date of Issue : 14/03/2024

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INTELLECTUAL PROPERTY INDIA
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ORIGINAL
क्रम सं/ Serial No. : 161779

पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 386250-001

तारीख / Date : 15/05/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *SOLAR POWER ELECTRIC VEHICLE CHARGING SYSTEMS* से संबंधित है, का पंजीकरण, श्रेणी 13-02 में 1.Dr. M. Karthik 2. Mrs. L. Sreevidya 3.Dr. K. Umamaheswari 4.Mrs. S. Abiramasundari 5.Mr. G. Mani Sankar 6.Dr. R.Ramkumar के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 13-02 in respect of the application of such design to *SOLAR POWER ELECTRIC VEHICLE CHARGING SYSTEMS* in the name of 1.Dr. M. Karthik 2. Mrs. L. Sreevidya 3.Dr. K. Umamaheswari 4.Mrs. S. Abiramasundari 5.Mr. G. Mani Sankar 6.Dr. R.Ramkumar.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि :
Date of Issue : 28/03/2024

कृष्णात पी पंडित
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*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वत्वाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निबंधनों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/04/2023

(21) Application No.202341027572 A
(43) Publication Date : 26/05/2023

(54) Title of the invention : Battery Management System for Green Energy Storage

(51) International classification :G02F 011335, H01M 104200, H01M 104800, H02J 033200, H02J 070000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention belongs to the field of electronics and application is to provide battery management. The process is unique and novel to produce less energy in the society. To provide battery management by adopting smart process. State-of-charge (SOC), state-of-health (SOH), state-of-function (SOF), and state-of-temperature (SOT) indicators for batteries have all been used extensively. By using these indicators, safe functioning is ensured without excessive charging or discharging. Additionally, it can support gratifying the design life. The research on battery state indicators over the last three years and suggests that modern battery state indicators be required.

No. of Pages : 8 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/10/2023

(21) Application No.202341070637 A
(43) Publication Date : 01/12/2023

(54) Title of the invention : THE CHATGPT ROLE IN REVOLUTIONIZING ADVANCING REAL-TIME LANGUAGE TRANSLATION AND INTERPRETATION

(51) International classification	:G06F0040580000, A61B0090000000, G06N0003040000, G06F0040550000, G06F0040253000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention presents the ChatGPT role in revolutionizing advancing real-time language translation and interpretation. The present invention comprising of receiving text input in a source language from a user, employing a real-time translation module to translate and interpret the text into a target language, generating a response in the target language and providing it to the user and continuously improving translation and interpretation accuracy based on user interactions and feedback. Further, the real-time translation module applies neural machine translation techniques to facilitate accurate and real-time language translation and interpretation. Accompanied Drawing [FIG. 1-2]

No. of Pages : 19 No. of Claims : 10

INTELLECTUAL PROPERTY INDIA
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सत्यमेव जयते

ORIGINAL
क्रम सं/ Serial No. : 143699

पेटेंट कार्यालय, भारत सरकार
The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 390395-001

तारीख / Date : 15/07/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *SOLAR POWERED AGRICULTURAL E-VEHICLE* से संबंधित है, का पंजीकरण, श्रेणी 15-03 में 1.Dr. Sujit Kumar 2. Dr. R. Ramkumar 3.Dr. V. Sekar 4.Dr. M. Lakshmi 5.Ms. P. Nivetha Nirmal के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 15-03 in respect of the application of such design to *SOLAR POWERED AGRICULTURAL E-VEHICLE* in the name of 1.Dr. Sujit Kumar 2. Dr. R. Ramkumar 3.Dr. V. Sekar 4.Dr. M. Lakshmi 5.Ms. P. Nivetha Nirmal.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।
In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि :
Date of Issue : 12/09/2023

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
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The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(21) Application No.202321077169 A
(22) Date of filing of Application :12/11/2023
(43) Publication Date : 15/12/2023

(54) Title of the invention : MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE BASED CREDIT CARD FRAUD DETECTION SYSTEM

(51) International classification :G06Q0020400000, G06N0020000000, G06N0003080000, G06N0003040000, G06Q0020340000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention presents a ML and AI based Credit card Fraud Detection System. The present invention comprising of a module for collecting data designed to gather transactional information linked to credit card usage, a machine learning model, trained on historical data, devised to recognize patterns and irregularities suggestive of fraudulent transactions, and a capability for real-time monitoring, facilitating the analysis of incoming transaction data through the trained machine learning model. A module dedicated to fraud detection, set to initiate alerts or preventive measures upon identification of potentially fraudulent activities. Further, the machine learning model employs advanced deep learning techniques, elevating its capacity to discern intricate patterns and variations within credit card transaction data. Also, equipped with an adaptive learning mechanism that regularly updates the machine learning model based on emerging trends and new data patterns in credit card fraud. An interface accessible to users, providing entry to historical and real-time fraud detection reports, enabling users to scrutinize, validate, and adjust the system's parameters. Accompanied Drawing [FIG. 1-2]

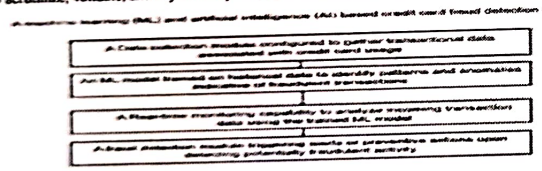

Figure. 1

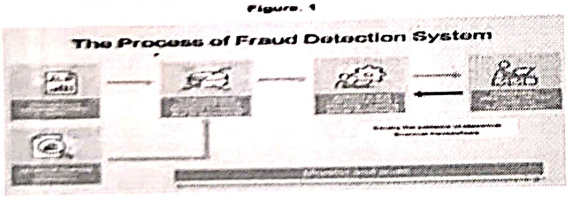

Figure. 2

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/12/2023
(21) Application No.202341086089 A
(43) Publication Date : 12/01/2024

(54) Title of the invention : METHOD OF MICROBIAL CONTAMINATION OF FRESH FRUIT AND VEGETABLES

(51) International classification :G06Q0010060000, G06Q0030000000, G06Q0050020000, G06Q0010080000, A23L0003346300
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed invention presents a multifaceted approach to address the persistent issue of microbial contamination in fresh fruits and vegetables. It encompasses microbiome analysis to identify contamination sources, genetic modification of crops for pathogen resistance, and precision farming techniques for optimal growth conditions. The use of advanced packaging materials with antimicrobial properties ensures product safety during storage and transportation. An intelligent tracking and monitoring system monitors temperature and humidity during transit, while an educational program fosters food safety awareness. Additionally, the invention includes a computer-implemented method for managing and analyzing microbiome data to assess and mitigate contamination risks. This comprehensive system aims to revolutionize the production and distribution of fresh produce, promoting safety, quality, and sustainability in the food supply chain. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 23 No. of Claims : 10

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सत्यमेव जयते
GOVERNMENT OF INDIA

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Department of Industrial Policy and Promotion
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Design Application Details

Application Number:

385077-001

CBR Number:

205277

CBR Date:

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Design Application Status

Application Status:

Design Accepted and Published, Journal No is 11/2024 and Journal Date is 15/03/2024

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Design Application Details

Application Number:

386250-001

CBR Number:

206029

CBR Date:

15/05/2023 18:35:30

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Design Application Status

Application Status:

Design Accepted and Published, Journal No is 13/2024 and Journal Date is 29/03/2024

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Disclaimer: Application status is available for the application filed on or after 1st April 2009 with application no 222230.The information under " Design Application Status" is dynamically retrieved and is under testing, therefore the information retrieved by this system is not valid for any legal proceedings under the Design Act 2000. In case of any discrepancy you may contact the appropriate Patent Office or send your comments to following email IDs:

Design Office, Kolkata : controllerdesign[dot]ipo[at]nic[dot]in
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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/11/2022

(21) Application No.202241062995 A
(43) Publication Date : 18/11/2022

(54) Title of the invention : AI BASED COMPUTER VISION USING ML APPROACHES TO PREDICT AND DIAGNOSE AUTISM DISORDERS

(51) International classification :G06N0020000000, G16H0050200000, G16H0050300000, A61P0025000000, A61B0005160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
In this present world, the incidence of autism disorders is comparatively high in many countries due to improper health in the maternity period in women as well as due to hereditary genetic disorders. These types of disorders are increasing exponentially alongside children, causing stress in their neurological and emotional well-being. Children are being isolated due to this ailment, causing emotional stress to them while living in this society. The treatment for the autism disorder is expensive and the ailment has not been detected prior to that. If the treatment was given prior to this, the growth of this disorder could be reduced by developing mental stability in those children. To attain early intervention to the adolescents, the machine learning predicts and diagnoses the accurate data to determine the stages in the autism. By detecting anomalies in children's health, machine learning with AI forecasts the accurate data with convenience. With previous intervention, computer vision powered by artificial intelligence is employed to anticipate and identify autistic diseases. The anomaly with its emotional stress may be predicted using different bodily sensory activities, and this tends to be an autism condition in state. Different levels of stages are present in the autism which are been categorized using the AI-technology with computer vision. Computer vision visualise and recognizes the abilities in the images and multimodal representations and determines abnormality in the images. Keywords: Machine Learning, AI, Visual Images, Neurological stress, Autism Disorder, Computer Vision

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/11/2022

(21) Application No.202241063001 A
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(54) Title of the invention : ML STRATEGIES APPROACH FOR ANALYSIS OF IOT TRAFFIC MECHANISMS IN AN IOT CLOUD ENVIRONMENT

(51) International classification	:H04L0067120000, H04W0004700000, G06N0020000000, H04L0047110000, H04L0045000000
(86) International Application No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
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(57) Abstract :
High volume and data transmission over the network can both increase traffic.Throughout this approach, machine learning methods are applied to data about network traffic to precisely identify the Internet-of-things that are attached to the network. These properties of the internet traffic on each IoT system are recognised to generalise the internet traffic. Such models were created to concisely and precisely describe the characteristics of IoT data in a cloud environment. An IoT cloud is experiencing packet transmitting data efficiency issues as a result of data traffic that lowers efficiency levels.Most strategies function with great. efficiency under a variety of traffic conditions. IoT data originates from several sensors and is collected in various IoT designs, including such IoT ports during an IoT platform. Additionally, a lot of IoT devices are still quite susceptible to intrusion. Although encrypting might be advantageous for IoT-related connectivity, it is crucial to make sure that consumers can still view the traffic that respective sensors generate.Improper failure frequently degrades performance metrics or perhaps even results in catastrophes. ML may be used to optimise the distribution of resources, reduce traffic, and improve service control. It has the potential to evaluate information in real-time and outsource decision-making. Since IoT systems would create enormous volumes of data, ML would be effectively required to manage such an enormous quantity of data. To minimise the congested strategy, the user should ascertain the number of hidden devices as in the IoT environment prior to the training phase.To establish a network framework that is effective at managing and transferring IoT data without network traffic while maximising overall performance and effectiveness by utilising different machine learning methods.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/12/2022

(21) Application No.202241074164 A
(43) Publication Date : 30/12/2022

(54) Title of the invention : IDENTIFICATION AND ASSISTANCE FOR HUMAN EYE THROUGH VOICE-BASED SYSTEM TO HELP AUTISM CHILDREN

(51) International classification	:A61P0025000000, A61B0005160000, G06Q0010100000, G16H0020700000, A61P0025180000
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
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Filing Date	:NA

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(57) Abstract :
Autism spectrum disorder (ASD) is a neurodevelopmental issue that disrupts not just typical brain development but also cognitive abilities, behavioural patterns, social interactions, and the capacity for effective communication. As a developmental disorder, autism spectrum disorder (ASD) manifests primarily in impaired social and communicative skills. Decreased interaction, impulsive and repeated conduct, trouble comprehending the emotions conveyed by others, etc. are among the most often seen symptoms. The degree of symptoms varies according to the person. Children on the autism spectrum often struggle with nonverbal and verbal communication as well as the interpersonal skills that are fostered by today's technological advancements. While a single hospital test, such a blood test, cannot be used to diagnose autism, there are variety of specific tests and evaluations that may assist in the acquisition of the skills necessary to improve the child's quality of life. There is currently no cure for autism, and it is a lifelong illness. However, these assessments might come at a hefty cost. Families with autistic children often have to shoulder a heavy financial load. It is possible to design a remote assistant that can handle children like these, it may be organized to accommodate varying degrees of cognitive impairment. All of the modes' features, as well as their behaviour, will remain unchanged. The smart assistant was designed to do a number of crucial tasks, including as recognizing and identifying objects, providing assistance to people, retrieving and stowing away items, and delivering food and drinks. These features are standard, and a full list of what each mode includes is provided. With a replacement battery, this handy assistant may always be powered up, even if the kid is sound asleep.

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/12/2022

(21) Application No.202241070014 A

(43) Publication Date : 16/12/2022

(54) Title of the invention : REAL-TIME IOT APPLICATIONS FOR CONTROLLING WASTE DISPOSAL IN SMART CITY APPLICATIONS WITH INTEGRATED GARBAGE BINS

(51) International classification :B65F0001140000, B65F0001160000, B65F0001000000, B65F0007000000, G06Q0050260000

(86) International Application No :NA

Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA

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(62) Divisional to Application Number :NA

Filing Date :NA

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(57) Abstract :

Abstract: Smart trash cans are required in smart cities. The whole IoT-based trash can is intended to streamline the process and monitor it effectively in order to assess various environmental conditions and stabilise the environment. For a healthier lifestyle in this world, environmental cleanliness is crucial. The conventional method of keeping track of waste in strategically positioned trash cans is highly time-consuming, labour-intensive, and ineffective. Garbage bins must be monitored and managed in smart cities to provide a safe and tidy environment. The amount of waste produced in cities increased as a consequence of the expanding human population. The purpose of the paper is to create a smart waste bin alert system that can detect garbage conditions. Real-time IoT devices are used to send information to the sanitary authority on the state of garbage. These IoT notifies and identifies the cleaners if there is any excessive garbage in the trash can. When a motion is detected, an automated motion detector raises the garbage can's lid, which then automatically opens. The smart trash correctly distinguishes between liquid and solid waste.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2022

(21) Application No.202241067540 A
(43) Publication Date : 02/12/2022

(54) Title of the invention : INTEGRATING MACHINE LEARNING TO INSPECT MODERN AGRICULTURE INVESTIGATIONS FOR TEA LEAF DISEASE

(51) International classification :G06N0020000000, G16H0050200000, G06K0009620000, A01G0007040000, G16H0050300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Numerous devices are interconnected with cutting-edge ML algorithms that assess soil, humidity, and nutrient levels and predict climate. This can aid in enhancing precision accuracy and efficiencies while lowering the risks and expenses related to farming activities. The crops benefit from rapid and healthy growth owing to the ML technology. This information enables producers to make the best decision at the appropriate moment to reduce the likelihood of yield losses caused by diseases or even other factors. It is essential to continually check the condition of the leaves and promptly identify any areas that can cause damage. To avoid or reduce losses whilst maintaining leaf health is the main goal of disease prevention. Whenever a tea plant is diseased, the diseased leaves typically fall off before their time, as well as the fresh branches shrivel up. These are detected using a machine learning algorithm based on the ammgement and content of the leaves. Leaves with infections can be done depending mostly on uncontrolled changes in the growth of such diseases in plant growth. An area of the leaf described as segmentation is where projections originate and extend out in distinct ways. One of the indications is a noticeable alteration in the plant's pigment, size, or functionality as a result of the disease.Machine learning in agriculture enables very accurate disease diagnosis while lowering resource utilisation and minimi.;.,;, false information. Every prior illness treatment in tea leaves should be recognised and identified due to the expensive nature of tea leaves. Patterns were recognised and illnesses were found by using plant identification based on the leaves.Using a machine learning technique, image segmentation in leaf structural composition is detected to determine whether or not a plant leaf is sick.There are various different illnesses that affect tea leaves in agriculture, and machine learning approaches can precisely identify them. Keywords: Machine Learning, Leaf Diseases, Leaf Recognition, Pattern Recognition

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2022

(21) Application No.202241067535 A
(43) Publication Date : 02/12/2022

(54) Title of the invention : REAL-TIME DISRUPTION IN IOT DEVICES USING VULNERABILITY IDENTIFICATION VIA ML ALGORITHM HIERARCHY

(51) International classification :G06F0021550000, H04L0067120000, G06F0021570000, G06F0021560000, H04L0009320000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
Significant growth in the use of the Internet-of-Things has increased fire importance of vulnerabilities. Wireless data networks are used by IoT devices to communicate among themselves and send data to a centralised database. IoT parties typically have few abilities, which makes them prime options for intrusions. Through an IoT infrastructure, a wide range' of devices that have capabilities, traits, and interoperability interact with one another. IoT technology must be protected from a variety of threats in order to be used. The scale of a network increases the likelihood of an attack. Different cyber-attacks based on the IoT realtime environment occur due to excessive network congestion traffic. Some of the cyberattacks, such as DDOS, malware attacks, network congestion attacks, and man-in-the-middle attacks, can cause malicious nodes in the network which damage the data.By intreducing an additional susceptibility, it makes i, possible for a device to substantially alter performance or carry out behaviours on a user's browser, including collecting personal data.Confidentiality anonymity, intrusion prevention, and analysing cybersecurity threats are some of the main uses of ML. Algorithms use mathematically based methods and massive amounts of data to develop complex behaviours. Since file transmitter and receiver are frequently unaware that their traffic ,s being monitored, these assaults are exceedingly difficult to counteract The whole IoT infrastructure might be severely harmed by flaws, mostly in standards employed by IoT. This vulnerability of IoT privacy is that connected device performance may be altered by the supplier even without the user 's permission or agreement. Different ML techniques are used to train out the data vulnerability within the dataset parameters to identify those cyber-attacks in IoT-based real-time environment.

No. of Pages : 6 No. of Claims : 6

ORIGINAL

मूल/No : 128669

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

डिजाइन के पंजीकरण का प्रमाणपत्र
CERTIFICATE OF REGISTRATION OF DESIGN

डिजाइन सं. / Design No.	:	373511-001
तारीख / Date	:	02/11/2022
पारस्परिकता तारीख / Reciprocity Date*	:	
देश / Country	:	

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **SOLAR POWERED OBJECT SENSING BASED PUBLIC LIGHTING FIXTURE** से संबंधित है, का पंजीकरण, श्रेणी **26-03** में 1.Dr G Kumaresan 2. Dr. R. Ramkumar 3.Dr S Sivarajeswari 4.Priya C B 5.Dr. S. T. Kumaravel 6.Dinakar S 7.Abinith T 8.Maheshwaran S 9.Siddharth V 10.Nithish Adhithya D के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class **26-03** in respect of the application of such design to **SOLAR POWERED OBJECT SENSING BASED PUBLIC LIGHTING FIXTURE** in the name of 1.Dr G Kumaresan 2. Dr. R. Ramkumar 3.Dr S Sivarajeswari 4.Priya C B 5.Dr. S. T. Kumaravel 6.Dinakar S 7.Abinith T 8.Maheshwaran S 9.Siddharth V 10.Nithish Adhithya D.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।
In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

निर्गमन की तारीख/Date of Issue : 07/02/2023

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/08/2022

(21) Application No.202241046403 A
(43) Publication Date : 26/08/2022

(54) Title of the invention : A MACHINE LEARNING ALGORITHM TO ASSESS AUTISM AND ITS SYMPTOMS IN COMPUTER VISION TECHNIQUE TOOLS

(51) International classification :G16H0050300000, G06Q0050220000, G16H0050200000, A61B0005000000, G06Q0010100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
A neurological developmental impairment known, as autism spectrum disorder affects cognition, behavior, social interaction, communication, and other aspects of normal brain development. While there is no one medical test, such as; a blood test, for the diagnosis of autism, there are a number of particular tests and assessments that can help the kid gain the skills they need to enhance the quality of their life. Autism is a lifelong disorder with no known treatment. However, the price of these evaluations'might be rather high. A significant financial burden frequently falls on families of autistic children. Using machine learning methods, this idea tries to create an automated system for diagnosing' autism. It aids the physician in complications, gives children and families access to such practical diagnostic assessments as financial assistance, and also enables it to be used in underdeveloped remote communities where there aren't enough specialists to diagnose autism in younger children when clinical symptoms aren't yet obvious. The system is divided into two categories, one from the perspective of parents or ■ other adult caregivers, and the other from the perspective of children. The parents' end of the questionnaire is where the information is collected, analyzed, and supplied with the seventy of autism that is affecting their children.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/06/2022

(21) Application No.202241031368 A
(43) Publication Date : 10/06/2022

(54) Title of the invention : STRESS PREDICTION USING AN INTERNET OF STRESS PREDICTION USING AN INTERNET OF THINGS-BASED NOVEL WEARABLE SMART ELECTRONIC DEVICE USING MACHINE LEARNING SUPERVISED TECHNIQUE

(51) International classification :G06F0003010000, G06F0001160000, A61B0005020500, H04W0004800000, A45F0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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Filing Date :NA

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(57) Abstract :
Abstract Skin-based wearables provide a strong benefit in permitting continuous tracking of many physiological indices and markers amongst various described portable hospital environments. Wearable sensors which monitor minute electrical changes in the skin might be useful in detecting arrhythmias by measuring the heart's electrical activity. Dependable biopotential-capturing electrode those are disposable and have long-term durability are necessary for accessible and precise tracking of electrophysiological impulses in a wide array of different situations, but they must not induce skin rashes or immune reactions. Individuals would be less vulnerable to stress or less prone to recognize if they're under a lot of stress. Stress methodologies might assist individuals comprehend and manage stress by raising their consciousness of elevated stress levels that may go undiagnosed.This wristband can continually monitor a user's psychological anguish and remotely communicate stress-related information to the user device.Levels of interaction via sensing devices get sent to such gadgets. By assessing the association between such signals, smart wristband provides an automated machine learning algorithm for detecting whether the issue is stressed.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/05/2022

(21) Application No.202241029443 A
(43) Publication Date : 03/06/2022

(54) Title of the invention : CLASSIFYING DDOS OCCURRENCES EVALUATION USING MACHINE LEARNING APPROACH WITH PREDICTIVE ANALYSIS

(51) International classification :H04L0029060000, G06N0003040000, H04L0029080000, G06N0003080000, G06N0020000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
One of the primary issues with the internet is its security, and DDoS is one of the most serious and destructive security issues, reducing network and resource efficiency by delivering concurrent demand traffic to the targeted network or system. The attackers even utilise genuine traffic and, in certain cases, modify the traffic metadata to avoid monitoring systems. A novel Ddos attack detection system based on Convolutional Neural Network principles is proposed in this research study. This approach examines system resources and network data to train the ANN and CNN DDoS detection mechanism to distinguish between regular and abnormal traffic. Legitimate traffic is permitted to flow through, while suspect traffic is identified and sent via the detection and protection system.This hybrid CNN ANN-based DDoS detection system detected DDoS assaults well.

No. of Pages : 7 No. of Claims : 4

ORIGINAL

मूल/No : 122332

सत्यमेव जयते

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GOVERNMENT OF INDIA
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THE PATENT OFFICE

डिजाइन के पंजीकरण का प्रमाणपत्र
CERTIFICATE OF REGISTRATION OF DESIGN

डिजाइन सं. / Design No.	:	369790-001
तारीख / Date	:	25/08/2022
पारस्परिकता तारीख / Reciprocity Date*	:	
देश / Country	:	

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **SOLAR POWERED BIOMASS INTEGRATED CROP DRYER** से संबंधित है, का पंजीकरण, श्रेणी **15-03** में 1.Dr G Kumaresan 2. Dr. R. Ramkumar 3.Priya C B 4.Dr.A.P.Sivasubramaniam, 5.Dr. S. Maniraj 6.Rithikaa K 7.Elankathiran K K 8.Harshath Solmon A T 9.Shiyam Sundar. V 10.Deepak Santham S के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class **15-03** in respect of the application of such design to **SOLAR POWERED BIOMASS INTEGRATED CROP DRYER** in the name of 1.Dr G Kumaresan 2. Dr. R. Ramkumar 3.Priya C B 4.Dr.A.P.Sivasubramaniam, 5.Dr. S. Maniraj 6.Rithikaa K 7.Elankathiran K K 8.Harshath Solmon A T 9.Shiyam Sundar. V 10.Deepak Santham S.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।
In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

निर्गमन की तारीख/Date of Issue : 29/12/2022

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2022

(21) Application No.202241021789 A
(43) Publication Date : 29/04/2022

(54) Title of the invention : TRIAL BOOST PERFORMANCE EVALUATION BY INTEGRATION OF IOT WITH BLOCKCHAIN

(51) International classification :G06F0021620000, G16H0010200000, G06Q0050220000, G16H0010600000, H04N0019130000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No :NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract: Our personally identifiable information is more significant than ever.Because of the unrestrained expansion of internet-based services, we have had to accept numerous tradeoffs in how we share it. Personal data is constantly acquired in the IoT era. As much as ever, we seek privacy-preserving technologies in which users always remain privacy and security. In the proposed work, we describe a reliable method for controlling the transfer of sensitive data in the context of clinical trial participation recruiting. We exercise extreme caution to safeguard both sides' objectives such as the individual may keep their data private until the agreement is made, and the Healthcare Research Center can be confident that it is collecting meaningful and legitimate data.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/03/2022

(21) Application No.202241012972 A
(43) Publication Date : 08/04/2022

(54) Title of the invention : EMPLOYING OF SOC TRACKER FOR RESCUING AND SUPERVISING A CHILD IN CASE OF EMERGENCIES

(51) International classification :A61B0005024000, G08B0021020000, A61B0005000000, A61B0005020500, H04B0001382700
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
According the study, thousands of children go kidnapped every year, but it is tragic that only onerthird are located and the rest are considered lost. This research proposes a SOC (Safety of Child) wearable tracking device for tackling the particular problem. These provides details of the child to their parents in the case if they are discovered to be kidnapped. The parents1 smartphone will acquire information in two methods. This is really a basic application that is accessible to all kinds of devices and it is not restricted to any smart phones.The child's whereabouts, temperature, including pulse rate data are sent to parent's smartphone, then finally an SOS (save our soul) signal and alarm sound is triggered, that is heard by nearby people, as well as the child can be saved. These details are provided in response to specific terms including such Geolocation, BUZZ, HBT,TEMP, and so on. The heart rate variability is the second method of obtaining information. The heart sensor's threshold value has been set. During an emergency, the kid's heart rate rises, which is recognized by the sensor, so when it reaches the threshold value, the position and heartbeat rate are promptly sent to the parents, indicating if their child need assistance.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(21) Application No.202241020179 A
(22) Date of filing of Application :04/04/2022
(43) Publication Date : 22/04/2022

(54) Title of the invention : AN IOT BASED ASSISTANT FOR VISUALLY IMPAIRED

(51) International classification	:A61H0003060000, G09B0021000000, G06F0003010000, A61F0009080000, A45B0003080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract: The device's overall goal is to give an easy and safe; way for the blind to overcome their obstacles in daily life. IoT and AI technology has been used to assist those who are visually impaired First, supporting visually impaired persons in detecting and avoiding obstacles at various levels, and to maintain the, social distance in the indoor areas such as malls. Secondly, supporting with navigation in both indoor and outdoor areas. Thirdly, permitting a user to click a contact button to send voice-based commands and auto notifications about emergency situations to caregivers through Text and e-mail. Lastly, identifying employing vibration to provide tactile feedback and tethered or wireless earbuds to provide audio feedback along with presenting users with a low-battery warning. The uniqueness of the system lies in the voice-based commands and the indoor eye design using which the user can manage their daily lives without any hurdles.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(21) Application No.202241012072 A
(22) Date of filing of Application :07/03/2022
(43) Publication Date : 18/03/2022

(54) Title of the invention : RESOLVE OF LOCUST EPIDEMICS IN FARMING EXPLOITATION USING MACHINE LEARNING APPROACH

(51) International classification :G06N0003080000, A01M0005080000, G06N0003040000, G06N0020000000, A01G0022000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An infestation of locusts presents a serious threat to world biodiversity and productivity expansion. Those locusts swarm on such a routine basis in arid and semi-arid countries including Africa, West Asia, and a tiny portion of South Asia. Pesticides are being used to inhibit locust eggs from emerging and swarming, which is a major problem. In Gujarat, India, locust outbreaks infested a considerable number of agricultural regions in 2019. The locust is primarily a threat to different vegetation regions (i.e., SchistocercaGregaria). Agricultural government entities can provide information about the environment including such soil moisture, soil conditions, and the broad concentration of agro regions.The locust's position is determined using a deep learning technique that determines the precise data about the locust's breeding zone.To commence a locust plague prevention strategy, the productive uses of comparison is calculated using these approaches using deep learning techniques. Deep learning algorithm technique has been developed to lessen the hazard over agricultural regions by providing an efficient way of high forecasting in hazardous zones at a minimal cost.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2022

(21) Application No.202241057753 A
(43) Publication Date : 21/10/2022

(54) Title of the invention : DECENTRALIZING AND SECURING NETWORK COMMUNICATIONS BY EVOLVING ADVANCED BLOCKCHAIN TECHNOLOGY THROUG SECURE-WSN

(51) International classification :H04L0009320000, H04L0009060000, H04W0084180000, H04L000908S0000, G06F0021640000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A centralised system can reduce the weaknesses due to specific actors, which causes decentralization. These can optimise the resources, which enhances the services to perform better with greater consistency.Every infrastructure that supports or enables blockchains is referred to as a blockchain framework. The Blockchain offers protection, integrity, and entity throughout the whole network system. This function is performed by engaging a 3rd party mediator and rendering the data of every digital asset accessible and immutable. Every node compromises a number of edges, each of which has routes where the nodes are connected altogether.Incorrect information transmitted on the route of compromised nodes could slow down network throughput and increase transmission delay. The hierarchical nodes are used in decentralised networks where the nodes at the bottom are used for single connectivity. This paper suggests a technique utilising blockchain technology geared towards enhancing web security.The effectiveness of the application depends in part on network security considerations.Blockchain technology is used for transmitting data to create a secured wireless network. The integrity of Wsn is improved statistically by employing an upgraded blockchain with a decentralising technique. To ensure durability, WSN interacts with nodes and enables communication between them. The security of sensing data may be significantly increased by applying a blockchain cipher standardised over Wsn. Keywords: WSN, Nodes, Decentralising Technique, Blockchain Encryption, Integrity, Network Security

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2022

(21) Application No.202241057754 A
(43) Publication Date : 21/10/2022

(54) Title of the invention : AVOIDANCE OF MONETARY DAMAGE BY ANALYZING FRAUDULENT TRANSACTIONS USING ML TECHNIQUES

(51) International classification :G06Q0020400000, G06N0020000000, G06Q0030000000, G06Q0040000000, G06Q0020380000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Online transactions are rapidly increasing, so the transactions are also increasing, which causes online theft. Due to the frequency and volume of transactions, fraudulent transaction recognition is the primary challenge of forecasting. An increase in fraud has been relied on by widespread credit or debit card usage. Machine learning is efficient in distinguishing between real and illegitimate activities. There are a lot of different types of credit-card transactions. This probability of effective fraudulent activity must be decreased by the use of a detection fraud technique. Depending on their regions and values, the consumers use their fraud cards for a variety of things, demonstrating the vast variety of suspicious transactions. The major cause of this vulnerability has been the fact that a relatively significant fraction of all transactions is fraudulent, while a majority are valid payments. This suggested method performs well in terms of processing time but at the expense of reliability. Additional investigation is utilised to properly create and implement additional cutting-edge technology to address various legitimate fraud prevention issues. Machine learning is being utilised on a greater scale to identify and eliminate fraud. In order to analyse user information, machine learning algorithms are crucial.Machine learning is efficient in distinguishing between real and illegitimate transactions. These transactions can cause monetary damage to the user without the user's acknowledgement. Monetary damage includes digital transactions and financial theft, which need to be checked and analysed to identify whether the transactions are legitimate. Efficient ML algorithms are determined which pre-process and train the data effectively to stabilise the monetary issue while doing the online transactions. Different states of credit/debit card detection have been identified in recent years to provide stability and confidentiality while transferring payment. Keywords: Online Transactions, Machine Learning, Fraudulent, Monetary Damage, Digital Transactions

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/10/2022

(21) Application No.202241059959 A
(43) Publication Date : 04/11/2022

(54) Title of the invention : INTRUSION DETECTION RECOGNITION USING DEEP LEARNING FOR USER DEVICES WITH CYBER-SECURE MECHANISM

(51) International classification :G06F0021550000, G06N0003080000, A61B0005000000, G06F0021570000, H04W0012610000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The prevalent usage of interconnection and interoperability in computer systems has evolved into a crucial requirement to improve our daily lives. Communication networks require improved protections to combat potential emerging threats as well as security precautions to mitigate vulnerabilities.IDSs could determine among authorised and intentional use of patterns of significant traffic, typical behaviour, or particular rules that characterise an intrusion. Security flaws make the assumption of communication exchange dependent on cyberattacks. An intrusion will be detected and eradicated from the device if it is detected prior to data loss. Using minimal user intervention, deep learning algorithms may acquire interpretations of actual data at various degrees of sophistication. However, a huge number of non-linear levels will autonomously create the characteristics that enhance the generalisation of the categorization task. A hierarchy of characteristics is established as every level acquires about a specific set of attributes using results from the preceding levels. The overall reliability of the Deep model is severely impacted by the input parameters that are heavily dependent on it.In this research, we developed a .deep learning-based intrusion detection system to find IoT intrusion attacks. A deep learning-based IDS strategy that detects abnormalities by examining traffic patterns across various IoT user devices.This paper discusses network intrusion detection and how to combine relevant features to mitigate common security risks and vulnerabilities. Using the cyber-secure mechanism in the user devices, the abnormalities in the malicious nodes are identified and detected to recognise the intrusion detection in those devices.

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :20/10/2022

(21) Application No.202241059955 A

(43) Publication Date : 04/11/2022

(54) Title of the invention : IMPLEMENTATION OF AN ENHANCED ADV-IDPS APPROACH TO LEVERAGE OIT NETWORKS IN HOUSEHOLD DEPLOYMENT

(51) International classification :G06F0021550000, G06F0021620000, H04L0067120000, H04L0009060000, H04W0012128000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
IDPS tends to improve the reliability by identifying the breaches within the network by identifying the malicious nodes causing those cyber-attacks. Although intrusion detection techniques can be used to detect network breaches, they typically provide limited capability for responding to an attack once it has begun. Therefore, it is crucial to examine strategies in . . the IoT setting in order to recognise, stop, or discover emerging intrusions. Furthermore, various situations in which it must be employed pose a confidentiality and safety risk to users.In an effort to overcome this concern, intrusion detection systems have been widely used in a number of situations to combat various types of cyber-attacks, and they have established themselves as a crucial part of network security measures. Adv-IDPS is used to leverage those IoT networks within real-time household devices. The enhanced adv-idps mechanism tends to prevent and minimise the typical errors and limitations which occur in those networks. A malicious node within the network is alerted using the Adv-idps, which tends to improve the quality by minimising the error in the performance.Hence, in this paper, we develop the concept of adv-idps and explore the possibility of applying it to assess an IDS node's reliability. This number of attacks could increase while IoT-using applications develop. The likelihood of network privacy and data leakage is significantly reduced by being aware of the significant growth in cyber-threats throughout the IoT environment. This paper detailed IoT threats at every potential prevention and mitigation strategy using ML . algorithms and emphasised the latest research developments in IoT advanced threats in household devices.

No. of Pages : 7 No. of Claims : 6

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Department for Promotion of Industry and Internal Trade
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Government of India

सत्यमेव जयते

Application Details

APPLICATION NUMBER	202441051506
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TITLE OF INVENTION	DEVELOPMENT OF FABRICATION AND CHARCATERIZATION OF SAW DUST POLYMER COMPOSITE FOR MECHANICAL APPLICATIONS
FIELD OF INVENTION	POLYMER TECHNOLOGY
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APPLICATION STATUS	**Awaiting Request for Examination**

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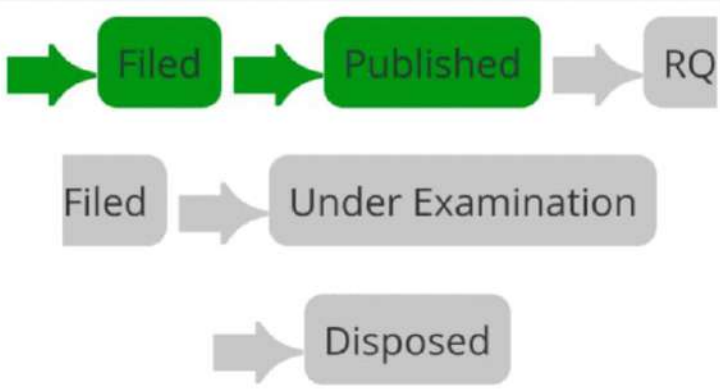

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TITLE OF INVENTION	A SYSTEM AND METHOD FOR ENHANCING CURRICULUM IMPLEMENTATION THROUGH ASSESSMENT FOR LEARNING IN ACCOUNTING EDUCATION
FIELD OF INVENTION	COMPUTER SCIENCE
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Green Literature and Environmental Justice: Eco-Critical Reflections on Nature and Sustainability

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ABSTRACT

Green literature is a literary genre that evolves and explores the complex relationship between humans and the environment, promoting sustainability, conservation justice, and a thoughtful appreciation for environmental interdependence. This article traces the origins and development of green literature—from early pastoral traditions to the rise of eco-criticism in the twentieth century—and examines its thematic focus on portraying nature as a dynamic entity. It critiques anthropocentrism and highlights the role of literature in addressing the social dimensions of climate change and ecological crises. Through diverse forms such as poetry, fiction, non-fiction, and drama, green literature mobilises readers to

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Application Details

APPLICATION NUMBER	202241074164
APPLICATION TYPE	ORDINARY APPLICATION
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TITLE OF INVENTION	IDENTIFICATION AND ASSISTANCE FOR HUMAN EYE THROUGH VOICE-BASED SYSTEM TO HELP AUTISM CHILDREN
FIELD OF INVENTION	BIO-CHEMISTRY
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INTELLECTUAL PROPERTY INDIA

Application Details	
APPLICATION NUMBER	202341014337
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TITLE OF INVENTION	HOLLOWED PENTAGON MODEL PATCH ANTENNA
FIELD OF INVENTION	ELECTRONICS
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(22) Date of filing of Application :27/01/2023

(21) Application No.202341005368 A
(43) Publication Date : 10/02/2023

(54) Title of the invention : PREDICTING AIR QUALITY AND MONITORING MODEL USING MACHINE LEARNING

(51) International classification :G01N0033000000, G06Q0050200000, G08B0021120000, G06N0020000000, B01J0020280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
In order to maintain a high level of air quality in all locations, the framework for observing air quality calculates the levels of various air pollutants. In the context of the position that now, it is the primary concern. The release of potentially harmful gases into the atmosphere by businesses, vehicle exhaust, and other sources is a major contributor to the contamina air. At this point in time, the level of air pollution has reached fundamental levels, and the level of air pollution in many important metropolitan locations has beyond the air quality li that was established by the public authority. It has a tremendous impact on the health of the human. Because of the progress that has been made in the machine learning technology, i possible to forecast the poisons based on the knowledge from the past. We are developing a model that will examine the amount and value of the air quality and then forecasts it for t presence of pollution. In the event that it determines that the surrounding area is polluted, it will transmit an alarm through the notification system, and it will continue to carry out the monitoring procedure.

No. of Pages : 8 No. of Claims : 8

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2023

(21) Application No.202341005390 A
(43) Publication Date : 10/02/2023

(54) Title of the invention : INDOOR IOT HOME AUTOMATION APPLICATIONS WITH VOICE AUTOMATION AND OPERABILITY INTEGRATION

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2024

(21) Application No.202441013203 A
(43) Publication Date : 08/03/2024

(54) Title of the invention : FAKE PROFILES DETECTION IN SOCIAL NETWORKS BY RANDOM FOREST TREE CLASSIFIER ALGORITHM AND NATURAL LANGUAGE PROCESSING (NLP) BASED ON AI AND ML

(51) International classification :G06Q0050000000, G06F0040300000, G06N0020000000, G06K0009620000, G06F0040205000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention relates to the field of cybersecurity and social network analysis, specifically to a system and method for detecting fake profiles on social networks using a combination of Artificial Intelligence (AI) and Machine Learning (ML) techniques. The core of the invention utilizes the Random Forest Tree Classifier Algorithm alongside Natural Language Processing (NLP) to analyze user-generated content and profile features to identify potential fake accounts with high accuracy and efficiency. The method involves collecting data from user profiles, preprocessing this data, extracting relevant features, and then applying the Random Forest algorithm to classify profiles as either authentic or fake. NLP techniques are employed to analyze textual content for inconsistencies, sentiment, and other indicators of authenticity. This approach enhances the detection process by leveraging the strengths of both structured and unstructured data analysis. The system is designed to be adaptable to different social network platforms and scalable to handle large volumes of data. By improving the detection of fake profiles, this invention aims to enhance online security, protect user information, and uphold the integrity of social networks. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 22 No. of Claims : 8

PATENT APPLICATION PUBLICATION

(21) Application No.202441073897 A

(19) INDIA

(22) Date of filing of Application :30/09/2024

(43) Publication Date : 04/10/2024

(54) Title of the invention : ROLE OF RADIO FREQUENCY IDENTIFICATION (RFID) IN WAREHOUSE AND LOGISTICS MANAGEMENT SYSTEM USING MACHINE LEARNING ALGORITHM

(51) International classification	:G06Q0010087000, G06N0020000000, G16H0040200000, G06Q0010080000, G06Q0010083300
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

The present invention relates to an integrated warehouse and logistics management system that employs Radio Frequency Identification (RFID) technology in conjunction with machine learning algorithms to enhance operational efficiency and accuracy. The system utilizes RFID tags and readers to facilitate real-time tracking of inventory items, enabling continuous monitoring of stock levels and movements within the warehouse. By analyzing the data collected through RFID, machine learning algorithms generate predictive insights for inventory management and optimize logistics processes, including dispatch scheduling and route planning. This innovative approach reduces human error, minimizes operational costs, and improves decision-making capabilities, ultimately leading to enhanced productivity and customer satisfaction in supply chain management. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6335760

Grant date: 14 February 2024

Registration date: 26 December 2023

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Dr. Kamlesh Kumar Dubey, Dr. Syed Ali Beer Mohamed, Dr. John Maria Vianny Mercy Geraldine, Dr.Satyajee Srivastava, Purnima Awasthi, Dr. Ravindran Ramkumar

in respect of the application of such design to:

A Computer Game Character

International Design Classification:
Version: 14-2023
Class: 32 GRAPHIC SYMBOLS AND LOGOS, SURFACE PATTERNS, ORNAMENTATION, ARRANGEMENT OF INTERIORS AND EXTERIORS
Subclass: 01 GRAPHIC SYMBOLS AND LOGOS, SURFACE PATTERNS, ORNAMENTATION

Adam Williams

Adam Williams
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

THE PATENT OFFICE OFFICIAL

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2024

(21) Application No.202441028359 A
(43) Publication Date : 12/04/2024

(54) Title of the invention : IOT BASED FULLY AUTOMATED MEDICATION STORAGE AND RETRIEVAL SYSTEM

(51) International classification :G06Q0010080000, G16H0020130000, G16H0080000000, G16H0040200000, G07F0009020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
This invention presents a revolutionary Internet of Things (IoT)-based Fully Automated Medication Storage and Retrieval System designed to streamline the management of pharmaceuticals within healthcare facilities. By integrating advanced IoT technologies, the system offers precise control over the storage, inventory management, and dispensation of medications, ensuring optimal conditions and availability. Key features include automated storage adjustments based on specific medication requirements, real-time inventory tracking, expiration monitoring, and a seamless interface for healthcare professionals. This system aims to significantly reduce medication errors, improve operational efficiency, and enhance patient safety by providing an accurate, timely, and efficient method for managing and dispensing medications. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 23 No. of Claims : 8

Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6351543

Grant date: 09 May 2024

Registration date: 07 March 2024

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

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in respect of the application of such design to:

Traffic Control Barrier

International Design Classification:
Version: 14-2023
Class: 10 CLOCKS AND WATCHES AND OTHER MEASURING INSTRUMENTS, CHECKING AND SIGNALLING INSTRUMENTS
Subclass: 05 INSTRUMENTS, APPARATUS AND DEVICES FOR CHECKING, SECURITY OR TESTING

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THE PATENT OFFICE OFFICIAL

Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6366051

Grant date: 25 July 2024

Registration date: 14 May 2024

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Dr. Pawan Bhambu, Shubham Shukla, Rashima Mahajan, Jayasri

Manickavasagam, Naveen Kolla, Dr. Ravindran Ramkumar

in respect of the application of such design to:

AI based Balance and Posture Training Equipment

International Design Classification:
Version: 14-2023
Class: 24 MEDICAL AND LABORATORY EQUIPMENT
Subclass: 99 MISCELLANEOUS

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THE PATENT OFFICE OFFICIAL

Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6398480

Grant date: 28 October 2024

Registration date: 17 October 2024

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

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Indu, Dr.SathishKumar Saumiya, Mrs. Balakrishnan Anushlin Leena,

Dr.Berakhah Florence Stanley, Dr.Ravindran Ramkumar

in respect of the application of such design to:

AI BASED PLANT EXTRACT ANALYSING DEVICE TO IDENTIFY DISEASED

PLANTS

International Design Classification:
Version: 14-2023
Class: 10 CLOCKS AND WATCHES AND OTHER MEASURING INSTRUMENTS, CHECKING AND SIGNALLING INSTRUMENTS
Subclass: 05 INSTRUMENTS, APPARATUS AND DEVICES FOR CHECKING, SECURITY OR TESTING

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :17/07/2024

(21) Application No.202441054738 A

(43) Publication Date : 02/08/2024

(54) Title of the invention : A MATHEMATICAL MODEL IN GRAPH THEORY FOR BIOLOGICAL CLASSIFICATION

(51) International classification :G16B0040000000, G16B0020000000, G16B0040200000, G16B0005000000, G01N0015100000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention introduces a novel mathematical model utilizing graph theory for the classification of biological entities. Traditional methods of biological classification often face challenges in handling the complexity and volume of biological data. In contrast, the proposed model represents biological entities as nodes and their relationships as edges in a graph structure. Various graph-based algorithms are employed to analyze the graph, facilitating accurate and efficient classification based on biological characteristics. The invention is exemplified by its application in classifying plant species using genetic data, demonstrating its potential to revolutionize biological classification methodologies across diverse domains. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :20/08/2024

(21) Application No.202441062633 A

(43) Publication Date : 23/08/2024

(54) Title of the invention : ARTIFICIAL INTELLIGENCE-BASED FOUR-ARMED ROBOTIC SURGICAL SYSTEM

(51) International classification :A61B0034300000, A61B0017000000, A61B0090000000, A61B0034000000, G06N0020000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an advanced robotic surgical system featuring four articulated arms enhanced with artificial intelligence (AI) for precision and autonomy in minimally invasive procedures. The system includes a mobile base, four versatile robotic arms equipped with specialized surgical tools, and an AI module that processes real-time data to control the arms and assist in decision-making. By integrating machine learning, computer vision, and data analytics, the system improves surgical accuracy, reduces cognitive load on surgeons, and enhances patient safety. The innovative design allows for simultaneous and coordinated manipulation of surgical instruments, and incorporates features such as collision detection, anomaly monitoring, and fail-safes to ensure reliable and effective performance in complex surgeries. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :30/09/2024

(21) Application No.202441073919 A

(43) Publication Date : 04/10/2024

(54) Title of the invention : A SYSTEM AND METHOD FOR ENHANCING CURRICULUM IMPLEMENTATION THROUGH ASSESSMENT FOR LEARNING IN ACCOUNTING EDUCATION

(51) International classification	:G06Q0050200000, G09B0007000000, G09B0007020000, A61B0005000000, G09B0005020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a system and method for enhancing curriculum implementation in accounting education through the integration of Assessment for Learning (AfL) techniques and advanced data analytics. This innovative platform offers educators the ability to create and administer formative assessments aligned with specific learning objectives, enabling continuous monitoring of student performance. With real-time feedback mechanisms and personalized learning pathways, the system fosters deeper student engagement and understanding of accounting principles. Additionally, the learning analytics engine generates actionable insights, allowing educators to tailor their instructional strategies effectively. By promoting an adaptive learning environment, this invention not only improves academic outcomes but also empowers students to take control of their learning journey. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(21) Application No.202441015388 A

(22) Date of filing of Application :01/03/2024

(43) Publication Date : 22/03/2024

(54) Title of the invention : DESIGN OF A WIRELESS CHARGING E-BUNK WITHAN E-TAG PAYMENT MECHANISM

(51) International classification	:G01R0031392000, H02J0007000000, B60L0053630000, B60L0053670000, B60L0053660000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Gasoline and diesel-powered vehicles contribute to pollution, emitting greenhouse gases and harmful pollutants that threaten the planet and contribute to global warming and climate change. EVs powered by rechargeable batteries offer a solution by emitting zero tailpipe emissions, making them environmentally friendly alternatives to traditional vehicles. However, for EVs to realize their full potential in benefiting both individuals and the environment, advanced technologies and infrastructure are required. The integration of RFID systems into EV charging infrastructure represents a significant technological advancement. RFID systems ensure authorized access to charging stations and optimize energy usage, thereby reducing strain on the electrical grid. BMS is a crucial component of EVs, monitoring battery temperature and state of charge to ensure vehicle safety and battery health. It alerts the driver or user in case of critical temperature levels or overcharging, preventing safety hazards and preserving battery lifespan. Ultrasonic sensors ensure optimal alignment of emitter and receiver pads in EV charging infrastructure, enabling real-time adjustments for precise and efficient charging. Thing Speak, an IoT platform, offers real-time monitoring and control of EV charging parameters, enhancing the user experience. It provides insights into charging status, energy consumption, and facilitates direct bill calculations debited from the user's bank account. These innovations not only improve vehicle convenience but also play a crucial role in protecting the environment for future generations, contributing to sustainability efforts.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(21) Application No.202441011222 A
(22) Date of filing of Application :18/02/2024
(43) Publication Date : 08/03/2024

(54) Title of the invention : SMART AGRI BOT FOR MULTI - CROP HARVESTING

(51) International classification :B25J0009160000, G06Q0010060000, A01G0007060000, B25J0011000000, A23B0007154000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT Farmers are unable to find the right kind of labour for their industry. The grocer is unable to classify the diseased fruits and vegetables. We are unable to fully identify contaminated fruits and vegetables in the market. A pick and place robot for agriculture that uses colour sensors is a proposed method where society, time, and manpower are crucial constraints for task completion on the largest scale. In the majority of routine and frequently performed tasks, automation plays a significant role in reducing the need for human labour. In this project, pick and place operations are carried out by a robot. We are building a Pick and Place Robot with a Colour Sensor.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/11/2023

(21) Application No.202331078807 A
(43) Publication Date : 01/12/2023

(54) Title of the invention : Multi-modal Image Fusion Techniques Powered by Transformer-based Machine Learning Models

(51) International classification :G06N0003040000, G06N0003080000, G06T0005500000, G08G0001160000, G06T0003400000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A transformative image processing system and method are disclosed, focused on multi-modal image fusion using transformer-based machine learning models. This invention integrates images from varied modalities such as infrared, visible light, and medical imaging, creating composite images with enhanced clarity, resolution, and informational content. Leveraging the self-attention mechanism of transformer models, it excels in aligning and integrating diverse image types, including those with significant differences in scale, resolution, and spectral characteristics. The system is adept at handling dynamic scenes, offers real-time processing capabilities, and is scalable for various applications. It's particularly applicable in medical diagnostics, surveillance, remote sensing, and autonomous vehicle technology. This invention represents a significant advancement in the field of image processing, offering a novel and efficient solution to the challenges of multi-modal image fusion.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/12/2023

(21) Application No.202341085002 A
(43) Publication Date : 12/01/2024

(54) Title of the invention : SELF-HEALING IOT NETWORK PROTOCOLS FOR INDUSTRIAL AUTOMATION

(51) International classification :G06N0020000000, H04L0067120000, G05B0019418000, H04L0041080600, H04L0041080300
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention relates to Self-Healing IoT Network Protocols for Industrial Automation, presenting a comprehensive system and method for ensuring the continuous, resilient operation of interconnected devices within industrial environments. Leveraging real-time data analysis, machine learning algorithms, and autonomous decision-making, the protocols autonomously detect and resolve network disruptions, thereby minimizing downtime and optimizing network performance. These protocols are adaptable, capable of adjusting to the unique characteristics of different industrial settings, and can predict and preemptively address potential issues. Furthermore, a computer program product and tangible storage medium facilitate easy implementation, monitoring, and configuration of these protocols. Overall, this invention revolutionizes industrial automation, offering significant cost savings and uninterrupted operation while paving the way for the realization of Industry 4.0 objectives.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/04/2024

(21) Application No.202441031984 A
(43) Publication Date : 26/04/2024

(54) Title of the invention : ADAPTIVE INTRUSION PREVENTION SYSTEM USING MACHINE LEARNING AND BEHAVIORAL ANALYSIS FOR COMPREHENSIVE NETWORK SECURITY

(51) International classification	:G06F0021550000, G06N0020000000, G06N0005040000, G06N0007000000, G06F0012140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Adaptive Intrusion Prevention System (AIPS) presented in this patent draft revolutionizes network security by integrating Machine Learning (ML) and Behavioral Analysis (BA) methodologies. Traditional intrusion prevention systems often fall short in detecting sophisticated threats and minimizing false positives. In response, AIPS dynamically adjusts its defense mechanisms based on real-time network behavior, effectively thwarting emerging threats while reducing false alarms. This innovation represents a comprehensive solution for modern network security, continually learning and adapting to evolving cyber threats for enhanced protection.
Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

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Ministry of Commerce & Industry,
Government of India

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INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

Application Details	
APPLICATION NUMBER	202441031984
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	23/04/2024
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TITLE OF INVENTION	ADAPTIVE INTRUSION PREVENTION SYSTEM USING MACHINE LEARNING AND BEHAVIORAL ANALYSIS FOR COMPREHENSIVE NETWORK SECURITY
FIELD OF INVENTION	COMPUTER SCIENCE
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REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	26/04/2024

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Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

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INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

Application Details	
APPLICATION NUMBER	202441073919
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	30/09/2024
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TITLE OF INVENTION	A SYSTEM AND METHOD FOR ENHANCING CURRICULUM IMPLEMENTATION THROUGH ASSESSMENT FOR LEARNING IN ACCOUNTING EDUCATION
FIELD OF INVENTION	COMPUTER SCIENCE
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PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	04/10/2024

Application Status	
APPLICATION STATUS	**Awaiting Request for Examination**

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/11/2023

(21) Application No.202331078807 A
(43) Publication Date : 01/12/2023

(54) Title of the invention : Multi-modal Image Fusion Techniques Powered by Transformer-based Machine Learning Models

(51) International classification :G06N0003040000, G06N0003080000, G06T0005500000, G08G0001160000, G06T0003400000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A transformative image processing system and method are disclosed, focused on multi-modal image fusion using transformer-based machine learning models. This invention integrates images from varied modalities such as infrared, visible light, and medical imaging, creating composite images with enhanced clarity, resolution, and informational content. Leveraging the self-attention mechanism of transformer models, it excels in aligning and integrating diverse image types, including those with significant differences in scale, resolution, and spectral characteristics. The system is adept at handling dynamic scenes, offers real-time processing capabilities, and is scalable for various applications. It's particularly applicable in medical diagnostics, surveillance, remote sensing, and autonomous vehicle technology. This invention represents a significant advancement in the field of image processing, offering a novel and efficient solution to the challenges of multi-modal image fusion.

No. of Pages : 20 No. of Claims : 10

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Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

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Application Details	
APPLICATION NUMBER	202441067615
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	06/09/2024
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TITLE OF INVENTION	INTELLIGENT CYBER SECURITY MONITORING PLATFORM WITH ANOMALY DETECTION CAPABILITIES
FIELD OF INVENTION	COMPUTER SCIENCE
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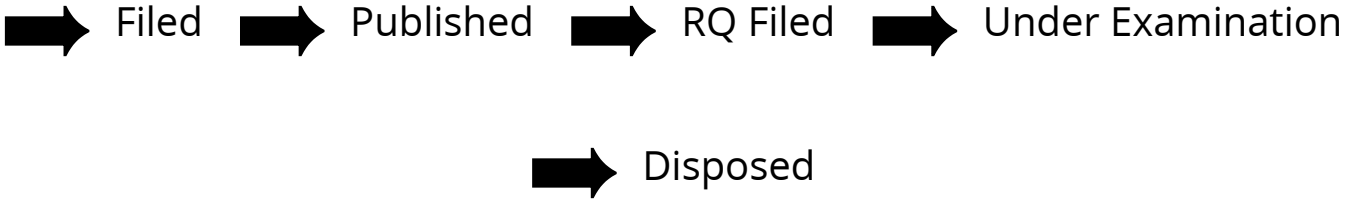
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	13/09/2024

Application Status

APPLICATION STATUS	Awaiting Request for Examination

View Documents



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Application Details	
APPLICATION NUMBER	202441002051
APPLICATION TYPE	ORDINARY APPLICATION
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TITLE OF INVENTION	INTEGRATED MACHINE LEARNING-ASSISTED SYSTEM AND METHOD FOR EFFICIENT IMAGE FILTERING ON FPGA: UNIFYING LINEAR AND MORPHOLOGICAL TYPES FOR ENHANCED IMAGE PROCESSING
FIELD OF INVENTION	ELECTRONICS
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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/11/2023

(21) Application No.202321077169 A

(43) Publication Date : 15/12/2023

(54) Title of the invention : MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE BASED CREDIT CARD FRAUD DETECTION SYSTEM

(51) International classification	:G06Q0020400000, G06N0020000000, G06N0003080000, G06N0003040000, G06Q0020340000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The invention presents a ML and AI based Credit card Fraud Detection System. The present invention comprising of a module for collecting data designed to gather transactional information linked to credit card usage, a machine learning model, trained on historical data, devised to recognize patterns and irregularities suggestive of fraudulent transactions, and a capability for real-time monitoring, facilitating the analysis of incoming transaction data through the trained machine learning model. A module dedicated to fraud detection, set to initiate alerts or preventive measures upon identification of potentially fraudulent activities. Further, the machine learning model employs advanced deep learning techniques, elevating its capacity to discern intricate patterns and variations within credit card transaction data. Also, equipped with an adaptive learning mechanism that regularly updates the machine learning model based on emerging trends and new data patterns in credit card fraud. An interface accessible to users, providing entry to historical and real-time fraud detection reports, enabling users to scrutinize, validate, and adjust the system's parameters. Accompanied Drawing [FIG. 1-2]

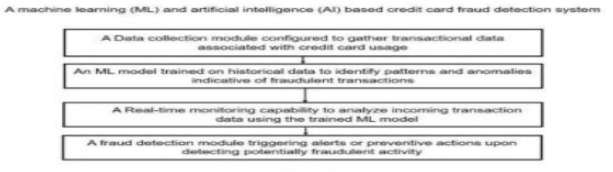

Figure. 1

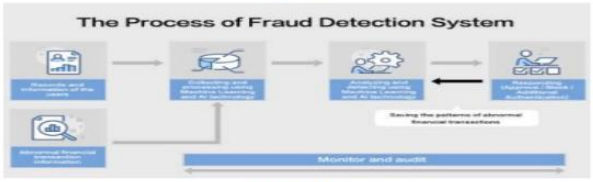

Figure. 2

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2024

(21) Application No.202441013203 A
(43) Publication Date : 08/03/2024

(54) Title of the invention : FAKE PROFILES DETECTION IN SOCIAL NETWORKS BY RANDOM FOREST TREE CLASSIFIER ALGORITHM AND NATURAL LANGUAGE PROCESSING (NLP) BASED ON AI AND ML

(51) International classification	:G06Q0050000000, G06F0040300000, G06N0020000000, G06K0009620000, G06F0040205000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention relates to the field of cybersecurity and social network analysis, specifically to a system and method for detecting fake profiles on social networks using a combination of Artificial Intelligence (AI) and Machine Learning (ML) techniques. The core of the invention utilizes the Random Forest Tree Classifier Algorithm alongside Natural Language Processing (NLP) to analyze user-generated content and profile features to identify potential fake accounts with high accuracy and efficiency. The method involves collecting data from user profiles, preprocessing this data, extracting relevant features, and then applying the Random Forest algorithm to classify profiles as either authentic or fake. NLP techniques are employed to analyze textual content for inconsistencies, sentiment, and other indicators of authenticity. This approach enhances the detection process by leveraging the strengths of both structured and unstructured data analysis. The system is designed to be adaptable to different social network platforms and scalable to handle large volumes of data. By improving the detection of fake profiles, this invention aims to enhance online security, protect user information, and uphold the integrity of social networks. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/07/2024
(21) Application No.202441054738 A
(43) Publication Date : 02/08/2024

(54) Title of the invention : A MATHEMATICAL MODEL IN GRAPH THEORY FOR BIOLOGICAL CLASSIFICATION

(51) International classification :G16B0040000000, G16B0020000000, G16B0040200000, G16B0005000000, G01N0015100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
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(57) Abstract :
The present invention introduces a novel mathematical model utilizing graph theory for the classification of biological entities. Traditional methods of biological classification often face challenges in handling the complexity and volume of biological data. In contrast, the proposed model represents biological entities as nodes and their relationships as edges in a graph structure. Various graph-based algorithms are employed to analyze the graph, facilitating accurate and efficient classification based on biological characteristics. The invention is exemplified by its application in classifying plant species using genetic data, demonstrating its potential to revolutionize biological classification methodologies across diverse domains. Accompanied Drawing [FIGS. 1-2]

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TITLE OF INVENTION	A NOVEL DEEP LEARNING ENABLE ROBOT TO MIMIC EMPLOYEES
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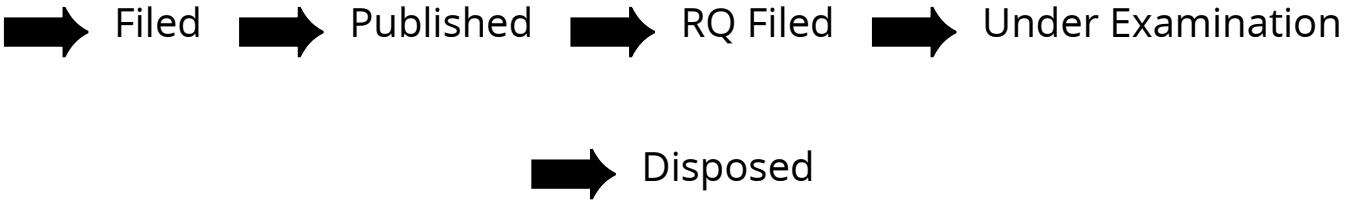

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FORM 2

THE PATENTS ACT, 1970

(39 of 1970)

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COMPLETE SPECIFICATION

(See section 10 and rule 13)

TITLE OF THE INVENTION

"IOT-ENABLED WEARABLE MRI SENSOR SYSTEM FOR EARLY BRAIN STROKE DETECTION AND MONITORING"

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The following specification particularly describes the nature of the invention and the manner in which it is performed:

FIELD OF THE INVENTION

[001] The present invention relates to the field of medical diagnostics, wearable healthcare technology, and advanced imaging systems. More specifically, it pertains to an Internet of Things (IoT)-integrated wearable Magnetic Resonance Imaging (MRI) sensor system designed for early brain stroke detection and continuous monitoring. The invention leverages miniaturized MRI technology, AI-driven data analytics, and real-time connectivity to provide accurate and timely stroke diagnosis. By combining non-invasive brain imaging with IoT capabilities, the system enables remote monitoring, real-time alerts, and predictive analytics to assist healthcare professionals in proactive stroke management. This innovation aims to bridge the gap between traditional hospital-based MRI diagnostics and accessible, real-time stroke monitoring for high-risk individuals.

BACKGROUND OF THE INVENTION

[002] Stroke is one of the leading causes of disability and death worldwide, affecting millions of individuals each year. It occurs when there is an interruption in the blood supply to the brain, either due to a blockage (ischemic stroke) or a ruptured blood vessel (hemorrhagic stroke). The key to reducing stroke-related mortality and long-term complications is rapid diagnosis and intervention. However, conventional stroke diagnosis primarily relies on imaging techniques such as Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) scans, which are often available only in hospital settings. The delay in transporting patients to medical facilities for imaging significantly impacts the effectiveness of treatment, particularly for ischemic strokes where early administration of clot-dissolving drugs can improve outcomes.

[003] Traditional MRI machines are large, expensive, and require dedicated infrastructure, making them inaccessible to a significant portion of the population, especially in remote or underserved areas. Furthermore, MRI scans are typically performed only after a patient exhibits noticeable stroke symptoms, often resulting in delayed intervention. This highlights the need for a portable, wearable solution capable of detecting early stroke indicators before severe symptoms manifest. A real-time monitoring system integrated with advanced analytics could bridge this gap and facilitate early detection, leading to better prognosis and improved patient survival rates.

[004] In recent years, advancements in wearable technology, miniaturized sensors, and the Internet of Things (IoT) have enabled the development of real-time health monitoring systems. Wearable devices such as smartwatches and fitness trackers have demonstrated success in monitoring vital signs like heart rate, oxygen saturation, and electrocardiograms (ECG). However, no existing wearable solution is capable of providing MRI-based brain imaging for stroke detection. A wearable MRI sensor system, combined with IoT connectivity and artificial intelligence (AI)-driven analytics, would enable continuous stroke monitoring and real-time medical intervention, thereby revolutionizing stroke management.

[005] The integration of AI and machine learning (ML) in medical diagnostics has further enhanced the accuracy of detecting neurological conditions. AI algorithms trained on extensive stroke datasets can analyze MRI scans and identify subtle brain abnormalities that may indicate an impending stroke. This level of automation allows for rapid detection, reducing the dependency on radiologists and improving diagnostic efficiency. By implementing such AI-

driven analysis in a wearable MRI device, it becomes possible to provide real-time stroke risk assessment, even in non-clinical environments such as homes, workplaces, or assisted living facilities.

[006] IoT connectivity plays a crucial role in ensuring that real-time brain scan data is accessible to healthcare professionals and caregivers. By transmitting MRI data to cloud-based platforms, remote monitoring systems can be established, allowing neurologists to assess patient conditions in real-time. In cases where stroke biomarkers are detected, automated alerts can be sent to emergency responders and family members, facilitating immediate medical attention. Additionally, long-term monitoring of brain activity could help predict stroke risk and enable preventive healthcare strategies for high-risk individuals.

[007] Another major advantage of a wearable MRI-based stroke detection system is its ability to provide non-invasive and comfortable brain monitoring. Unlike conventional MRI machines that require a patient to remain motionless in a confined space, a wearable device allows for continuous monitoring without disrupting daily activities. This feature is particularly beneficial for elderly individuals and patients with mobility issues who may find it difficult to visit a medical facility for frequent screenings. By making stroke detection more accessible, the technology empowers patients and healthcare providers to adopt a proactive approach to stroke prevention.

[008] Despite these advantages, developing a wearable MRI system presents several technical challenges. Miniaturizing MRI sensors while maintaining high imaging accuracy requires innovative engineering approaches, including the use of advanced materials, optimized coil designs, and high-sensitivity signal

processing techniques. Additionally, efficient data transmission and power management must be addressed to ensure seamless operation in a compact form factor. Overcoming these challenges will be key to realizing a practical, real-world solution that balances performance, usability, and affordability.

[009] In conclusion, the demand for early and accurate stroke detection has never been greater. The proposed IoT-integrated wearable MRI sensor system represents a groundbreaking advancement in stroke diagnostics, offering real-time, portable, and AI-enhanced brain imaging. By combining state-of-the-art MRI miniaturization, IoT connectivity, and AI-powered analytics, this invention has the potential to transform stroke management, reduce fatalities, and improve healthcare accessibility for patients worldwide.

SUMMARY OF THE INVENTION

[010] The present invention provides an **IoT-enabled wearable MRI sensor system** designed for **early detection and continuous monitoring of brain strokes**. This innovative device integrates **miniaturized MRI technology, artificial intelligence (AI)-based analytics, and real-time IoT connectivity** to offer a portable and non-invasive solution for stroke diagnosis. Unlike conventional MRI machines that require large, stationary equipment, this wearable device can be comfortably worn on the head, allowing for continuous brain monitoring without disrupting the user's daily activities. The system is designed to detect abnormalities in brain activity, blood flow, and tissue integrity, which are critical indicators of an impending or ongoing stroke.

[011] The invention comprises a **wearable headgear embedded with compact MRI sensors**, high-sensitivity radiofrequency (RF) coils, and

advanced signal processing units. These sensors capture high-resolution brain imaging data and detect anomalies in cerebral blood flow and tissue structure. The collected data is processed in real time using **AI-driven algorithms** that analyze brain activity patterns and identify early stroke biomarkers. The AI model is trained on extensive datasets of stroke patients to ensure high accuracy in detecting ischemic and hemorrhagic strokes at an early stage.

[012] One of the key features of this system is its **IoT connectivity**, which enables seamless data transmission to cloud-based platforms. The device is equipped with wireless communication modules such as **Wi-Fi, Bluetooth, or 5G**, allowing healthcare professionals and caregivers to remotely access brain scan data in real time. In the event of stroke indicators being detected, **automated alerts and emergency notifications** are sent to the patient's healthcare provider, family members, and emergency response teams, ensuring immediate medical intervention. This real-time monitoring capability significantly reduces the delay between stroke onset and treatment, which is crucial in preventing severe brain damage and improving patient outcomes.

[013] Additionally, the invention includes **a mobile application and a web-based dashboard** that allow users and healthcare professionals to monitor brain health trends, review past MRI scans, and receive predictive insights. The system's AI algorithms continuously learn from user-specific data, enabling personalized risk assessment and early warning notifications for high-risk individuals. The integration of **machine learning (ML) techniques** enhances the accuracy and reliability of stroke detection, making the device a valuable tool for both preventive and emergency stroke management.

[014] To ensure user comfort and prolonged usage, the wearable device is designed with **lightweight materials, ergonomic fitting, and efficient power management**. A rechargeable battery system with **energy-efficient MRI signal processing** ensures long-lasting operation without frequent recharging. The device is also designed to be **non-invasive and easy to wear**, making it particularly suitable for elderly individuals, stroke survivors, and patients with mobility constraints.

[015] The **IoT-enabled wearable MRI sensor system** revolutionizes stroke detection by making **advanced brain imaging accessible, portable, and real-time**. By bridging the gap between traditional hospital-based MRI diagnostics and continuous at-home stroke monitoring, this invention has the potential to **reduce stroke-related fatalities, improve early diagnosis, and enhance personalized healthcare strategies**.

BRIEF DESCRIPTION OF THE DRAWINGS

[016] The accompanying figures included herein, and which form parts of the present invention, illustrate embodiments of the present invention, and work together with the present invention to illustrate the principles of the invention Figures:

[017] Figure 1, illustrates the overall system architecture of the IoT-enabled wearable MRI sensor system for brain stroke detection.

[018] Figure 2, illustrates a step-by-step flowchart depicting the stroke detection and alert mechanism.

DETAILED DESCRIPTION OF THE INVENTION

[019] The present invention relates to an **IoT-enabled wearable MRI sensor system** for **early detection, real-time monitoring, and predictive analysis of brain strokes**. The system is designed to provide **continuous, non-invasive brain imaging** in a compact, wearable form factor, ensuring early stroke detection and timely medical intervention. The invention integrates **miniaturized MRI technology, AI-driven analytics, and cloud-based remote monitoring** to enable an advanced healthcare solution for individuals at risk of stroke.

[020**] Wearable MRI Sensor System Design**

The core component of the system is a **wearable headgear embedded with miniaturized MRI sensors and radiofrequency (RF) coils**. These MRI sensors are optimized for low-power operation and high sensitivity to capture detailed brain imaging data. The **RF coils** are designed to generate and receive electromagnetic signals that interact with brain tissues, enabling high-resolution imaging. Unlike conventional MRI machines, which use large and powerful magnetic fields, the wearable MRI device employs **low-field MRI techniques** that require less energy while still providing sufficient imaging resolution for stroke detection.

The headgear is ergonomically designed using **lightweight, flexible materials** to ensure comfort and long-duration wearability. It features **adjustable straps** to accommodate different head sizes and shapes, making it suitable for a diverse range of users. The system also includes **a rechargeable battery module with energy-efficient power management**, ensuring continuous operation without frequent recharging.

[021] MRI Data Acquisition and Preprocessing

Once the wearable MRI system is activated, the sensors continuously scan the brain, capturing detailed imaging data. The collected data undergoes an **initial preprocessing stage**, which includes **noise reduction, signal enhancement, and artifact removal** to improve image clarity. The preprocessing module utilizes **advanced signal processing algorithms** to refine raw MRI signals, ensuring that the data fed into the AI-based analysis module is of the highest quality.

[022] AI-Based Stroke Detection and Classification

The **AI-driven diagnostic module** is one of the key innovations in this system. It utilizes **machine learning (ML) and deep learning (DL) algorithms** trained on large datasets of MRI scans, including both healthy and stroke-affected brain images. The AI model analyzes the preprocessed MRI data to detect **stroke biomarkers**, such as:

- **Abnormal blood flow patterns**
- **Brain tissue ischemia (restricted blood supply)**
- **Hemorrhagic anomalies (internal bleeding)**
- **Irregular brain activity indicative of stroke onset**

Using **pattern recognition and predictive analytics**, the AI module classifies the detected abnormalities into either **ischemic stroke (caused by blood clots)** or **hemorrhagic stroke (caused by ruptured blood vessels)**. This classification is crucial in guiding appropriate medical response and treatment strategies.

[023] IoT-Enabled Real-Time Data Transmission

To enable remote monitoring, the wearable MRI system is equipped with **IoT communication modules**, including **Wi-Fi, Bluetooth, and 5G connectivity**. Once the AI-based analysis is completed, the processed data is transmitted securely to a **cloud-based healthcare platform**. The cloud infrastructure provides **real-time access to brain scan results**, allowing healthcare professionals and caregivers to monitor patients remotely.

If a potential stroke event is detected, the system immediately triggers an **automated alert mechanism**. Notifications are sent to:

- **The patient via the mobile application**
- **Healthcare professionals through a web-based dashboard**
- **Emergency contacts, including family members and caregivers**
- **Ambulance services for immediate medical intervention**

[024] Mobile Application and Web-Based Dashboard

The system includes a **mobile application and a cloud-based web dashboard** for data visualization and real-time monitoring. Users can access:

- **Live brain scan results**
- **Historical MRI scan data for trend analysis**
- **Personalized stroke risk assessments**
- **Emergency alert notifications and response actions**

The AI-powered **predictive analytics module** continuously assesses stroke risk based on historical data, lifestyle factors, and real-time MRI scans. If the

system detects increasing stroke risk over time, it proactively warns the user and healthcare provider, allowing for **preventive medical intervention**.

[025] Power Management and Energy Efficiency

The wearable MRI sensor system is designed with an **energy-efficient power management unit**, ensuring optimal battery usage without compromising imaging performance. The system employs:

- **Low-field MRI technology** to reduce power consumption
- **Sleep mode functionality** when not actively scanning
- **Wireless charging support** for user convenience

A single full charge allows for extended operation, enabling continuous stroke monitoring for prolonged periods.

[026] Advantages of the IoT-Enabled Wearable MRI Sensor System

The proposed invention offers several advantages over conventional stroke detection methods:

1. **Early Stroke Detection** – Continuous monitoring ensures that early warning signs of stroke are detected before severe symptoms manifest.
2. **Non-Invasive and Comfortable** – The wearable design eliminates the need for traditional MRI scans that require hospital visits and immobility inside bulky machines.
3. **AI-Driven Precision** – Machine learning algorithms enhance detection accuracy, reducing false positives and false negatives.

4. **Real-Time Alerts and Remote Monitoring** – IoT connectivity enables timely notifications and remote healthcare access.
5. **Personalized Stroke Risk Analysis** – Long-term data tracking provides predictive insights for high-risk individuals.
6. **Improved Accessibility** – Portable and affordable MRI technology expands stroke monitoring capabilities to remote and underserved areas.

[027] Applications of the Invention

The wearable MRI sensor system is designed for a wide range of applications, including:

- **Stroke Prevention in High-Risk Individuals** – People with hypertension, diabetes, or a history of strokes can benefit from continuous monitoring.
- **Elderly and Assisted Living Care** – Helps caregivers track brain health in elderly individuals.
- **Emergency Response Systems** – Enables faster detection and response to stroke emergencies in real-world settings.
- **Neurological Research and Clinical Trials** – Provides real-time data for studying stroke patterns and treatment efficacy.

[028] The **IoT-enabled wearable MRI sensor system** for **brain stroke detection** presents a groundbreaking advancement in **non-invasive neurological monitoring and early stroke diagnosis**. By integrating **miniaturized MRI technology, AI-driven analytics, and real-time IoT**

connectivity, the system ensures **continuous brain imaging, early anomaly detection, and rapid emergency alerts**, thereby significantly reducing the time between stroke onset and medical intervention. Unlike conventional MRI machines, which are expensive, stationary, and inaccessible in emergency situations, this wearable solution provides a **portable, cost-effective, and real-time monitoring alternative**, enhancing stroke management and prevention.

[029] Looking ahead, **future advancements** in this technology will focus on improving **sensor resolution, AI accuracy, and energy efficiency** to further enhance stroke detection capabilities. The incorporation of **5G and edge computing** will enable faster data processing and seamless real-time diagnostics, even in remote areas. Additionally, integrating **biometric and physiological sensors** such as blood pressure, heart rate, and oxygen saturation monitoring will provide a **comprehensive health assessment** for stroke prediction. Further research into **adaptive AI models** will allow the system to learn from individual patient data, refining detection accuracy and personalizing stroke risk predictions.

[030] In conclusion, this invention not only serves as a **life-saving tool for individuals at risk of stroke** but also has the potential to **revolutionize neurological diagnostics and telemedicine**. By making **real-time stroke monitoring accessible and proactive**, the proposed system paves the way for **improved healthcare outcomes, reduced stroke-related disabilities, and enhanced quality of life** for millions globally. The continuous evolution of **wearable AI-driven healthcare devices** will redefine the future of medical diagnostics, bridging the gap between technology and preventive healthcare.

We Claim:

1. A wearable MRI-based stroke detection system comprising a head-mounted apparatus embedded with miniaturized MRI sensors and radiofrequency (RF) coils, configured to capture real-time brain imaging data for stroke detection and monitoring.
2. The system of claim 1, wherein the MRI sensors utilize low-field magnetic resonance imaging technology to reduce power consumption while maintaining high-resolution imaging of brain tissue abnormalities.
3. The system of claim 1, further comprising an AI-driven diagnostic module that applies machine learning algorithms to analyze MRI data, identifying stroke biomarkers such as ischemic regions, abnormal blood flow, and hemorrhagic anomalies.
4. The system of claim 1, wherein the wearable device is integrated with IoT communication modules, including Wi-Fi, Bluetooth, and 5G connectivity, enabling real-time transmission of processed MRI data to cloud-based healthcare platforms.
5. The system of claim 1, further comprising a mobile application and web-based dashboard that provide users and healthcare professionals with live imaging data, historical scan records, and predictive stroke risk assessments based on continuous monitoring.
6. The system of claim 1, wherein an automated emergency alert mechanism is triggered upon detection of a stroke event, notifying the patient, caregivers, healthcare professionals, and emergency services for immediate medical intervention.

7. The system of claim 1, further comprising an adaptive power management module that optimizes energy consumption through low-power MRI scanning, sleep mode activation, and wireless charging capabilities for extended battery life.
8. The system of claim 1, wherein AI-driven predictive analytics continuously assess stroke risk factors based on MRI data, patient history, and real-time physiological parameters, providing proactive health alerts to prevent potential stroke events.
9. The system of claim 1, further configured to integrate additional biometric sensors, including blood pressure, heart rate, and oxygen saturation sensors, to provide a comprehensive neurological health assessment in conjunction with MRI-based stroke detection.
10. The system of claim 1, wherein an edge computing module processes MRI data locally within the wearable device, reducing data transmission latency and enabling faster, real-time stroke diagnostics without reliance on external cloud computing resources.

Dated this 08th day of March 2025

Applicant(s)

M. Jayasri et. al.

ABSTRACT

IOT-ENABLED WEARABLE MRI SENSOR SYSTEM FOR EARLY BRAIN STROKE DETECTION AND MONITORING

[031] The present invention relates to an IoT-enabled wearable MRI sensor system for real-time brain stroke detection and monitoring. The system comprises a head-mounted device embedded with miniaturized MRI sensors, AI-driven diagnostic algorithms, and IoT connectivity, enabling continuous brain imaging and early anomaly detection. The AI-powered analytics module processes MRI data to identify ischemic and hemorrhagic stroke indicators, while an integrated emergency alert system notifies healthcare providers and caregivers upon detection of critical conditions. The device is further equipped with biometric sensors, edge computing capabilities, and a mobile application, ensuring real-time monitoring, predictive analytics, and remote medical intervention. This innovation provides a portable, cost-effective, and efficient alternative to conventional MRI machines, enhancing stroke management, early detection, and personalized neurological healthcare.

Accompanied Drawing **[FIGS. 1-2]**

Dated this 08th day of March 2025

Applicant(s)

M. Jayasri et. al.

ORIGINAL

मूल/No : 135227

सत्यमेव जयते

भारत सरकार
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डिजाइन के पंजीकरण का प्रमाणपत्र
CERTIFICATE OF REGISTRATION OF DESIGN

डिजाइन सं. / Design No.	:	378618-001
तारीख / Date	:	03/02/2023
पारस्परिकता तारीख / Reciprocity Date*	:	
देश / Country	:	

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **SOLAR PANEL CLEANING ROBOT** से संबंधित है, का पंजीकरण, श्रेणी **15-05** में 1.C.B.Priya 2. Dr.K.Ramkumar 3.R. Satheesh Kumar 4.Pio Casmir D के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class **15-05** in respect of the application of such design to **SOLAR PANEL CLEANING ROBOT** in the name of 1.C.B.Priya 2. Dr.K.Ramkumar 3.R. Satheesh Kumar 4.Pio Casmir D.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

निर्गमन की तारीख/Date of Issue : 15/05/2023

महानियंत्रक पेटेंट डिजाइन और व्यापार चिह्न
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Registered design
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No

Design
A Computer Game Character

Additional description
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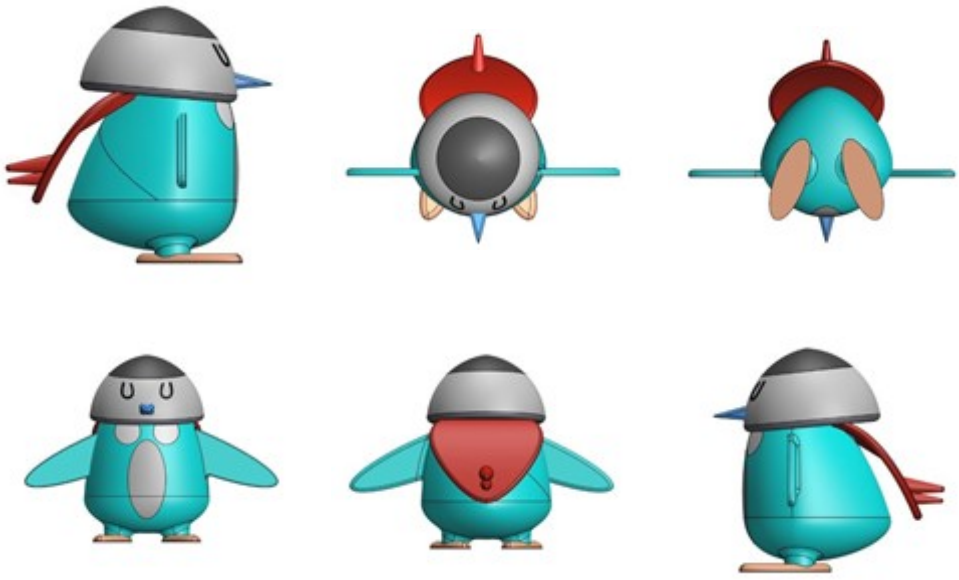
No claim is made for the colour shown

Illustrations



Repeated surface pattern

No

Priority claims

None

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APPLICATION TYPE	ORDINARY APPLICATION
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TITLE OF INVENTION	UNIVERSAL FIXED POINT FINDER: A SYSTEM FOR ANALYZING FIXED POINT THEOREMS FOR GENERALIZED CONTRACTIVE MAPS ACROSS VARIOUS METRIC SPACES
FIELD OF INVENTION	MECHANICAL ENGINEERING
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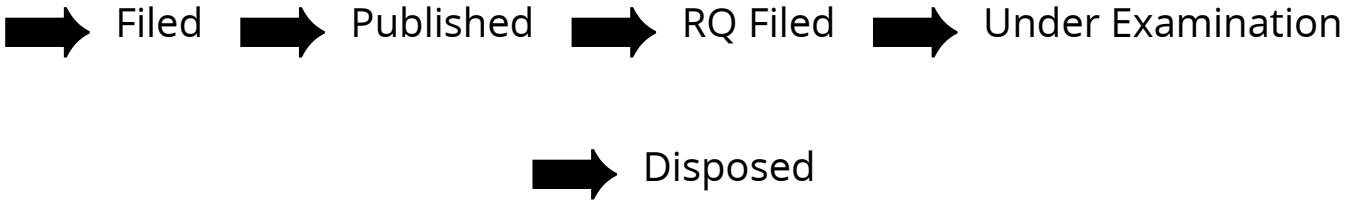
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	29/03/2024

Application Status

APPLICATION STATUS	Awaiting Request for Examination

View Documents



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(12) PATENT APPLICATION PUBLICATION
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(22) Date of filing of Application :05/09/2023

(21) Application No.202341059730 A
(43) Publication Date : 06/10/2023

(54) Title of the invention : STRUCTURAL AND OPTICAL PROPERTIES ANALYSIS OF CHEMICAL BATH DEPOSITION

(51) International classification :H01L0021660000, C23C0018120000, G01N0021170000, H01L0031180000, H01L0031039200
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Nickel doped zinc sulfide (Ni:ZnS) thin films are deposited on glass substrates by chemical bath deposition (CBD) for different Ni concentrations (0, 6, 12 and 18 at%). X-ray diffraction (XRD) patterns of undoped and Ni doped layers show a cubic structure with (111) preferred orientation. For the highest Ni concentration an impurity phase is detected and assigned to NiS compound. Fourier transform infrared (FTIR) analysis proves the existence of some residues in the films. X-ray photoelectron spectroscopy (XPS) reveals the formation of ZnS. The morphological study by scanning electron microscopy (SEM) shows important changes in layers topography. Transmittance (T) and reflectance (R) data reveal an enhancement for 6 at% and 12 at% dopant concentrations. Finally, photoluminescence (PL) properties show a decrease of the emission intensity with an increment of Ni content until 12 at%. Then, an increase of the PL intensity is observed with further increase of Ni amount.

No. of Pages : 15 No. of Claims : 5

Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6391235

Grant date: 23 September 2024

Registration date: 15 September 2024

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

DHANALAKSHMI SRINIVASAN UNIVERSITY , Dr VASANTHI VENKIDUSAMY,

Dr. KARTHIKA KRISHNAN, Dr. RAFI AHAMED SHEIK IBRAHIM, Dr. RAJA

ANNAMALAI GANESAN, Dr. LOYOLA POUL RAJ INNACI, Dr. ARCHANA

VENKATACHALAM

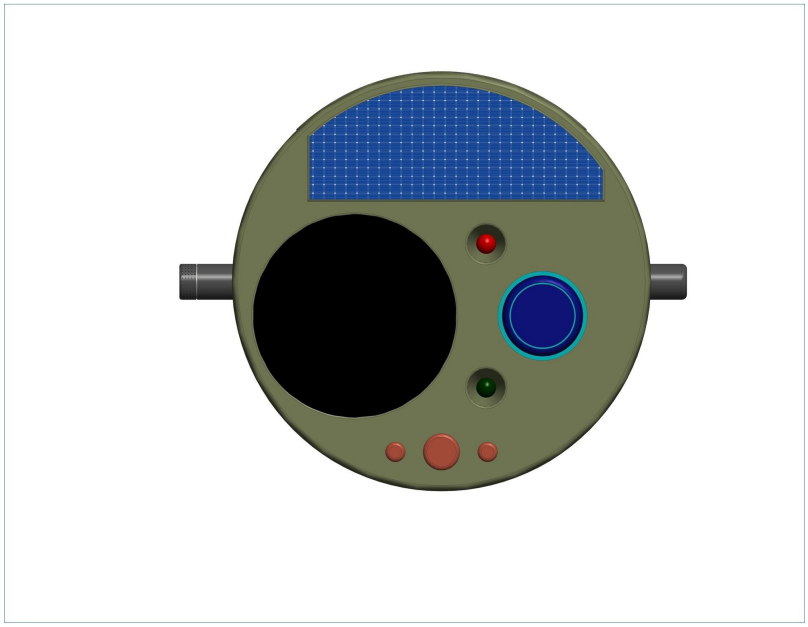
in respect of the application of such design to:

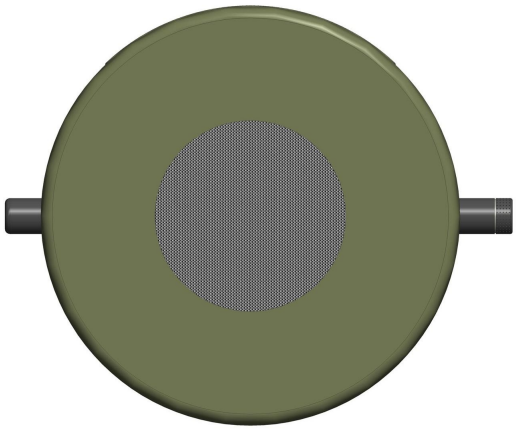
Ultraviolet Based Air Quality Monitoring Device

International Design Classification:
Version: 14-2023
Class: 10 CLOCKS AND WATCHES AND OTHER MEASURING INSTRUMENTS, CHECKING AND SIGNALLING INSTRUMENTS
Subclass: 04 OTHER MEASURING INSTRUMENTS, APPARATUS AND DEVICES

Adam Williams
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

Representation of Designs





Intellectual Property Office

Registered design
[UNCERTIFIED COPY]

Design details

Design application number
6391235

Filing date (provisional)
15 September 2024

Defer registration
No

Design
Ultraviolet Based Air Quality Monitoring Device

Additional description
The Ultraviolet-Based Air Quality Monitoring Device uses UV sensors to detect pollutants like NO2, SO2, and O3, providing real-time air quality data, ensuring accurate measurement for indoor and outdoor environments.

Illustration disclaimer
None

Illustrations






Repeated surface pattern

No

Priority claims

None

Owner details

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Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6391235

Grant date: 23 September 2024

Registration date: 15 September 2024

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DHANALAKSHMI SRINIVASAN UNIVERSITY , Dr VASANTHI VENKIDUSAMY,

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VENKATACHALAM

in respect of the application of such design to:

Ultraviolet Based Air Quality Monitoring Device

International Design Classification:
Version: 14-2023
Class: 10 CLOCKS AND WATCHES AND OTHER MEASURING INSTRUMENTS, CHECKING AND SIGNALLING INSTRUMENTS
Subclass: 04 OTHER MEASURING INSTRUMENTS, APPARATUS AND DEVICES

Adam Williams
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

Office of the Controller General of Patents, Designs & Trade Mark
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

सत्यमेव जयते

Application Details

APPLICATION NUMBER	202441051506
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	05/07/2024
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TITLE OF INVENTION	DEVELOPMENT OF FABRICATION AND CHARCATERIZATION OF SAW DUST POLYMER COMPOSITE FOR MECHANICAL APPLICATIONS
FIELD OF INVENTION	POLYMER TECHNOLOGY
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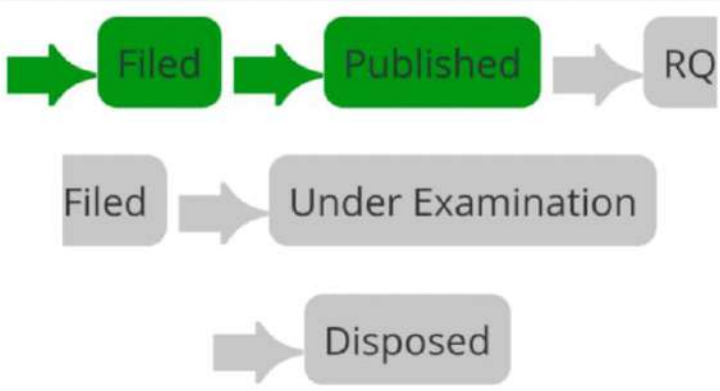

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TITLE OF INVENTION	SYSTEM AND METHOD FOR ENHANCING BUSINESS COMMUNICATION THROUGH ADVANCED ENGLISH LANGUAGE PROCESSING
FIELD OF INVENTION	MECHANICAL ENGINEERING
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APPLICATION NUMBER	202441073919
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	30/09/2024
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TITLE OF INVENTION	A SYSTEM AND METHOD FOR ENHANCING CURRICULUM IMPLEMENTATION THROUGH ASSESSMENT FOR LEARNING IN ACCOUNTING EDUCATION
FIELD OF INVENTION	COMPUTER SCIENCE
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Green Literature and Environmental Justice: Eco-Critical Reflections on Nature and Sustainability

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ABSTRACT

Green literature is a literary genre that evolves and explores the complex relationship between humans and the environment, promoting sustainability, conservation justice, and a thoughtful appreciation for environmental interdependence. This article traces the origins and development of green literature—from early pastoral traditions to the rise of eco-criticism in the twentieth century—and examines its thematic focus on portraying nature as a dynamic entity. It critiques anthropocentrism and highlights the role of literature in addressing the social dimensions of climate change and ecological crises. Through diverse forms such as poetry, fiction, non-fiction, and drama, green literature mobilises readers to

Office of the Controller General of Patents, Designs & Trade Marks
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Ministry of Commerce & Industry
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INTELLECTUAL PROPERTY INDIA

Application Details

APPLICATION NUMBER	202241074164
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	21/12/2022
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TITLE OF INVENTION	IDENTIFICATION AND ASSISTANCE FOR HUMAN EYE THROUGH VOICE-BASED SYSTEM TO HELP AUTISM CHILDREN
FIELD OF INVENTION	BIO-CHEMISTRY
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Office of the Controller General of Patents, Designs & Trade Marks
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INTELLECTUAL PROPERTY INDIA

Application Details	
APPLICATION NUMBER	202341014337
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	03/03/2023
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TITLE OF INVENTION	HOLLOWED PENTAGON MODEL PATCH ANTENNA
FIELD OF INVENTION	ELECTRONICS
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PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
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APPLICATION STATUS	Awaiting Request for Examination

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(43) Publication Date : 10/02/2023

(54) Title of the invention : PREDICTING AIR QUALITY AND MONITORING MODEL USING MACHINE LEARNING

(51) International classification :G01N0033000000, G06Q0050200000, G08B0021120000, G06N0020000000, B01J0020280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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Filing Date :NA

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(57) Abstract :
In order to maintain a high level of air quality in all locations, the framework for observing air quality calculates the levels of various air pollutants. In the context of the position that now, it is the primary concern. The release of potentially harmful gases into the atmosphere by businesses, vehicle exhaust, and other sources is a major contributor to the contamina air. At this point in time, the level of air pollution has reached fundamental levels, and the level of air pollution in many important metropolitan locations has beyond the air quality li that was established by the public authority. It has a tremendous impact on the health of the human. Because of the progress that has been made in the machine learning technology, i possible to forecast the poisons based on the knowledge from the past. We are developing a model that will examine the amount and value of the air quality and then forecasts it for t presence of pollution. In the event that it determines that the surrounding area is polluted, it will transmit an alarm through the notification system, and it will continue to carry out the monitoring procedure.

No. of Pages : 8 No. of Claims : 8

The Patent Office Journal No. 06/2023 Dated 10/02/2023

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(19) INDIA
(22) Date of filing of Application :27/01/2023

(21) Application No.202341005390 A
(43) Publication Date : 10/02/2023

(54) Title of the invention : INDOOR IOT HOME AUTOMATION APPLICATIONS WITH VOICE AUTOMATION AND OPERABILITY INTEGRATION

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