

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202211052282 A

(19) INDIA

(22) Date of filing of Application :13/09/2022

(43) Publication Date : 16/09/2022

(54) Title of the invention : MACHINE LEARNING-BASED METHODOLOGY FOR DATABASE MIGRATION IN CLOUD COMPUTING ENVIRONMENT

<p>(51) International classification : G06F0016210000, H04L0029080000, H04L0012240000, G06F0009500000, H04L0012910000</p> <p>(86) International Application No : NA Filing Date : NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number : NA Filing Date : NA</p> <p>(62) Divisional to Application Number : NA Filing Date : NA</p>	<p>(71)Name of Applicant : 1)Jitendra Kurmi Address of Applicant :Research scholar, Department of Computer science, University of Lucknow, Lucknow, Uttar Pradesh, India - 226007 .....</p> <p>2)Dr. Dilip Kumar Sharma 3)M. K. Sharma 4)Dr. Ajendra Sharma 5)Dr. Sanjeev Kumar 6)Nitesh Dhiman 7)Dr. Omkar Suresh Vaidya 8)Dr. Ruchi Gupta 9)Dr. Subha Ran Palamuri 10)Ankit Parwal 11)Priyanka Sharma 12)Ajay Bhardwaj</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Jitendra Kurmi Address of Applicant :Research scholar, Department of Computer science, University of Lucknow, Lucknow, Uttar Pradesh, India - 226007 .....</p> <p>2)Dr. Dilip Kumar Sharma Address of Applicant :Department of Mathematics, Jaypee University of Engineering and Technology, Guna (M.P.), India .....</p> <p>3)M. K. Sharma Address of Applicant :Professor, Department of Mathematics, Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India - 250004 .....</p> <p>4)Dr. Ajendra Sharma Address of Applicant :Department of Mathematics, N.A.S. (P.G.) College, Meerut, U.P., India - 250004 .....</p> <p>5)Dr. Sanjeev Kumar Address of Applicant :Associate Professor, Department of Economics, Chaudhary Charan Singh University, Meerut, U.P., India .....</p> <p>6)Nitesh Dhiman Address of Applicant :Department of Mathematics, Ch. Charan Singh University, Meerut (U.P.), India - 250004 .....</p> <p>7)Dr. Omkar Suresh Vaidya Address of Applicant :Associate Professor, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune, Maharashtra, India .....</p> <p>8)Dr. Ruchi Gupta Address of Applicant :Associate Professor, Department of Information Technology, Ajay Kumar Garg Engineering College Ghaziabad, Abdul Kalam Technical University, Lucknow Uttar Pradesh, India .....</p> <p>9)Dr. Subha Ran Palamuri Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Kaknada Institute of Engineering Technology, Korangi, Kakinada Dt. Andhra Pradesh, India .....</p> <p>10)Ankit Parwal Address of Applicant :Assistant Professor, Department of Computer Science &amp; Engineering, School of Engineering &amp; Technology Sangam University, Bhilwara, Rajasthan, India .....</p> <p>11)Priyanka Sharma Address of Applicant :Assistant Professor, Department of CSI, SKIT College, Jaipur, Rajasthan, India .....</p> <p>12)Ajay Bhardwaj Address of Applicant :Assistant Professor, Department of Electrical Engineering, SKIT College, Jaipur, Rajasthan, India .....</p>
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(57) Abstract :  
The present invention discloses a system based on machine learning for database migration in a cloud computing environment and the method thereof. The method and system include, but are not limited to, a processing unit coupled with a memory unit for further having a plurality of database migration modules in a cloud network and a computation server provided in a cloud network for configuring and determining a weight function for each of a plurality of hosts connected in a cloud network with dependence on the current resource utilization in database storage and management system and further, predicted resource utilization and cause allocation of a cloud computing resource in dependence on the determined weight function.

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



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PATENT DESIGN TRADE MARKS  
REGISTRATION OFFICE

(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202211052282
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	13/09/2022
APPLICANT NAME	1 . Jitendra Kurmi 2 . Dr. Dilip Kumar Sharma 3 . M. K. Sharma 4 . Dr. Ajendra Sharma 5 . Dr. Sanjeev Kumar 6 . Nitesh Dhiman 7 . Dr. Omkar Suresh Vaidya 8 . Dr. Ruchi Gupta 9 . Dr. Subba Rao Polamuri 10 . Ankit Porwal 11 . Priyanka Sharma 12 . Ajay Bhardwaj
TITLE OF INVENTION	MACHINE LEARNING-BASED METHODOLOGY FOR DATABASE MIGRATION IN CLOUD COMPUTING ENVIRONMENT
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	thilaksayila@gmail.com
ADDITIONAL-EMAIL (As Per Record)	thilaksayila@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	16/09/2022

#### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

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➡ Filed ➡ Published ➡ RQ Filed ➡ Under Examination ➡ Disposed

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### Application Details

APPLICATION NUMBER	202241051840
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	11/09/2022
APPLICANT NAME	1 . Dr. N. Kumaratharan 2 . Dr. Parimala Prabhakar 3 . Dr. Shubhi Jain 4 . Dr. Dheeraj Bhardwaj 5 . Dr. Komal Sharma 6 . Dr. Monika Mathur 7 . Jay Kumar Pandey 8 . Dr. M. Poonguzhali 9 . Dr. Prabha Shreeraj Nair 10 . Ms. Prathibha Sudhakaran
TITLE OF INVENTION	Novel 5G communication microstrip patch antenna for broadcasting and navigation application
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	mail2patentipr@gmail.com
ADDITIONAL-EMAIL (As Per Record)	mail2patentipr@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	16/09/2022

### Application Status

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202221069895 A

(19) INDIA

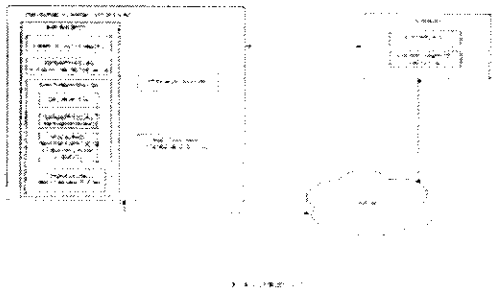
(22) Date of filing of Application :04/12/2022

(43) Publication Date : 30/12/2022

(54) Title of the invention : SYSTEM TO ASSESS AND IDENTIFY THE CASUALTY OF THE WOUND TISSUE USING ARTIFICIAL INTELLIGENCE

<p>(51) International classification : A61B0005000900, G06N0020000090, A61P0017020000, G06T0007000000, G06F0007110000</p> <p>(86) International Application No : NA Filing Date : NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number : NA Filing Date : NA</p> <p>(62) Divisional to Application Number : NA Filing Date : NA</p>	<p>(71) Name of Applicant :  <b>1)Smit Kumar Ray</b>  Address of Applicant :MIG-66, Sector 7, Shankar Nagar, Raipur Chhattisgarh 492001 .....</p> <p><b>2)Dr. Harendra Kumar Lautre</b>  <b>3)Dr. Prakash Tanaji Wankhedkar</b>  <b>4)Dr. Kiranpal Singh Virk</b>  <b>5)Dr. Ramakrishnan Ramani</b>  <b>6)Mrs.Kanchan Sudhir Gorde</b>  <b>7)R.Meenakshi</b>  <b>8)Dr. Pankaj Dadhrech</b>  <b>9)Dr. Pallab Kalita</b>  <b>10)Ruhul Amin</b></p> <p>Name of Applicant : NA  Address of Applicant : NA</p> <p>(72) Name of Inventor :  <b>1)Smit Kumar Ray</b>  Address of Applicant :MIG-66, Sector-2, Shankar Nagar, Raipur Chhattisgarh 492001 .....</p> <p><b>2)Dr. Harendra Kumar Lautre</b>  Address of Applicant :BYOS SCIENTIFIC LAB, Mova, Raipur Chhattisgarh 492007 .....</p> <p><b>3)Dr. Prakash Tanaji Wankhedkar</b>  Address of Applicant :Assistant Professor, Department of Zoology, M.J.M. ACS College, Karamnah, Tal. Peth, Dist. Nashik-422208 .....</p> <p><b>4)Dr. Kiranpal Singh Virk</b>  Address of Applicant :Assistant Professor, Department of Computer Science, Guru Nanak Khalsa College, Yamuna Nagar, Haryana .....</p> <p><b>5)Dr. Ramakrishnan Ramani</b>  Address of Applicant :Professor and Director, Symbiosis Institute of Business Management and Symbiosis International (Deemed University), Pune, Maharashtra, India .....</p> <p><b>6)Mrs.Kanchan Sudhir Gorde</b>  Address of Applicant :Assistant Professor Department of Electronics Engineering Terna Engineering College Neral, Navi Mumbai-400708 .....</p> <p><b>7)R.Meenakshi</b>  Address of Applicant :Professor, Department of CSE, Chennai Institute of Technology .....</p> <p><b>8)Dr. Pankaj Dadhrech</b>  Address of Applicant :Associate Professor, Department of Computer Science &amp; Engineering (NBA Accredited), Swami Keshvanand Institute of Technology, Management &amp; Gramothan (SKIT), Jajpur, Rajasthan-307017, India .....</p> <p><b>9)Dr. Pallab Kalita</b>  Address of Applicant :Principal cum Associate Professor School of Pharmaceutical Sciences, University of Science and Technology Meghalaya, Baridua, Ribhoi, 793101, Steghalaya .....</p> <p><b>10)Ruhul Amin</b>  Address of Applicant :Assistant Professor Faculty of Pharmaceutical Science, Assam down town University, Panikhati, Guwahati- 781026 .....</p>
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(57) Abstract :  
This invention describes a wound analysing and treating system with a machine-learning-based approach for automated analysis of wound tissue from optical coherence tomography images. The process applies to all types of wounds, requires no manual input, and can produce clinically relevant metrics for the assessment of wound healing. The method addresses the need for automating and enriching the assessment of wounds and wound healing for improved monitoring of patients suffering from chronic injuries. This machine learning model will help identify and locate different tissue compartments present within a wound at variable depths previously not identified. It is directed to treat various forms of breaks in skin tissue and chronic surface tissue wounds.



No. of Pages : 20 No. of Claims : 9



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Department of Industrial Policy & Promotion,  
Ministry of Commerce & Industry,  
Government of India

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#### Application Details

APPLICATION NUMBER	202221069895
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	04/12/2022
APPLICANT NAME	1 . Sumit Kumar Roy 2 . Dr. Hitendra Kumar Lautre 3 . Dr. Prakash Tanaji Wankhedkar 4 . Dr. Kiranpal Singh Virk 5 . Dr. Ramakrishnan Raman 6 . Mrs.Kanchan Sudhir Gorde 7 . R.Meenakshi 8 . Dr. Pankaj Dadheech 9 . Dr. Pallab Kalita 10 . Ruhul Amin
TITLE OF INVENTION	SYSTEM TO ASSESS AND IDENTIFY THE CASUALTY OF THE WOUND TISSUE USING ARTIFICIAL INTELLIGENCE
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	aadhyadee25@gmail.com
ADDITIONAL-EMAIL (As Per Record)	aadhyadee25@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	30/12/2022

#### Application Status

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241071994 A

(19) INDIA

(22) Date of filing of Application :13/12/2022

(43) Publication Date : 30/12/2022

(54) Title of the invention : Artificial Intelligence and IoT based Automatic rainfall detection and alert system at early stages using rainfall threshold, WSN, Cloud and Machine learning algorithms

<p>(51) International classification : H04L0067120000, B60S0061080000, G06N0020000000, H04L0012280000, H04W0004700000</p> <p>(86) International Application No : PCT/IN/2022/01011900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number : NA Filing Date : NA</p> <p>(62) Divisional to Application Number : NA Filing Date : NA</p>	<p>(71)Name of Applicant :  <b>1)Dr. V. Kalpana</b>  Address of Applicant :Associate Professor, Computer Science and Engineering, Vsl Tech Rangarajan Dr Sagunthala R&amp;D, Institute of Science and Technology, Avadi, Chennai - 600062 .....</p> <p><b>2)Dr. M. V. Vijaya Saradhi</b>  <b>3)S. Kayaivizhi</b>  <b>4)Sayed Abulhasan Quadri</b>  <b>5)Dr. Karthikeyan Palaniappan</b>  <b>6)Dr. S. Pratap Singh</b>  <b>7)Priyanka Trikha</b>  <b>8)Dr. Krupal Prabhakar Pawar</b>  <b>9)Srinivasa P</b>  <b>10)Dr. K. Baranitharan</b>  Name of Applicant : NA  Address of Applicant : NA</p> <p>(72)Name of Inventor :  <b>1)Dr. V. Kalpana</b>  Address of Applicant :Associate Professor, Computer Science and Engineering, Vsl Tech Rangarajan Dr Sagunthala R&amp;D, Institute of Science and Technology, Avadi, Chennai - 600062 .....</p> <p><b>2)Dr. M. V. Vijaya Saradhi</b>  Address of Applicant :Professor and Head, Dept.of Computer Science and Engineering, AIF Engineering College, Ghatkesar, Hyderabad .....</p> <p><b>3)S. Kayaivizhi</b>  Address of Applicant :Assistant Professor, CSE, Malla Reddy Institute of Engineering and Technology, Maisamaguda, Dhullapally, Secunderabad Medchal, Telangana .....</p> <p><b>4)Sayed Abulhasan Quadri</b>  Address of Applicant :Professor, Computer science and engineering, SECAB Institute of Engineering and Technology, Naurasapur, Bagalkot cross road, Vijayapur, Karnataka .....</p> <p><b>5)Dr. Karthikeyan Palaniappan</b>  Address of Applicant :Associate Professor Department of CSE, Center for System Design, Chennai Institute of Technology, Chennai, TamilNadu, India. ....</p> <p><b>6)Dr. S. Pratap Singh</b>  Address of Applicant :Associate Professor, CSE Department, Matri Laxman Reddy Institute of Technology and Management, Dundigal, Hyderabad, Telangana .....</p> <p><b>7)Priyanka Trikha</b>  Address of Applicant :Assistant Professor, Computer Science &amp; Engineering, Swami Keshvanand Institute of Technology, Management &amp; Gramothan (SKIT) Institute address,Ram Nagariya , Jagatpura, Jaipur, Rajasthan .....</p> <p><b>8)Dr. Krupal Prabhakar Pawar</b>  Address of Applicant :Associate Professor, Mechanical Engineering, Rajiv Gandhi College of Engineering, KarjuleHarya, Ahaomednagar, Maharashtra, .....</p> <p><b>9)Srinivasa P</b>  Address of Applicant :Lecturer, Computer Science, Bhavans Vivekananda College, Osmania University, Medchal, Telangana .....</p> <p><b>10)Dr. K. Baranitharan</b>  Address of Applicant :Associate Professor, CSE, VSB ENGINEERING COLLEGE, Anna University 67, Karudayampalayam post, karur district - 639111 .....</p>
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(57) Abstract :  
Artificial Intelligence and IoT based Automatic rainfall detection and alert system at early stages using rainfall threshold, WSN, Cloud and Machine learning algorithms  
**ABSTRACT** An Internet of Things device is a sensor-equipped piece of hardware that can transfer data from one thing to another or to people over the internet (IoT device for short). The Internet of Things (IoT) category comprises wireless sensors, software, actuators, and hardware components. By unifying everything into a single, consistent architecture, the Internet of Things aims to provide us with control over our immediate surroundings and keep us abreast of any changes. Using an AtTiny85 microcontroller and a rain sensor, the objective of this inquiry is to develop a rain-activated alarm system. Even though the notion is straightforward, its success will have far-reaching effects. Numerous farming, agriculture, and irrigation-related projects, such as weather stations, can profit from it. This project can be combined with a home automation system to automatically close the windows if it starts to rain. This method can also help windshield wipers on automobiles, especially those used on luxury vehicles such as Teslas.

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



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#### Application Details

APPLICATION NUMBER	202241071994
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	13/12/2022
APPLICANT NAME	1 . Dr. V. Kalpana 2 . Dr M. V. Vijaya Saradhi 3 . S. Kayalvizhi 4 . Sayed Abulhasan Quadri 5 . Dr. Karthikeyan Palaniappan 6 . Dr. S. Pratap Singh 7 . Priyanka Trikha 8 . Dr. Krupal Prabhakar Pawar 9 . Srinivasa P 10 . Dr. K. Baranitharan
TITLE OF INVENTION	Artificial Intelligence and IoT based Automatic rainfall detection and alert system at early stages using rainfall threshold, WSN, Cloud and Machine learning algorithms
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	senanipindia@gmail.com
ADDITIONAL-EMAIL (As Per Record)	pprservices21@gmail.com
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**

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➡ Filed ➡ Published ➡ RQ Filed ➡ Under Examination ➡ Disposed

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पेटेंट कार्यालय, भारत सरकार

The Patent Office, Government Of India

पेटेंट प्रमाण पत्र

Patent Certificate

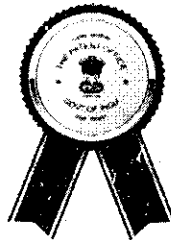
(पेटेंट नियमावली का नियम 74)

(Rule 74 of The Patents Rules)

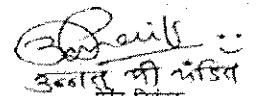
पेटेंट सं. / Patent No. : 538748  
आवेदन सं. / Application No. : 202221036594  
फाइल करने की तारीख / Date of Filing : 26/06/2022  
पेटेंटी / Patentee : 1.Dr. Neha Verma 2.Dr. Pankaj Dadheech 3.Jatin Kumar Gupta  
4.Dr. Brijesh Patel

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A VEHICLE-TO-VEHICLE ALERTING MECHANISM EQUIPPED SWAPPABLE ELECTRIC BATTERY SYSTEM TO NOTIFY REQUIREMENTS*. नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2022 के छब्बीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A VEHICLE-TO-VEHICLE ALERTING MECHANISM EQUIPPED SWAPPABLE ELECTRIC BATTERY SYSTEM TO NOTIFY REQUIREMENTS*. as disclosed in the above mentioned application for the term of 20 years from the 26<sup>th</sup> day of June 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/05/2024  
Date of Grant :

  
डुनारु की रंडित  
पेटेंट नियंत्रक  
Controller of Patents

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जून 2024 के छब्बीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगा।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 26<sup>th</sup> day of June 2024 and on the same day in every year thereafter.



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#### Application Details

APPLICATION NUMBER	202221036594
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	26/06/2022
APPLICANT NAME	1 . Dr. Neha Verma 2 . Dr. Pankaj Dadheech 3 . Jatin Kumar Gupta 4 . Dr. Brijesh Patel 5 . Dr. Rityuj Singh Parihar 6 . Dr Nagendra Tripathi 7 . Dr. Veeresh Rampur 8 . Sanjay Kumar Sahu 9 . Dr. Mohit Kumar Sahu 10 . Dr Nitin Kumar Jaiswal
TITLE OF INVENTION	A VEHICLE-TO-VEHICLE ALERTING MECHANISM EQUIPPED SWAPPABLE ELECTRIC BATTERY SYSTEM TO NDTIFY REQUIREMENTS.
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	n.verma@ssipmt.com
ADDITIONAL-EMAIL (As Per Record)	aadhyadee25@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	25/09/2022
PUBLICATION DATE (U/S 11A)	07/12/2022
FIRST EXAMINATION REPORT DATE	09/12/2022
Date Of Certificate Issue	21/05/2024
POST GRANT JOURNAL DATE	24/05/2024
REPLY TO FER DATE	29/04/2023

#### Application Status

APPLICATION STATUS

**Granted Application, Patent Number :538748**

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[Order\(s\)/Decision\(s\)](#)

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➡ Filed ➡ RQ Filed ➡ Published ➡ Under Examination ➡ Disposed



US 20220335739A1

(19) **United States**

(12) **Patent Application Publication**

**Bhatia et al.**

(10) Pub. No.: **US 2022/0335739 A1**

(43) Pub. Date: **Oct. 20, 2022**

(54) **CHARACTER AND SYMBOL RECOGNITION SYSTEM FOR VEHICLE SAFETY**

**Publication Classification**

(71) Applicants: **Surbhi Bhatia**, Hofuf (SA); **Mohammad Tabrez Quasim**, Bisha (SA); **Shadab Alam**, Jizan (SA); **Mohammad Ayoub Khan**, Bisha (SA); **Pankaj Dadheech**, Jaipur (IN); **Swati Chandna**, Heidelberg (DE); **Riyaz Sheikh Abdullah**, Jizan (SA); **Gaurav Indra**, Delhi (IN); **D. Shanthi**, Hyderabad (IN); **Amit Kumar Tyagi**, Chennai (IN)

(51) **Int. Cl.**  
*G06V 30/148* (2006.01)  
*G06V 20/62* (2006.01)  
*G06V 20/56* (2006.01)  
*G06V 10/82* (2006.01)  
*B60R 11/04* (2006.01)  
(52) **U.S. Cl.**  
CPC ..... *G06V 30/153* (2022.01); *G06V 20/52* (2022.01); *G06V 20/56* (2022.01); *G06V 10/82* (2022.01); *B60R 11/04* (2013.01)

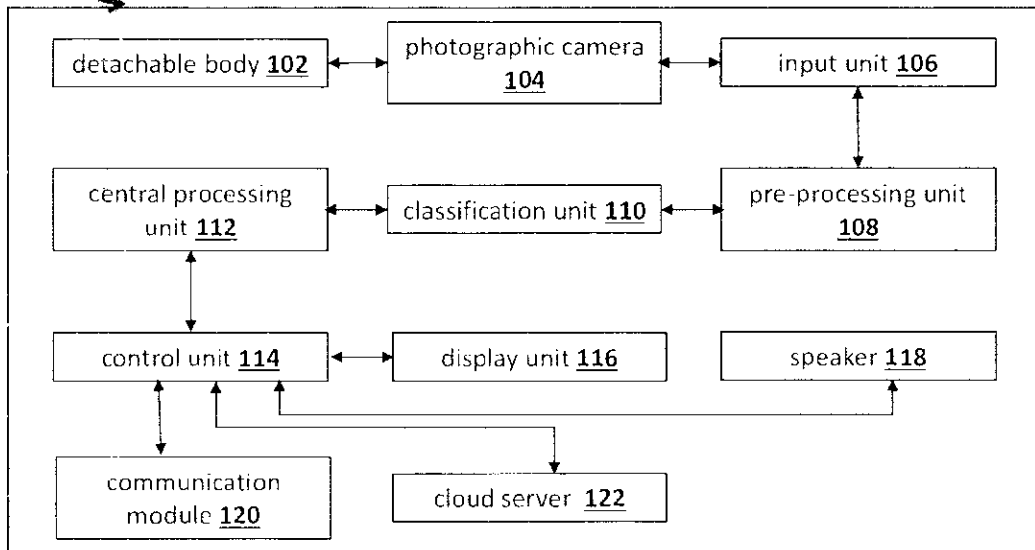
(72) Inventors: **Surbhi Bhatia**, Hofuf (SA); **Mohammad Tabrez Quasim**, Bisha (SA); **Shadab Alam**, Jizan (SA); **Mohammad Ayoub Khan**, Bisha (SA); **Pankaj Dadheech**, Jaipur (IN); **Swati Chandna**, Heidelberg (DE); **Riyaz Sheikh Abdullah**, Jizan (SA); **Gaurav Indra**, Delhi (IN); **D. Shanthi**, Hyderabad (IN); **Amit Kumar Tyagi**, Chennai (IN)

(57) **ABSTRACT**  
The character and symbol recognition system comprises a detachable body having a photographic camera to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols; an input unit to acquire the real time captured image; a pre-processing unit to detect a character and symbol region; a classification unit equipped with at least two channel neural network based on CNN and LSTM to separate the character and symbol region; a central processing unit to calculate weights for transitions to the candidates thereby generate one of a first character or first symbol string transition data based on a set of the candidates and the weights; and a control unit to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit and play the detected information on a speaker to alert a rider.

(21) Appl. No.: **17/809,443**

(22) Filed: **Jun. 28, 2022**

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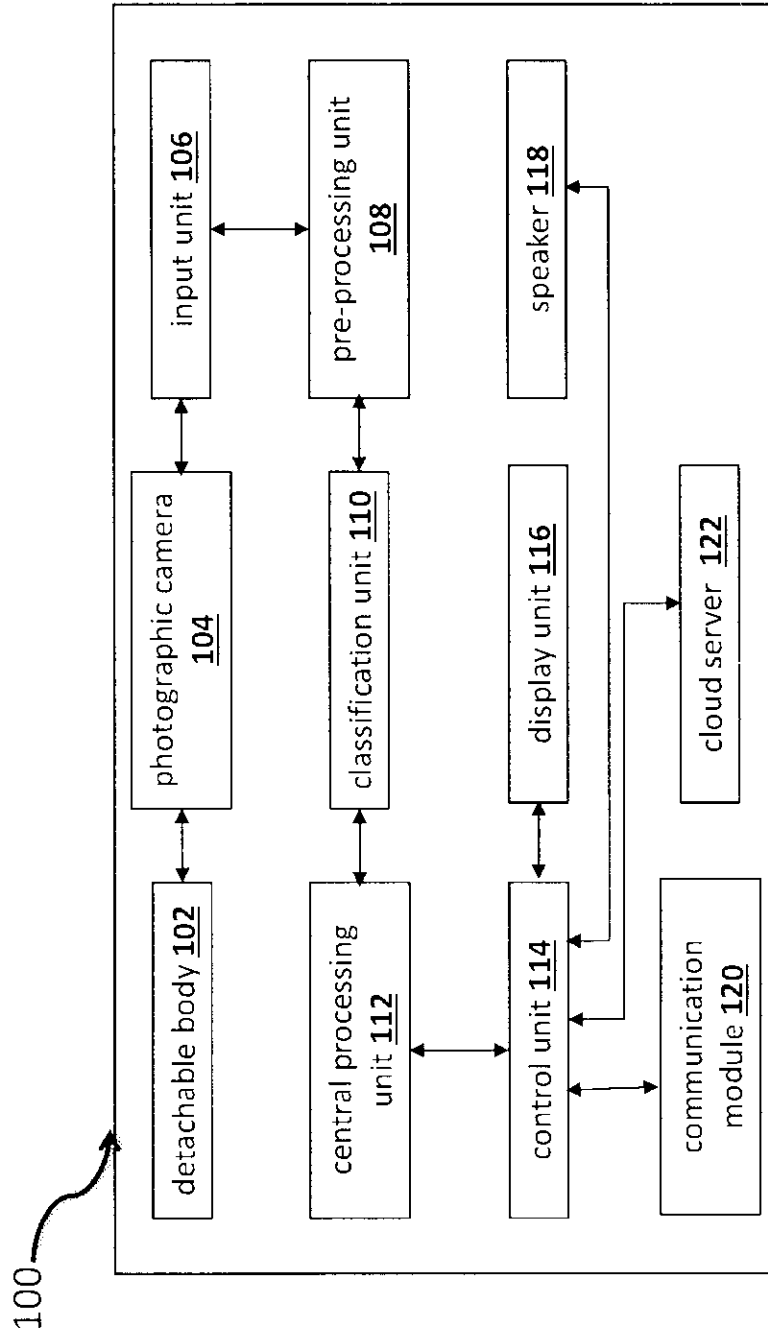


Figure 1

## CHARACTER AND SYMBOL RECOGNITION SYSTEM FOR VEHICLE SAFETY

### FIELD OF THE INVENTION

[0001] The present disclosure relates to digital character recognition, in more details, a character and symbol recognition system for vehicle safety.

### BACKGROUND OF THE INVENTION

[0002] In spite of the prevalence of technological media in today's world, a significant quantity of written communications, such as books, bank checks, contracts, and so on, is still done on paper. The automation of information extraction, classification, search, and retrieval of documents is becoming increasingly popular.

[0003] One of the first and most effective uses of pattern recognition was the recognition of printed characters using computers. For more than three decades, researchers have been working on optical character recognition (OCR). Hundreds of thousands of ways have been developed to deal with the recognition of machine-printed and handwritten characters in various scripts. The problem can be regarded solved for machine-printed Latin characters, at least when the degree of noise is modest. In cases where quality imagery is available, machine-printed character recognition rates often surpass 99%.

[0004] However, dealing with handwritten letters and sentences is tough, especially when the visuals are chaotic. Handwriting identification is tough due to the fact that there are as many different handwriting styles as there are persons. In fact, it's usually assumed that each person's handwriting is unique to them. Handwriting Identification is a forensic science subject that studies the identification or verification of the writer of a particular handwritten document. It is founded on the idea that no two people's handwritings are identical. This means that a handwritten character/word might assume an excessive number of different shapes, making identification difficult even for humans. In the view of the foregoing discussion, it is clearly portrayed that there is a need to have a character and symbol recognition system for vehicle safety.

### SUMMARY OF THE INVENTION

[0005] The present disclosure seeks to provide a character and symbol recognition system for guiding and alerting riders about road safety precautions.

[0006] In an embodiment, a character and symbol recognition system for vehicle safety is disclosed. The system includes a detachable body having a photographic camera installed on a top/front side of a vehicle to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols. The system further includes an input unit connected to the photographic camera to acquire the real time captured image. The system further includes a pre-processing unit to detect a character and symbol region from the real time captured image. The system further includes a classification unit equipped with at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long- and Short-Term Memory Network) to separate the character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis in separated regions and generate one or more character rec-

ognition and symbol recognition result candidates for each character and symbol. The system further includes a central processing unit coupled to the classification unit to receive the candidates and calculate weights for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein consecutively perform state transitions based one of the first character string transition data or first symbol string transition data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more state transition results signal based on the cumulative weight. The system further includes a control unit to receive the generated one or more state transition results signal to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit and play the detected information on a speaker to alert a rider.

[0007] In another embodiment, the weights are revised on each of the candidates character size.

[0008] In another embodiment, the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state of a character and symbol string transition to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the candidate on a character-by-character basis.

[0009] In another embodiment, the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network based on CNN and LSTM to avoid any error.

[0010] In another embodiment, the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is repeated to eliminate the error.

[0011] In another embodiment, the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid accidents.

[0012] In another embodiment, the field of view of the photographic camera preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras or camera with higher field of view.

[0013] In another embodiment, the pre-processing unit further comprises removal of margin, rule-line, noise and skew correction.

[0014] In another embodiment, a cloud server wirelessly connected to the control unit through a communication module to receive and store the detected information in multiple formats including images, text, and audio.

[0015] In another embodiment, the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols registered in a language database.

[0016] An object of the present disclosure is to perform character recognition from a scene image with high accuracy and at high speed.

[0017] Another object of the present disclosure is to guide and alert riders about road safety precautions.

[0018] Yet another object of the present invention is to deliver an expeditious and cost-effective character and symbol recognition system for vehicle safety.

[0019] To further clarify advantages and features of the present disclosure, a more particular description of the invention will be rendered by reference to specific embodiments thereof, which is illustrated in the appended drawings. It is appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail with the accompanying drawings.

#### BRIEF DESCRIPTION OF FIGURES

[0020] These and other features, aspects, and advantages of the present disclosure will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

[0021] FIG. 1 illustrates a block diagram of a character and symbol recognition system for vehicle safety in accordance with an embodiment of the present disclosure.

[0022] Further, skilled artisans will appreciate that elements in the drawings are illustrated for simplicity and may not have necessarily been drawn to scale. For example, the flow charts illustrate the method in terms of the most prominent steps involved to help to improve understanding of aspects of the present disclosure. Furthermore, in terms of the construction of the device, one or more components of the device may have been represented in the drawings by conventional symbols, and the drawings may show only those specific details that are pertinent to understanding the embodiments of the present disclosure so as not to obscure the drawings with details that will be readily apparent to those of ordinary skill in the art having benefit of the description herein.

#### DETAILED DESCRIPTION

[0023] For the purpose of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawings and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated system, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

[0024] It will be understood by those skilled in the art that the foregoing general description and the following detailed description are exemplary and explanatory of the invention and are not intended to be restrictive thereof.

[0025] Reference throughout this specification to "an aspect", "another aspect" or similar language means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present disclosure. Thus, appearances of the phrase "in an embodiment", "in another embodiment" and similar language throughout this specification may, but do not necessarily, all refer to the same embodiment.

[0026] The terms "comprises", "comprising", or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a process or method that comprises a list of steps does not include only those steps but may include other steps not expressly listed or inherent to such process or method. Similarly, one or more devices or sub-systems or

elements or structures or components preceded by "comprises..." does not, without more constraints, preclude the existence of other devices or other sub-systems or other elements or other structures or other components or additional devices or additional sub-systems or additional elements or additional structures or additional components.

[0027] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. The system, methods, and examples provided herein are illustrative only and not intended to be limiting.

[0028] Embodiments of the present disclosure will be described below in detail with reference to the accompanying drawings.

[0029] Referring to FIG. 1, a block diagram of a character and symbol recognition system for vehicle safety is illustrated in accordance with an embodiment of the present disclosure. The system 100 includes a detachable body 102 having a photographic camera 104 installed on a top/front side of a vehicle to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols. The detachable body 102 can be attached with any of the vehicles including two-wheelers, four-wheelers or big trucks etc.

[0030] In an embodiment, an input unit 106 is connected to the photographic camera 104 to acquire the real time captured image.

[0031] In an embodiment, a pre-processing unit 108 is connected to the input unit 106 to detect a character and symbol region from the real time captured image. The pre-processing unit 108 further includes at least one operation selected from the group consisting of slant correction, binarization, vertical filling inside each connected components and removing isolated blocks.

[0032] In an embodiment, a classification unit 110 is equipped with at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long and Short-Term Memory Network) to separate the character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis in separated regions and generate one or more character recognition and symbol recognition result candidates for each character and symbol.

[0033] In an embodiment, a central processing unit 112 is coupled to the classification unit 110 to receive the candidates and calculate weights for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein consecutively perform state transitions based one of the first character string transition data or first symbol string transition data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more state transition results signal based on the cumulative weight.

[0034] In an embodiment, a control unit 114 is connected to the central processing unit 112 to receive the generated one or more state transition results signal to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit 116 and play the detected information on a speaker 118 to alert a rider.

[0035] In an exemplary embodiment, the alert may include cautions about a sharp left turn, cautions the driver about a narrow road, indicates the driver about a narrow bridge on the road ahead, a sign indicates that pedestrians should cross the road and the like.

[0036] In another embodiment, the weights are revised on each of the candidates character size.

[0037] In another embodiment, the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state of a character and symbol string transition to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the candidate on a character-by-character basis.

[0038] In another embodiment, the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network based on CNN and LSTM to avoid any error.

[0039] In another embodiment, the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is repeated to eliminate the error.

[0040] In another embodiment, the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid accidents.

[0041] In another embodiment, the field of view of the photographic camera 104 preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras or camera with higher field of view.

[0042] In another embodiment, the pre-processing unit 108 further comprises removal of margin, rule-line, noise and skew correction.

[0043] In another embodiment, a cloud server 122 wirelessly connected to the control unit 114 through a communication module 120 to receive and store the detected information in multiple formats including images, text, and audio.

[0044] In another embodiment, the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols registered in a language database.

[0045] The drawings and the foregoing description give examples of embodiments. Those skilled in the art will appreciate that one or more of the described elements may well be combined into a single functional element. Alternatively, certain elements may be split into multiple functional elements. Elements from one embodiment may be added to another embodiment. For example, orders of processes described herein may be changed and are not limited to the manner described herein. Moreover, the actions of any flow diagram need not be implemented in the order shown; nor do all of the acts necessarily need to be performed. Also, those acts that are not dependent on other acts may be performed in parallel with the other acts. The scope of embodiments is by no means limited by these specific examples. Numerous variations, whether explicitly given in the specification or not, such as differences in structure, dimension, and use of material, are possible. The scope of embodiments is at least as broad as given by the following claims.

[0046] Benefits, other advantages, and solutions to problems have been described above with regard to specific embodiments. However, the benefits, advantages, solutions

to problems, and any component(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential feature or component of any or all the claims.

1. A character and symbol recognition system for vehicle safety, the system comprises:

a detachable body having a photographic camera installed on a top/front side of a vehicle to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols;

an input unit connected to the photographic camera to acquire the real time captured image;

a pre-processing unit to detect a character and symbol region from the real time captured image;

a classification unit equipped with at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long- and Short-Term Memory Network) to separate the character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis in separated regions and generate one or more character recognition and symbol recognition result candidates for each character and symbol;

a central processing unit coupled to the classification unit to receive the candidates and calculate weights for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein consecutively perform state transitions based one of the first character string transition data or first symbol string transition data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more state transition results signal based on the cumulative weight; and

a control unit to receive the generated one or more state transition results signal to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit and play the detected information on a speaker to alert a rider.

2. The system of claim 1, wherein the weights are revised on each of the candidates character size.

3. The system of claim 1, wherein the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state of a character and symbol string transition to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the candidate on a character-by-character basis.

4. The system of claim 1, wherein the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network based on CNN and LSTM to avoid any error.

5. The system of claim 1, wherein the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is repeated to eliminate the error.

6. The system of claim 1, wherein the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid accidents.

7. The system of claim 1, wherein the field of view of the photographic camera preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras or camera with higher field of view.

8. The system of claim 1, wherein the pre-processing unit further comprises removal of margin, rule-line, noise and skew correction.

9. The system of claim 1, wherein a cloud server wirelessly connected to the control unit through a communication module to receive and store the detected information in multiple formats including images, text, and audio.

10. The system of claim 1, wherein the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols registered in a language database.

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**Title:** CHARACTER AND SYMBOL RECOGNITION SYSTEM FOR VEHICLE SAFETY

**Document Type and Number:** United States Patent Application 20220335739 **Kind Code:** A1

**Abstract:** The character and symbol recognition system comprises a detachable body having a photographic camera to capture real time image of one of sheet or poster comprising symbols, an input unit to acquire the real time captured image; a pre-processing unit to detect a character and symbol region; a classification unit equipped with at least one channel neural network based on CNN (Convolutional Neural Network) to separate the character and symbol region; a central processing unit to calculate weights for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and the weights, and a control unit to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit and play the detected information on a speaker to alert a rider.

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**Inventors:** Bhatia, Surbhi (Hofuf, SA)  
Quasim, Mohammad Tabrez (Bisha, SA)  
Alani, Shadabi (Jizan, SA)  
Khan, Mohammad Ayoub (Bisha, SA)  
Dadheech, Pankaj (Jaipur, IN)  
Chandna, Swati (Heidelberg, DE)  
Abdullah, Riyaz Sheikh (Jizan, SA)  
Indira, Gaurav (Delhi, IN)  
Shanthy D (Hyderabad, IN)  
Tyagi, Amit Kumar (Chennai, IN)

**Application Number:** 17/809443

**Publication Date:** 10/20/2022

**Filing Date:** 06/28/2022

**View Patent Images:** [Download PDF 20220335739](#)

**Export Citation:** [Click for automatic bibliography generation](#)

**International Classes:** G06V30/148 B60R11/04 G06V10/82 G06V20/56 G06V20/62

**Claims:**

1. A character and symbol recognition system for vehicle safety, the system comprises: a detachable body having a photographic camera installed on a top/front side of a sheet or poster comprising of printed and handwritten characters and symbols; an input unit connected to the photographic camera to acquire the real time captured image; a classification unit equipped with at least two channel neural network based on CNN (Convolutional Neural Network) to separate the character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis for one or more character recognition and symbol recognition result candidates for each character and symbol; a central processing unit coupled to the classification unit for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and state transitions based on the first character string transition data or first symbol string transition data and collect the weights in each state transition to calculate a signal based on the cumulative weight, and a control unit to receive the generated one or more state transition results and display the detected information on a display unit and play the detected information on a speaker to alert a rider.
2. The system of claim 1, wherein the weights are received on each of the candidates character size.
3. The system of claim 1, wherein the generated one of the first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial transition to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition from the candidate to a final state of the character and symbol string transition.

4. The system of claim 1, wherein the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network.
5. The system of claim 1, wherein the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is performed.
6. The system of claim 1, wherein the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid.
7. The system of claim 1, wherein the field of view of the photographic camera preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras.
8. The system of claim 1, wherein the pre-processing unit further comprises removal of margin, rule-line, noise and skew correction.
9. The system of claim 1, wherein a cloud server wirelessly connected to the control unit through a communication module to receive and store the detected information in a cloud database.
10. The system of claim 1, wherein the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols.

**Description:****FIELD OF THE INVENTION**

The present disclosure relates to digital character recognition, in more details, a character and symbol recognition system for vehicle safety.

**BACKGROUND OF THE INVENTION**

In spite of the prevalence of technological media in today's world, a significant quantity of written communications, such as books, bank checks, contracts, and social media posts, require manual information extraction, classification, search, and retrieval of documents is becoming increasingly popular.

One of the first and most effective uses of pattern recognition was the recognition of printed characters using computers. For more than three decades, researchers have developed hundreds of thousands of ways to deal with the recognition of machine-printed and handwritten characters in various scripts and languages. Machine-printed Latin characters, at least when the degree of noise is modest. In cases where quality imagery is available, machine-printed character recognition rates are high.

However, dealing with handwritten letters and sentences is tough, especially when the visuals are chaotic. Handwriting identification is tough due to the fact that there are many different styles of handwriting. In fact, it's usually assumed that each person's handwriting is unique to them. Handwriting identification is a forensic science subject that studies a particular handwritten document. It is founded on the idea that no two people's handwritings are identical. This means that a handwritten character/word might appear similar to another, making identification difficult even for humans. In the view of the foregoing discussion, it is clearly portrayed that there is a need to have a character and symbol recognition system for vehicle safety.

**SUMMARY OF THE INVENTION**

The present disclosure seeks to provide a character and symbol recognition system for guiding and alerting riders about road safety precautions.

In an embodiment, a character and symbol recognition system for vehicle safety is disclosed. The system includes a detachable body having a photographic camera to capture real-time image of one of sheet or poster comprising of printed and handwritten characters and symbols. The system further includes an input unit connected to the body to capture real-time image. The system further includes a pre-processing unit to detect a character and symbol region from the real-time captured image. The system further includes at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long- and Short-Term Memory Network) to separate the character and symbol region and recognize the characters and symbols on character-by-character basis in separated regions and generate one or more character recognition and symbol recognition results. The system further includes a central processing unit coupled to the classification unit to receive the candidates and calculate weights for transitions to the character string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein the central processing unit consecutively perform state transition data or first symbol string transition data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more cumulative weight. The system further includes a control unit to receive the generated one or more state transition results signal to detect one or both of the printed and handwritten characters and symbols. The system further includes a display unit and a speaker to display the detected information on a display unit and play the detected information on a speaker to alert a rider.

In another embodiment, the weights are revised on each of the candidates character size.

In another embodiment, the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the candidate.

In another embodiment, the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network.

In another embodiment, the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is performed.

In another embodiment, the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid.

In another embodiment, the field of view of the photographic camera preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras.

In another embodiment, the pre-processing unit further comprises removal of margin, rule-line, noise and skew correction.

In another embodiment, a cloud server wirelessly connected to the control unit through a communication module to receive and store the detected information in a cloud database.

In another embodiment, the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols.

An object of the present disclosure is to perform character recognition from a scene image with high accuracy and at high speed.

Another object of the present disclosure is to guide and alert riders about road safety precautions.

Yet another object of the present invention is to deliver an expeditious and cost-effective character and symbol recognition system for vehicle safety.

To further clarify advantages and features of the present disclosure, a more particular description of the invention will be rendered by reference to specific embodiments thereof in the accompanying drawings. It is appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described with additional specificity and detail with the accompanying drawings.

**BRIEF DESCRIPTION OF FIGURES**

These and other features, aspects, and advantages of the present disclosure will become better understood when the following detailed description is read with reference to the accompanying drawings, wherein:

FIG. 1 illustrates a block diagram of a character and symbol recognition system for vehicle safety in accordance with an embodiment of the present disclosure.

Further skilled artisans will appreciate that elements in the drawings are illustrated for simplicity and may not have necessarily been drawn to scale. For example, the steps in the process flow may not be performed in the order shown and may be performed in parallel. Furthermore, in terms of the construction of the device, one or more components may be represented in the drawings by exploded views, and the drawings may show only those specific details that are pertinent to understanding the embodiment of the invention, and other details that will be readily apparent to those of ordinary skill in the art having benefit of the disclosure herein.

FIG. 1 is a block diagram of a character and symbol recognition system for vehicle safety in accordance with an embodiment of the present disclosure.

For the purpose of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawings and specification. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated system, the invention as illustrated herein being contemplated as would naturally occur to one skilled in the art to which the invention relates.

It will be understood by those skilled in the art that the foregoing general description and the following detailed description are exemplary and explanatory of the invention hereof.

Reference throughout this specification to an aspect, "another aspect" or similar language means that a particular feature, structure, or characteristic described in at least one embodiment of the present disclosure. Thus, appearances of the phrase "in an embodiment", "in another embodiment" and similar language throughout the refer to the same embodiment.

The terms "comprises", "comprising", or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a process or method that encompasses, but may include other steps not expressly listed or inherent to such process or method. Similarly, one or more devices or sub-systems or elements or structures or components, without more constraints, preclude the existence of other devices or other sub-systems or other elements or other structures or other components or additional elements or additional structures or additional components.

Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which the examples provided herein are illustrative only and not intended to be limiting.

Embodiments of the present disclosure will be described below in detail with reference to the accompanying drawings.

Referring to FIG. 1, a block diagram of a character and symbol recognition system for vehicle safety is illustrated in accordance with an embodiment of the present disclosure. A body 102 having a photographic camera 104 installed on a top-front side of a vehicle to capture real time image of one of sheet or poster comprising of printed and h detachable body 102 can be attached with any of the vehicles including two-wheelers, four-wheelers or big trucks etc.

In an embodiment, an input unit 106 is connected to the photographic camera 104 to acquire the real time captured image.

In an embodiment, a pre-processing unit 105 is connected to the input unit 106 to detect a character and symbol region from the real time captured image. The pre-processing operation selected from the group consisting of slant correction, binarization, vertical filling inside each connected components and removing isolated blocks.

In an embodiment, a classification unit 110 is equipped with at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long-short character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis in separated regions and symbol recognition result candidates for each character and symbol.

In an embodiment, a central processing unit 112 is coupled to the classification unit 110 to receive the candidates and calculate weights for transitions to the candidate string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein consecutively perform state transitions based on first symbol string transition data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more cumulative weight.

In an embodiment, a control unit 114 is connected to the central processing unit 112 to receive the generated one or more state transition results signal to detect one and symbols thereby display the detected information on a display unit 116 and play the detected information on a speaker 118 to alert a rider.

In an exemplary embodiment, the alert may include cautions about a sharp left turn, cautions the driver about a narrow road, indicates the driver about a narrow bridge, pedestrians should cross the road and the like.

In another embodiment, the weights are revised on each of the candidates character size.

In another embodiment, the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the

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In another embodiment, a cloud server 122 wirelessly connected to the control unit 114 through a communication module 120 to receive and store the detected info and audio.

In another embodiment, the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and syn

The drawings and the foregoing description give examples of embodiments. Those skilled in the art will appreciate that one or more of the described elements may be. Alternatively, certain elements may be split into multiple functional elements. Elements from one embodiment may be added to another embodiment. For example, a changed and are not limited in the manner described herein. Moreover, the actions of any flow diagram need not be implemented in the order shown, nor do all of those acts that are not dependent on other acts may be performed in parallel with the other acts. The scope of embodiments is by no means limited by these specific examples explicitly given in the specification or not, such as differences in structure, dimension, and use of material, are possible. The scope of embodiments is at least as bro

Benefits, other advantages, and solutions to problems have been described above with regard to specific embodiments. However, the benefits, advantages, solution-cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential feature or component of a

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# **CHARACTER AND SYMBOL RECOGNITION SYSTEM FOR VEHICLE SAFETY**

Jun 28, 2022

The character and symbol recognition system comprises a detachable body having a photographic camera to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols; an input unit to acquire the real time captured image; a pre-processing unit to detect a character and symbol region; a classification

unit equipped with at least two channel neural network based on CNN and LSTM to separate the character and symbol region; a central processing unit to calculate weights for transitions to the candidates thereby generate one of a first character or first symbol string transition data based on a set of the candidates and the weights; and a control unit to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit and play the detected information on a speaker to alert a rider.

[Skip to: Description](#) · [Claims](#) · [Patent History](#) · [Patent History](#)

## **Description**

### **FIELD OF THE INVENTION**

The present disclosure relates to digital character recognition, in more details, a character and symbol recognition system for vehicle safety.

### **BACKGROUND OF THE INVENTION**

In spite of the prevalence of technological media in today's world, a significant quantity of written communications, such as books, bank checks, contracts, and so on, is still done on paper. The automation of information extraction, classification, search, and retrieval of documents is becoming increasingly popular.

One of the first and most effective uses of pattern recognition was the recognition of printed characters using computers. For more than three decades, researchers have been

working on optical character recognition (OCR). Hundreds of thousands of ways have been developed to deal with the recognition of machine-printed and handwritten characters in various scripts. The problem can be regarded solved for machine-printed Latin characters, at least when the degree of noise is modest. In cases where quality imagery is available, machine-printed character recognition rates often surpass 9%.

However, dealing with handwritten letters and sentences is tough, especially when the visuals are chaotic. Handwriting identification is tough due to the fact that there are as many different handwriting styles as there are persons. In fact, it's usually assumed that each person's handwriting is unique to them. Handwriting Identification is a forensic science subject that studies the identification or verification of the writer of a particular handwritten document. It is founded on the idea that no two people's handwritings are identical. This means that a handwritten character/word might assume an excessive number of different shapes, making identification difficult even for humans. In the view of the forgoing discussion, it is clearly portrayed that there is a need to have a character and symbol recognition system for vehicle safety.

## **SUMMARY OF THE INVENTION**

The present disclosure seeks to provide a character and symbol recognition system for guiding and alerting riders about road safety precautions.

In an embodiment, a character and symbol recognition system for vehicle safety is disclosed. The system includes a detachable body having a photographic camera installed on a top/front side of a vehicle to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols. The system further includes an input unit connected to the photographic camera to acquire the real time captured image. The system further includes a pre-processing unit to detect a character and symbol region from the real time captured image. The system further includes a classification unit equipped with at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long- and Short-Term Memory Network) to separate the character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis in separated regions and generate one or more character recognition and symbol recognition result candidates for each character and symbol. The system further includes a central processing unit coupled to the classification unit to receive the candidates and calculate weights for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein

consecutively perform state transitions based one of the first character string transition data or first symbol string transition data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more state transition results signal based on the cumulative weight. The system further includes a control unit to receive the generated one or more state transition results signal to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit and play the detected information on a speaker to alert a rider.

In another embodiment, the weights are revised on each of the candidates character size.

In another embodiment, the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state of a character and symbol string transition to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the candidate on a character-by-character basis.

In another embodiment, the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network based on CNN and LSTM to avoid any error.

In another embodiment, the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is repeated to eliminate the error.

In another embodiment, the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid accidents.

In another embodiment, the field of view of the photographic camera preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras or camera with higher field of view.

In another embodiment, the pre-processing unit further comprises removal of margin, rule-line, noise and skew correction.

In another embodiment, a cloud server wirelessly connected to the control unit through a communication module to receive and store the detected information in multiple formats including images, text, and audio.



In another embodiment, the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols registered in a language database.

An object of the present disclosure is to perform character recognition from a scene image with high accuracy and at high speed.

Another object of the present disclosure is to guide and alert riders about road safety precautions.

Yet another object of the present invention is to deliver an expeditious and cost-effective character and symbol recognition system for vehicle safety.

To further clarify advantages and features of the present disclosure, a more particular description of the invention will be rendered by reference to specific embodiments thereof, which is illustrated in the appended drawings. It is appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail with the accompanying drawings.

## **BRIEF DESCRIPTION OF FIGURES**

These and other features, aspects, and advantages of the present disclosure will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

FIG. 1 illustrates a block diagram of a character and symbol recognition system for vehicle safety in accordance with an embodiment of the present disclosure.

Further, skilled artisans will appreciate that elements in the drawings are illustrated for simplicity and may not have necessarily been drawn to scale. For example, the flow charts illustrate the method in terms of the most prominent steps involved to help to improve understanding of aspects of the present disclosure. Furthermore, in terms of the construction of the device, one or more components of the device may have been represented in the drawings by conventional symbols, and the drawings may show only those specific details that are pertinent to understanding the embodiments of the present disclosure so as not to obscure the drawings with details that will be readily apparent to those of ordinary skill in the art having benefit of the description herein.

## DETAILED DESCRIPTION

For the purpose of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawings and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated system, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

It will be understood by those skilled in the art that the foregoing general description and the following detailed description are exemplary and explanatory of the invention and are not intended to be restrictive thereof.

Reference throughout this specification to “an aspect”, “another aspect” or similar language means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present disclosure. Thus, appearances of the phrase “in an embodiment”, “in another embodiment” and similar language throughout this specification may, but do not necessarily, all refer to the same embodiment.

The terms “comprises”, “comprising”, or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a process or method that comprises a list of steps does not include only those steps but may include other steps not expressly listed or inherent to such process or method. Similarly, one or more devices or sub-systems or elements or structures or components preceded by “comprises . . . a” does not, without more constraints, preclude the existence of other devices or other sub-systems or other elements or other structures or other components or additional devices or additional sub-systems or additional elements or additional structures or additional components.

Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. The system, methods, and examples provided herein are illustrative only and not intended to be limiting.

Embodiments of the present disclosure will be described below in detail with reference to the accompanying drawings.

Referring to FIG. 1, a block diagram of a character and symbol recognition system for vehicle safety is illustrated in accordance with an embodiment of the present disclosure.

The system **100** includes a detachable body **102** having a photographic camera **104** installed on a top/front side of a vehicle to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols. The detachable body **102** can be attached with any of the vehicles including two-wheelers, four-wheelers or big trucks etc.

In an embodiment, an input unit **106** is connected to the photographic camera **104** to acquire the real time captured image.

In an embodiment, a pre-processing unit **108** is connected to the input unit **106** to detect a character and symbol region from the real time captured image. The pre-processing unit **108** further includes at least one operation selected from the group consisting of slant correction, binarization, vertical filling inside each connected components and removing isolated blocks.

In an embodiment, a classification unit **110** is equipped with at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long- and Short-Term Memory Network) to separate the character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis in separated regions and generate one or more character recognition and symbol recognition result candidates for each character and symbol.

In an embodiment, a central processing unit **112** is coupled to the classification unit **110** to receive the candidates and calculate weights for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein consecutively perform state transitions based one of the first character string transition data or first symbol string transition data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more state transition results signal based on the cumulative weight.

In an embodiment, a control unit **114** is connected to the central processing unit **112** to receive the generated one or more state transition results signal to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit **116** and play the detected information on a speaker **118** to alert a rider.

In an exemplary embodiment, the alert may include cautions about a sharp left turn, cautions the driver about a narrow road, indicates the driver about a narrow bridge on the road ahead, a sign indicates that pedestrians should cross the road and the like.

In another embodiment, the weights are revised on each of the candidates character size.

In another embodiment, the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state of a character and symbol string transition to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the candidate on a character-by-character basis.

In another embodiment, the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network based on CNN and LSTM to avoid any error.

In another embodiment, the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is repeated to eliminate the error.

In another embodiment, the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid accidents.

In another embodiment, the field of view of the photographic camera **104** preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras or camera with higher field of view.

In another embodiment, the pre-processing unit **108** further comprises removal of margin, rule-line, noise and skew correction.

In another embodiment, a cloud server **122** wirelessly connected to the control unit **114** through a communication module **120** to receive and store the detected information in multiple formats including images, text, and audio.

In another embodiment, the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols registered in a language database.

The drawings and the forgoing description give examples of embodiments. Those skilled in the art will appreciate that one or more of the described elements may well be combined into a single functional element. Alternatively, certain elements may be split into multiple functional elements. Elements from one embodiment may be added to another embodiment. For example, orders of processes described herein may be changed and are not limited to the manner described herein. Moreover, the actions of any flow diagram

need not be implemented in the order shown; nor do all of the acts necessarily need to be performed. Also, those acts that are not dependent on other acts may be performed in parallel with the other acts. The scope of embodiments is by no means limited by these specific examples. Numerous variations, whether explicitly given in the specification or not, such as differences in structure, dimension, and use of material, are possible. The scope of embodiments is at least as broad as given by the following claims.

Benefits, other advantages, and solutions to problems have been described above with regard to specific embodiments. However, the benefits, advantages, solutions to problems, and any component(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential feature or component of any or all the claims.

## Claims

1. A character and symbol recognition system for vehicle safety, the system comprises:

a detachable body having a photographic camera installed on a top/front side of a vehicle to capture real time image of one of sheet or poster comprising of printed and handwritten characters and symbols;

an input unit connected to the photographic camera to acquire the real time captured image;

a pre-processing unit to detect a character and symbol region from the real time captured image;

a classification unit equipped with at least two channel neural network based on CNN (Convolutional Neural Network) and LSTM (Long- and Short-Term Memory Network) to separate the character and symbol region on a character-by-character basis and recognize the characters and symbols on character-by-character basis in separated regions and generate one or more character recognition and symbol recognition result candidates for each character and symbol;

a central processing unit coupled to the classification unit to receive the candidates and calculate weights for transitions to the candidates thereby generate one of a first character string transition data or a first symbol string transition data based on a set of the candidates and the weights, wherein consecutively perform state transitions based one of the first character string transition data or first symbol string transition

data and collect the weights in each state transition to calculate a cumulative weight for each state transition for generating one or more state transition results signal based on the cumulative weight; and

a control unit to receive the generated one or more state transition results signal to detect one or both of the printed and handwritten characters and symbols thereby display the detected information on a display unit and play the detected information on a speaker to alert a rider.

2. The system of claim 1, wherein the weights are revised on each of the candidates character size.
3. The system of claim 1, wherein the generated first character string transition data and first symbol string transition data comprises a first epsilon transition from an initial state of a character and symbol string transition to the candidate, a second epsilon transition from the candidate to a final state of the character and symbol string transition, and a third epsilon transition for skipping the candidate on a character-by-character basis.
4. The system of claim 1, wherein the separation of the character and symbol region is performed on at least two step upon deploying the at least two channel neural network based on CNN and LSTM to avoid any error.
5. The system of claim 1, wherein the output of both of the at least two channel neural network is compared and in case of any difference the separation of the character and symbol region is repeated to eliminate the error.
6. The system of claim 1, wherein the detected information is displayed and played to alert the rider about the instructions provided for the riders on the bank of the road to avoid accidents.
7. The system of claim 1, wherein the field of view of the photographic camera preferably ranges from 80° to 140°, which is optionally increased by deploying more cameras or camera with higher field of view.
8. The system of claim 1, wherein the pre-processing unit further comprises removal of margin, rule-line, noise and skew correction.
9. The system of claim 1, wherein a cloud server wirelessly connected to the control unit through a communication module to receive and store the detected information in multiple formats including images, text, and audio.

10. The system of claim 1, wherein the weights are calculated by taking character string transition data or the first symbol string transition data of pre-stored characters and symbols registered in a language database.

## Patent History

**Publication number:** 20220335739

**Type:** Application

**Filed:** Jun 28, 2022

**Publication Date:** Oct 20, 2022

**Inventors:** Surbhi Bhatia (Hofuf), Mohammad Tabrez Quasim (Bisha), Shadab Alam (Jizan), Mohammad Ayoub Khan (Bisha), Pankaj Dadheech (Jaipur), Swati Chandna (Heidelberg), Riyaz Sheikh Abdullah (Jizan), Gaurav Indra (Delhi), D. Shanthi (Hyderabad), Amit Kumar Tyagi (Chennai)

**Application Number:** 17/809,443

## Classifications

**International Classification:** G06V 30/148 (20060101); G06V 20/62 (20060101); G06V 20/56 (20060101); G06V 10/82 (20060101); B60R 11/04 (20060101);

REPUBLIC OF SOUTH AFRICA		REGISTER OF PATENTS		PATENTS ACT, 1978	
Official application No.		Lodging date: Provisional		Acceptance date	
21	01 <b>2022/07879</b>	22		47	2022/09/16
International classification		Lodging date: Complete		Granted date	
51	C05F	23	2022/07/15		2022/09/28
71	Full name(s) of applicant(s)/Patentee(s):				
	<p>Dr. Pankaj Dadheech Associate Professor, Department of Computer Science &amp; Engineering (NBA Accredited), Swami Keshvanand Institute of Technology, Management &amp; Gramothan (SKIT), Jaipur, Rajasthan, 302017, India</p> <p>Dr. Chandra Mohan Assistant Professor, Department of Chemistry, SBAS K R Mangalam University, Gurugram, Haryana, 122103, India</p> <p>Dr. Anoop Yadav Skill Assistant Professor, Department of Environmental Studies, Shri Vishwakarma Skill University, Plot No 147, Sector-44, Gurugram, Haryana, 122003, India</p> <p>Dr. Smriti Tandon Associate professor, Department of Management Studies, Graphic Era Deemed to be University (NAAC accredited), Dehradun, Uttarakhand, 248002, India</p> <p>Dr. Romica Bhat Associate Professor, Amity School of Communication, Amity University Kolkata, Major Arterial Road, Action Area 2, Kolkata, West Bengal, 700135, India</p> <p>Harmeet Kaur Kochhar Assistant Professor, University Institute of Media studies Chandigarh University, NH95, Chandigarh-Ludhiana Highway, Gharuan, Mohali, Punjab, 140413, India</p> <p>Dr. K Ramakrishna Professor (Retired), Department of Chemistry, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, 530045, India</p> <p>Dr. Suman Kuman Associate Professor, Department of Journalism &amp; Mass Communication, Faculty of Media Studies &amp; Humanities, Manav Rachna International Institute of Research &amp; Studies, Sector-43, Surajkund-Badkhal Road, Aravalli Hills, Faridabad, Haryana, 121004, India</p> <p>Dr. Poonam Singhal Dr. Poonam Singhal, Telangana, 500028, India</p> <p>Dr. Tenzin Wangpo Associate Professor, Department of Pharmacy, IEC University, Plot No: 7 &amp; 10, Atal Shiksha Nagar Kallujhanda, Nanak Pura, Pinjore-Nalagarh Highway, Solan, Himachal Pradesh, 174103, India</p> <p>Prof. Shital Gujarathi Assistant Professor, Savitribai Phule Pune University, Pune, Maharashtra, 422005, India</p> <p>Dr. Preeti Kulkarni Director, Savitribai Phule Pune University, Pune, Maharashtra, 422005, India</p> <p>Dr. M. G. Sumithra Professor &amp; Head / BME, Director of Research and Development, Dr. N. G. P. Institute of Technology, Kalapatti, Coimbatore, Tamil Nadu, 641048, India</p> <p>Dr. Pawan Kumar Rose Assistant Professor, Department of Energy and Environmental Sciences, Chaudhary Devi Lal University, Sirsa, Haryana, 125055, India</p> <p>Prof. Ramesh Chandra Panda Chief Scientist, We Grow, Khordha, Bhubaneswar, Odisha, 751001, India</p>				
71	Applicant substituted:			Date registered	
71	Assignee(s):			Date registered	
72	Full name(s) of inventor(s):				
	<p>Dr. Pankaj Dadheech Dr. Chandra Mohan Dr. Anoop Yadav Dr. Smriti Tandon Dr. Romica Bhat Harmeet Kaur Kochhar Dr. K Ramakrishna Dr. Suman Kumari Dr. Poonam Singhal Dr. Tenzin Wangpo Prof. Shital Gujarathi Dr. Preeti Kulkarni Dr. M. G. Sumithra Dr. Pawan Kumar Rose Prof. Ramesh Chandra Panda</p>				
Priority claimed:		Country	Number	Date	



54	Title of invention	
<b>A NOVEL SYSTEM FOR WIND-POWERED IOT BASED SUSTAINABLE ORGANIC COMPOST MACHINE</b>		
Address of applicant(s)/patentee(s):		
Associate Professor, Department of Computer Science & Engineering (NBA Accredited), Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Jaipur, Rajasthan, 302017 INDIA		
Assistant Professor, Department of Chemistry, SBAS K R Mangalam University, Gurugram, Haryana, 122103 INDIA		
Skill Assistant Professor, Department of Environmental Studies, Shri Vishwakarma Skill University, Plot No 147, Sector-44, Gurugram, Haryana, 122003 INDIA		
Associate professor, Department of Management Studies, Graphic Era Deemed to be University (NAAC accredited), Dehradun, Uttarakhand, 248002 INDIA		
Associate Professor, Amity School of Communication, Amity University Kolkata, Major Arterial Road, Action Area 2, Kolkata, West Bengal, 700135 INDIA		
Assistant Professor, University Institute of Media studies Chandigarh University, NH95, Chandigarh-Ludhiana Highway, Gharuan, Mohali, Punjab, 140413 INDIA		
Professor (Retired), Department of Chemistry, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, 530045 INDIA		
Associate Professor, Department of Journalism & Mass Communication, Faculty of Media Studies & Humanities, Manav Rachna International Institute of Research & Studies, Sector-43, Surajkund-Badhkal Road, Aravalli Hills, Faridabad, Haryana, 121004 INDIA		
Dr. Poonam Singhal, Telangana, 500028 INDIA		
Associate Professor, Department of Pharmacy, IEC University, Plot No: 7 & 10, Atal Shiksha Nagar Katlujhanda, Nanak Pura, Pinjore-Nalagarh Highway, Solan, Himachal Pradesh, 174103 INDIA		
Assistant Professor, Savitribai Phule Pune University, Pune, Maharashtra, 422005 INDIA		
Director, Savitribai Phule Pune University, Pune, Maharashtra, 422005 INDIA		
Professor & Head / BME, Director of Research and Development, Dr. N. G. P. Institute of Technology, Kalapatti, Coimbatore, Tamil Nadu, 641048 INDIA		
Assistant Professor, Department of Energy and Environmental Sciences, Chaudhary Devi Lal University, Sirsa, Haryana, 125055 INDIA		
Chief Scientist, We Grow, Khordha, Bhubaneswar, Odisha, 751001 INDIA		
74	Address for service	
Wolmarans and Susan Inc. 337 Surrey Avenue, Randburg, 2194 SOUTH AFRICA Reference No.		
61	Patent of addition No.	Date of any change
Fresh application based on.		Date of any change

RENEWAL SHEET

Year	Payment Date	Receipt Number	Amount
------	--------------	----------------	--------

HISTDRY SHEET

Date entry made	Description
2022-07-18	Request for the acceptance of a Patent electronically filed on 15/7/2022. numbered 2022/07879
2022-07-18	Proof reading performed automatically
2022-09-16	Application accepted on 16/09/2022.
2022-09-29	Patent advertised on 28-09-2022.
2022-09-29	Patent granted on 28-09-2022.

## **A NOVEL SYSTEM FOR WIND-POWERED IOT BASED SUSTAINABLE ORGANIC COMPOST MACHINE**

### **FIELD OF INVENTION**

The present invention relates to a field of organic farming more particularly, to a novel system for wind-powered IOT based sustainable organic compost machine

### **BACKGROUND OF THE INVENTION**

In a developing economy where the strain on agriculture production is great due to a huge population, sustainable organic farming is an urgent necessity. Utilization of inorganic fertilizers rises in tandem with demand for agricultural productivity increasing the use of compost and artificial fertilizers, which deteriorates the soil fertility on the long run.

In recent years, the government and policymakers have put more emphasis on organic composting as a way to deal with waste. India makes about 1.5 million tonnes of solid waste every day, and the amount that can be broken down ranges from 30 to 70 percent in different cities. Compost has two uses: first, it develops fertiliser, and second, it manages waste to improve soil fertility. The biological and physico-chemical characteristics of the soil are improved by composting by using plants and organic waste that is rich in nutrient. In order to replenish the nutrient-depleted soil, wet waste plays a vital role in replacing chemical fertilizer.

In India, the Wind Power Development program was introduced in the final year of the Sixth Five Year Plan (1983–1984). Following that, the first wind energy facilities were built in Ratnagiri (Maharashtra), Okha (Gujarat), and Tuticorin (Tamil Nadu). With a total installed wind power capacity of 37,669 MW (February 2020), India has surpassed China to rank fourth in the world. With a capacity of 9231.77 MW as of the end of October 2019, Tamil Nadu is thought to be the highest producer, followed by Gujarat (7203.77 MW), Maharashtra (4794.13 MW), Karnataka (4753.4 MW), and Rajasthan (4753.4 MW) (4299.73 MW). The largest wind farms with more than 500MW of production include Brahmanvel Wind Farm

(528 MW) in Maharashtra, Jaisalmer Wind Park (1064 MW) in Rajasthan, and Muppandal Wind Farm (1500 MW) in Maharashtra (4794.13 MW), Karnataka (4753.4 MW) and Rajasthan (4299.73 MW). The major wind power plants with greater than 500MW production are Muppandal Wind Farm. Due to their physical position, northern states have no power generation whatsoever.

A variety of Alfa Therm Composting machines, including fully automated, semi-automated, and user-friendly machines, are offered. For the creation of compost, they use food scraps or other organic waste. Several hotels employ these devices for waste management and to make compost, which is utilized in gardens or organic farming.

A tractor-mounted compost aerator developed by Mr. Gurmail Singh Dhonsi. The Union Minister aided the innovation in 2011, and it also earned the competition's innovation prize in the sixth biennial competition that year. Under NIF's MVIF plan, the innovation is supported.

Excel Industries Private Limited, based in Mumbai, invented the Bioneer. Compost made from organic waste may now be made within only 24 hours thanks to an innovation. In-vessel composters, a pioneering, ground-breaking technology, are offered for sale.

The delivery of fertiliser in India operates on three levels which is categorized as the Government agencies, the cooperative agencies, the private agencies. The cooperative societies and the state agricultural department sold chemical fertiliser up until the end of the first five-year plan. The government allowed licensed production facilities to sell 70% of the fertilisers on their own in the 1960s, with public agencies selling the other 30%. Input for agricultural production was promoted by the National Development Council in 1956. The National Development Council urged cooperative groups to provide the input for agriculture in 1956. In order to handle the fertiliser distribution route, cooperative societies received government support in the form of funding for the building of inventory buildings, staff management, and other costs.

To help different marketing cooperatives in the nation secure working money from the RBI, SBI, and commercial banks, Rs. 12.36 crores were given to them in the fourth five-year plan. In India most of this land is forest, but 1.8 million acres can be used for farming. But it is expected that the global market for organic fertilisers will grow at a CAGR of 9.1% from 2018 to 2023, when it will be worth USD 4,606.7 million.

Under the "National Mission for Sustainable Agriculture (NMSA)" Capital Investment Subsidy Scheme (CISS), the government is helping to make natural fertiliser from bio waste. State government offices can receive funding at a rate of up to one hundred ninety lakh rupees per unit under this plan, while individuals and private entities can receive funding at a rate of up to 63 lakh rupees per unit for capital projects. To be used instead of agro-waste compost or mechanical fruit harvesting, and funded by NABARD 3000 TPA production unit capacity. The usage of natural or bio compost is empowered by government through different plans. The government offers a variety of assistance programs that provide funding for the development of use of organic fertilisers such as National Project on Organic Farming, Paramparagat Krishi Vikas Yojana (PKVY), Mission for Integrated Development of Horticulture, National Project on Management of Soil Health and Fertility (NPMSHF) and Rashtriya Krishi Vikas Yojana (RKVY).

Composting organic materials can be done in a number of ways:

Indoor Composting: Indoor Composting takes lot of time for composting.

Windrow composting: Windrow a land demanding composting process and also need costly blower for process.

Vermi composting: Vermicomposting, makes use of worm to produce a nutrient-rich organic fertiliser. Hence there is need to design a system for wind-powered IoT based sustainable organic compost machine.

## **OBJECTS OF THE INVENTION**

Some of the objects of the present disclosure, which at least one embodiment herein satisfies, are as follows.

It is an object of the present disclosure to ameliorate one or more problems of the prior art or to at least provide a useful alternative

An object of the present disclosure is to provide novel system for wind-powered IOT based sustainable organic compost machine

Another object of the present disclosure is to provide novel system for wind-powered IOT based sustainable organic compost machine that will analyze the distribution of wind power across the states of India.

Still another object of the present to provide novel system for wind-powered IOT based sustainable organic compost machine that will estimate the growth of composting in India with regard to policy consequences.

Another object of the present disclosure is to provide novel system that will understand the mechanism for wind-powered IOT based sustainable organic compost machine.

Still another object of the present disclosure is to provide novel system for wind-powered IOT based sustainable organic compost machine for highlighting its benefits.

Other objects and advantages of the present disclosure will be more apparent from the following description, which is not intended to limit the scope of the present disclosure.

## **SUMMARY OF THE INVENTION**

The following presents a simplified summary of the invention in order to provide a basic understanding of some aspects of the invention. This summary is not an extensive overview of the present invention. It is not intended to identify the key/critical elements of the invention or to delineate the scope of the invention. Its sole purpose is to present some concept of the invention in a simplified form as a

prelude to a more detailed description of the invention presented later.

The present invention is generally directed to provide novel system for wind-powered IOT based sustainable organic compost machine.

An embodiment of the present invention is to provide novel system for wind-powered IOT based sustainable organic compost machine. The system (100) comprises a controller unit, wind power unit, power supply unit and compost machine unit. A controller unit is connected with wind power. A mixer unit connected with DC motor used to mix browns and shredded garbage. The mixer unit is connected with converter unit through wind powered heater configured to eliminate moisture from compost. After converter unit the compost is allowed to cool for 6 to 8 days .Further an air discharger unit configured to repeatedly pump out gas from the organic waste. A power supply unit is connected with windmill configured to run DC motor, heating chamber, IoT integration, exhausts both in and out direction.

Another embodiment of the invention is to maintain the soil's nutrients and natural fertility by utilizing sustainable organic compost machine. Composting is a sustainable agriculture production process that keeps the soil's minerals and natural fertility intact while making use of organic matter. Composting employs nutrient-rich plant material and organic waste to improve soil structure and function on both a biological and a physical level. The land used for farming gains naturally from the ongoing practice of sustainable agriculture based on organic composition. Because of this, the soil's qualities have improved.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig 1: illustrates novel system for wind-powered IOT based sustainable organic compost machine, in accordance with an embodiment of the present invention.

Fig 2: illustrates the BreezSlim SLM70 70 CFM Exhaust Fan, in accordance with an embodiment of the present invention.

## DETAILED DESCRIPTION OF THE INVENTION

The following description is of exemplary embodiments only and is not intended to limit the scope, applicability or configuration of the invention in any way. Rather, the following description provides a convenient illustration for implementing exemplary embodiments of the invention. Various changes to the described embodiments may be made in the function and arrangement of the elements described without departing from the scope of the invention.

Fig 1: illustrates a novel system (100) for wind-powered IOT based sustainable organic compost machine, in accordance with an embodiment of the present invention. . The system (100) comprises a controller unit, wind powered unit, power supply unit and compost machine unit. A controller unit analyzes data from plurality of sensors installed on the wind power and adjusts its operation accordingly. The wind powered unit is connected with controller unit configure to generate electricity from wind. The wind powered unit is connected compost machine unit. A compost machine unit configures to do stirring operation on shredded trash and browns with the help of dc motor. A compost machine unit can be changed into a heating chamber (with a temperature of 70 degrees) by using a wind-powered heater. It can then remove any moisture from the compost in two days. The finished compost is then left to cool for 6 to 8 days. From 120 kilo units, it is possible to make 70 kilos of ready-to-use compost. This cost-effective machine will be as good as any other compost machine on the market.

Fig 2: illustrates the BreezSlim SLM70 70 CFM Exhaust Fan, in accordance with an embodiment of the present invention. BreezSlim SLM70 70 CFM exhaust fan is used to pump out the gas that is constantly being made by organic compost. Windmill generates alternate current, which is changed to direct current (DC) by a battery and an inverter. This allows a DC motor, heating chamber, IoT integration, and exhaust to go both in and out.

In accordance with an embodiment of the present invention, the system (100) includes:

Increase Agricultural Productivity: Organic farming with the use of organic waste can be a big part of India's plan to raise its per capita income.



Increase in Farm Income: The organic compost machine would reduce and reuse biodegradable farm waste. It would also increase farm productivity by lowering the marginal cost of farm products and boosting farm income by lowering farmers' debt.

Reduction in Carbon Emission: Implementing an organic composting machine would help green farming and improve soil and land fertility while limiting the use of chemical fertilisers. If the soil's fertility and health got much better, greenhouse gas emissions would go down and the water table would get higher. This would lead to sustainable growth in agriculture.

Cost-Efficient and Technologically Integrated Organic Compost Machine: Organic Compost Machines can help make farming more sustainable. So, the innovative product has a huge market potential and can give its customers something they can't get anywhere else.

Agriculture practices that are resilient and sustainable are the only way to keep the ecosystem from being upset and to keep growth and prices stable in the economy and world market. Soil fertility goes up when organic fertilisers are used. The fertility of the soil increases the amount of food that can be grown on a farm. This leads to more money for the farmers and less debt. So, there is a huge market for the product.

The system being developed is one that is efficient with respect to cost.

The organic nutrients added to the soil by composting boost crop yields.

The compost will be marketed and sold in areas with a high potential for the use of wind power.

Farmers are the primary target market, thus the compost will be sold either directly to farmers or through agricultural supply retailers in the area.

Initial product promotion will center on giving away free samples.

Farmers' continued feedback on the product's efficacy is essential to its

development.

Websites showcasing the product's use and benefits to customers will be used for marketing purposes.

While considerable emphasis has been placed herein on the specific features of the preferred embodiment, it will be appreciated that many additional features can be added and that many changes can be made in the preferred embodiment without departing from the principles of the disclosure. These and other changes in the preferred embodiment of the disclosure will be apparent to those skilled in the art from the disclosure herein, whereby it is to be distinctly understood that the foregoing descriptive matter is to be interpreted merely as illustrative of the disclosure and not as a limitation.

**CLAIMS:**

1. A system (100) for wind-powered IOT based sustainable organic compost machine comprising:  
a controller unit connected with wind powered unit configured to analyze data from plurality of sensors;  
an organic compost machine unit connected with a wind powered unit comprising :a mixer unit connected with DC motor configured to mix browns and shredded garbage; a converter unit connected with wind powered heater configured to eliminate moisture from compost; an air discharger unit configured to repeatedly pump out gas made of organic waste;  
a power supply unit connected with windmill configured to run DC motor, heating chamber, IoT integration, exhausts both in and out direction.
2. The system (100) as claimed in claim 1, wherein kilos of compost can be prepared from biodegradable waste; therefore, the compost is allowed to cool for some days.
3. The system (100) as claimed in claim 1, wherein BreezSlim SLM70 70 CFM exhaust fan is used for air discharging.
4. The system (100) as claimed in claim 1, wherein the productivity of the system (100) increases within 8 to 10 days of process and it is efficient method in terms of cost.

Signed on this 15<sup>th</sup> day of JULY 2022



---

**Leon Pierre Susan**

Patent attorney for the applicant

DR. FANKAJ DADHEECH; DR. CHANERA MOHAN  
DR. ANOOP YADAV; DR. SMRITI TANDON  
DR. ROMICA BHAT; HARMEET KAUR KOCHHAR  
DR. K RAMAKRISHNA; DR. SUMAN KUMARI  
DR. POONAM SINGHAL; DR. TENZIN WANGPO  
PROF. SHITAL GUJARATHI; DR. PREETI KULKARNI  
DR. M. G. SUMITHRA; DR. PAWAN KUMAR ROSE  
PROF. RAMESH CHANDRA PANDA

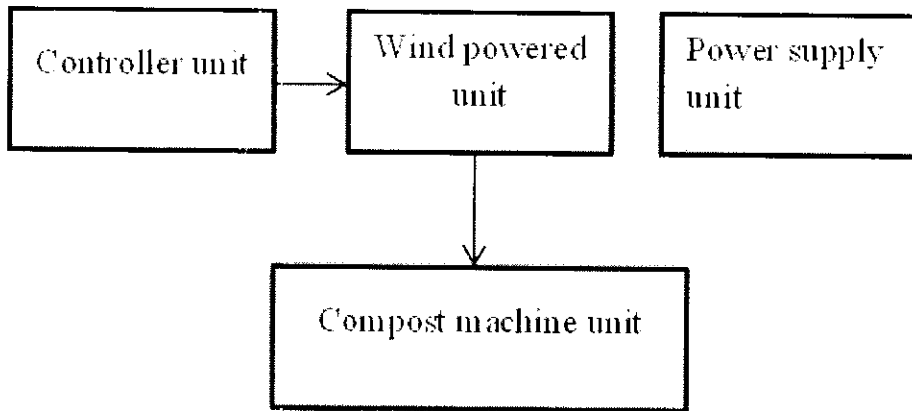


Figure 1

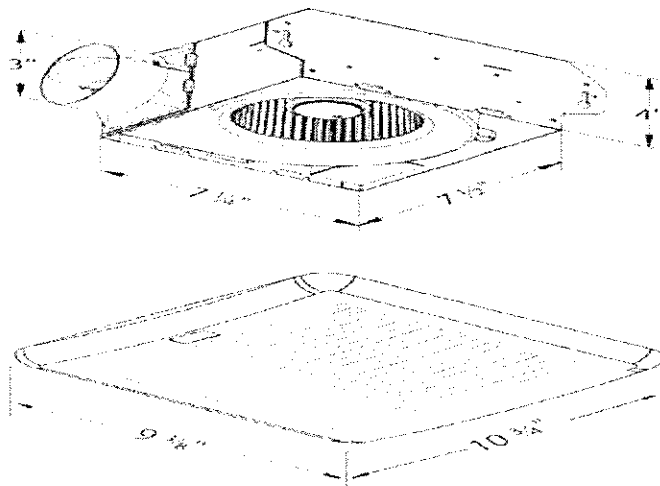
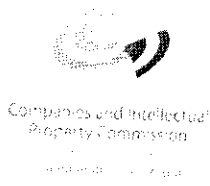


Figure 2

Leon Pierre Susan  
Patent attorney for the applicant(s)



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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/08/2022

(21) Application No.202211048797 A

(43) Publication Date : 02/09/2022

(54) Title of the invention : A MULTI-LAYER NEURAL NETWORK BASED SYSTEM FOR VEHICLE-TO EVERYTHING COMMUNICATION IN 5G NETWORK

(51) International classification :H04W0004400000, H04W0084000000, H04W0072040000, H04W0084220000, H04W0040040000  
(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

(71)Name of Applicant :

1)Dr. Sanjay Gour

Address of Applicant :Professor & Head, Department of Computer Science & Engineering, Jaipur Engineering College & Research Centre, Jaipur. Pin: -302022 Jaipur -----

2)Ms. Rekha Kushwaha

3)Ms. Bhawna Kalra

4)Dr. Jaivardhan

5)Ms. Jeba Nega Chelta

6)Mr. Chetan Mali

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Dr. Sanjay Gour

Address of Applicant :Professor & Head, Department of Computer Science & Engineering, Jaipur Engineering College & Research Centre, Jaipur. Pin: -302022 Jaipur -----

2)Ms. Rekha Kushwaha

Address of Applicant :Software Engineer, Computer Engineering, Appcino pvt. Ltd., Jaipur. Pin: -302022 Jaipur -----

3)Ms. Bhawna Kalra

Address of Applicant :Assistant Professor, Department of Electronics & Communication, Jaipur Engineering College & Research Centre, Jaipur, Pin: -302022 Jaipur -----

4)Dr. Jaivardhan

Address of Applicant :Associate Professor, School of Electronics Engineering, VIT-AP University, Andhra Pradesh Guntur -----

5)Ms. Jeba Nega Chelta

Address of Applicant :Assistant Professor, Computer Science & Engineering, Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur, Rajasthan Jaipur -----

6)Mr. Chetan Mali

Address of Applicant :Guest Faculty, Department of Computer Science, Mohanlaj Sukhadia University, Udaipur Udaipur -----

(57) Abstract :

The present invention discloses a multi-layer neural network-based system for vehicle-to-everything communication in 5G network. The plurality of means for connecting vehicles to the Internet through a multi-technology network device, a mobile router that is able to form a mesh network of vehicles connected to the infrastructure; wherein the vehicles connect between themselves to perform Wireless Access in Vehicular Environments through cellular or wireless connections. Further, a multi-layer neural network (MLNN)-based Resource Allocation and sharing approach for device to device-based Vehicle-to-everything communications is provided. In addition, the numerical analysis is presented to approve the effectiveness of our proposed solution in terms of network sum rate, packet reception ratio, resource utilization ratio, and time complexity.

No. of Pages : 20 No. of Claims : 9



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#### Application Details

APPLICATION NUMBER	202211048797
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	26/08/2022
APPLICANT NAME	1 . Dr. Sanjay Gour 2 . Ms. Rekha Kushwaha 3 . Ms. Bhawna Kalra 4 . Dr. Jaivardhan 5 . Ms. Jeba Nega Chelta 6 . Mr. Chetan Mali
TITLE OF INVENTION	"A MULTI-LAYER NEURAL NETWORK BASED SYSTEM FOR VEHICLE-TO EVERYTHING COMMUNICATION IN 5G NETWORK"
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	sanjay.since@gmail.com
ADDITIONAL-EMAIL (As Per Record)	iprsince2014@hotmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	02/09/2022

#### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021105181

The Commissioner of Patents has granted the above patent on 20 April 2022, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Gaurav Indra of Assistant Professor, Department of Information Technology, Indira Gandhi Delhi Technical University For Women, Kashmere Gate New Delhi 110006 India

Divyanshu Sinha of Computer Science Engineer, Sarita Vihar New Delhi 110076 India

Parvathy M. of Associate Professor, Department of ECE, SCMS School of Engineering and Technology Kerala 683576 India

Ravinder M of Assistant Professor, Computer Science & Engineering, Indira Gandhi Delhi Technical University For Women, Madrasa Road, Opposite St. James Church Kashmere Gate, Delhi 110006 India

Sreenivas Mekala of Associate Professor, Department of IT, Sreenidhi Institute of Science and Technology, Yamnampet, Ghatkesar, Hyderabad Telangana 501301 India

Pankaj Dadheech of Associate Professor, Department of Computer Science & Engineering, Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Jagatpura, Jaipur Rajasthan 302017 India

Arun Kumar Dubey of Assistant Professor, Department of Information Technology, Bharati Vidyapeeth's College of Engineering New Delhi 110063 India

Anurag Agarwal of Assistant Professor, Department of Information Technology, Bharati Vidyapeeth's College of Engineering, A-4 Paschim Vihar New Delhi 110063 India

Neetu Singh of Assistant Professor, Department of Information Technology, Bharati Vidyapeeth's College of Engineering, A-4 Paschim Vihar New Delhi 110063 India

Rashmi Mishra of Assistant Professor, Department of Electrical & Electronics Engineering, Bhitai Institute of Technology, Raipur, Kendri, Naya Raipur Chhattisgarh 492013 India

K.Vetrivel Kumar of Head of the Department, Department of Mechanical Engineering, Dhanalakshmi Srinivasan College of Engineering, Coimbatore Coimbatore Tamilnadu 641105 India

V Nagajothi of Principal, Shree Chandra Prabhu Jain College, Minjur Chennai 601203 India

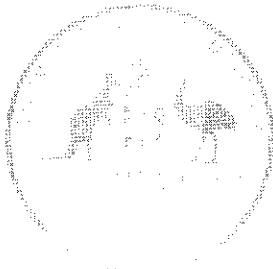
Pavithra G. of Associate Professor, Electronics & Communication Engg Dept., Dayananda Sagar College of Engg. (DSCE) Bangalore Karnataka 560078 India

T.C. Manjunath of Professor & Head of the Dept, Electronics & Comm. Engg Dept. (ECE) Dayananda Sagar College of Engg. (DSCE) Bangalore 560078 India

**Title of invention:**

INTELLIGENT SYSTEM & METHOD FOR HOME SURVEILLANCE WITH WARNING OF ROBBER ACTIVITIES USING IOT & ARTIFICIAL INTELLIGENCE APPROACH

**Name of inventor(s):**



Dated this 20<sup>th</sup> day of April 2022

Commissioner of Patents



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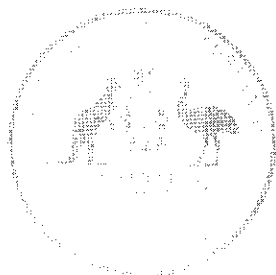
**Patent number:** 2021105181

Indra, Gaurav; Sinha, Divyanshu; M., Parvathy; M., Ravinder; Mekala, Sreenivas; Dadheech, Pankaj; Dubey, Arun Kumar; Agarwal, Anurag; Singh, Neetu; Mishra, Rashmi; Kumar, K. Vetrivel; Nagajothi, V.; G., Pavithra and Manjunath, T. C.

**Term of Patent:**

Eight years from 9 August 2021

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### Application Details

APPLICATION NUMBER	202111028832
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	27/06/2021
APPLICANT NAME	1 . Dr.Anurag Aeron 2 . Mr.Vijaykumar R.Urkude 3 . Dr.Venna Kusuma Kumari 4 . Dr.Shubhi Jain 5 . Mr.Sandeep Srivastava 6 . Mr. K.T.P.S Kumar 7 . Dr.Sushma Jaiswal 8 . Mr.Tarun Jaiswal 9 . Dr.Rabinarayan Satpathy 10 . Dr.Gouse Baig Mohammad
TITLE OF INVENTION	IMAGE CONTRAST ENHANCEMENT SYSTEM WITH FUZZY BASED THRESHOLD HISTOGRAM EQUALIZATION
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	03mrmanoj2@gmail.com
ADDITIONAL-EMAIL (As Per Record)	03mrmanoj2@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	23/07/2021

### Application Status



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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021105548

The Commissioner of Patents has granted the above patent on 3 November 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Pooja Jain of Swami Keshvanand Institute of Technology, Management and Gramothan Jaipur Rajasthan India  
Akash Saxena of Swami Keshvanand Institute of Technology, Management and Gramothan Jaipur Rajasthan India  
Ankit Sharma of University of Engineering & Management Jaipur Rajasthan India  
Bhanu Soni of University of Engineering & Management Jaipur Rajasthan India  
Shalini Shekhawat of Swami Keshvanand Institute of Technology, Management and Gramothan Jaipur Rajasthan India

**Title of invention:**

Multi Agent Systems for Intelligent bidding price selection for profit accumulation.

**Name of inventor(s):**

Jain, Pooja; Saxena, Akash; Sharma, Ankit; Soni, Bhanu and Shekhawat, Shalini

**Term of Patent:**

Eight years from 15 August 2021

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Dated this 3<sup>rd</sup> day of November 2021

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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021101516

The Commissioner of Patents has granted the above patent on 19 May 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Arun Kumar Rana of Assistant Professor, Panipat of Engineering and Technology, Samalkha Haryana 132102 India

Nirav Karelia of Assistant Professor, Department of Electrical Engineering, School of Technology Pandit Deendayal Petroleum University Gandhinagar, Gujrat 382007 India

Tarun Naruka of Associate Professor, Department of Electrical Engineering, SKIT Jaipur 302017 India

Vipin Chandra Pal of Assistant Professor, Department of, Electronics and Instrumentation, Engineering, National Institute of Technology, Silchar, Cachar Assam 788010 India

Souvik Ganguli of Assistant Professor, Department of, Electrical and Instrumentation, Engineering, Thapar Institute of Engineering and Technology Patiala, Punjab 147004 India

Anurag Sohane of Research Scholar, Department of, Electrical and Instrumentation, Engineering, Thapar Institute of Engineering and Technology Patiala, Punjab 147004 India

**Title of invention:**

A SYSTEM FOR MOVEMENT OF AUTONOMOUS VEHICLE AND A METHOD THEREOF

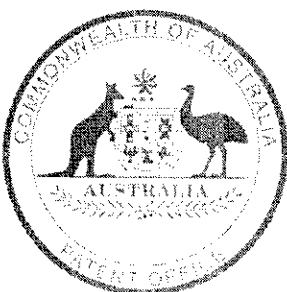
**Name of inventor(s):**

Rana, Arun Kumar; Karelia, Nirav; Naruka, Tarun; Pal, Vipin Chandra; Ganguli, Souvik and Sohane, Anurag

**Term of Patent:**

Eight years from 25 March 2021

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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021100596

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**Name and address of patentee(s):**

A. K. Sharma of 133 BASANT VIHAR KOTA, RAJASTHAN 324009 India

Kamal Upreti of 6A/786, MANDAWALI NEAR PRIMARY SCHOOL NEW DELHI 110092 India

Sanjay Srivastava of F-4, 1/10 ASHIRWAD APARTMENTS-2, SEC-5, RAJENDRA NAGAR, SAHIBABAD GHAZIABAD 201005 UP India

Binu Kuriakose Vargis of 794/A, KIZHAKEDATH HOUSE, ITC ROAD, NEAR CHURCH, MANARCAD KOTTAYAM 686019, KERALA India

Jaspreet Singh of ASSOCIATE PROFESSOR, CSE DEPARTMENT, GD GOENKA UNIVERSITY, GURUGRAM, BL-122, SHALIMAR BAGH DELHI-110088 India

Pooja Choudhary of ASSISTANT PROFESSOR, DEPT OF ECE, SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN JAIPUR 302017 RAJASTHAN India

Nishant Kumar of ASSISTANT PROFESSOR, AMITY SCHOOL OF BUSINESS, AMITY UNIVER. SECTOR 125, NOIDA 201301 UP India

Praveen Kumar Jain of PROFESSOR, DEPT OF ECE, SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN JAIPUR 302017 RAJASTHAN India

Rituraj Jain of LECTURER, DEPARTMENT OF ELECTRICAL, AND COMPUTER ENGINEERING, WOLLEGA UNIVER NEKEMTE 395, OROMIA Ethiopia

Bipin Pandey of ASSISTANT PROFESSOR & HOD CSE DEPARTMENT, DRONACHARYA GROUP OF INSTITUTIONS, GREATER NOIDA, UTTAR PRADESH LUCKNOW 226021 India

**Title of invention:**

INTELLIGENT ROBOTIC SYSTEM TO AUTOMATE SWAB TEST TO DETECT COVID-19 DISEASE

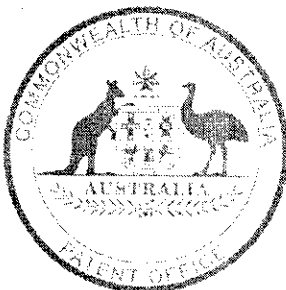
**Name of inventor(s):**

Sharma, A. K.; Upreti, Kamal; Srivastava, Sanjay; Vargis, Binu Kuriakose; Singh, Jaspreet; Choudhary, Pooja; Kumar, Nishant; Jain, Praveen Kumar; Jain, Rituraj and Pandey, Bipin

**Term of Patent:**

Eight years from 30 January 2021

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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021100560

The Commissioner of Patents has granted the above patent on 31 March 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

N. M. BALAMURUGAN of Sri Venkateswara College of Engineering, Pennalur, Chennai - Bengaluru Highways Sriperumbudur Tamil Nadu 602117 India

M. Adimoolam of Saveetha School of Engineering, Saveetha Nagar, Thandalam Chennai Tamil Nadu, 602 105 India

C. Padmaja of Assistant Professor, G. Narayanamma, Institute of technology and Sciences, Shaikpet Rd, Ambedkar Nagar, Shaikpet Hyderabad, Telangana 500104 India

Surya Deo Choudhary of Noida Institute of Engineering & Tech., Vill+PO: Hirodih PS: Jainagar Koderma Jharkhand 825409 India

J. S. Binoj of Associate Professor, Dept. of Mechanical, Engineering, Sree Vidyanikethan, Engineering College (Autonomous) Tirupati Andhra Pradesh 517102 India

G. Shyni of Research Analyst, Edutancy Global Services Marthandam Tamilnadu 629165 India

A. Sagai Francis Britto of Associate Professor, Dept of Mechanical, Engineering, Rohini College of, Engineering and Technology Palkulam Tamil Nadu 629401 India

Shashikant . of School of Engineering, Electrical Engineering Department, BABU BANARASI DAS UNIVERSITY, LUCKNOW BBD City, Faizabad Road, Lucknow Uttar Pradesh 226028 India

Vikas Pandey of School of Engineering, Electrical Engineering Department, BABU BANARASI DAS UNIVERSITY, LUCKNOW BBD City, Faizabad Road, Lucknow Uttar Pradesh 226028 India

Ankit Agarwal of Swami Keshavanand Institute of, Technology, Management & Gramothan Jaipur Rajasthan 302017 India

**Title of invention:**

SMART WIRELESS CHARGING SYSTEM FOR IOT DEVICES IN HOME AUTOMATION

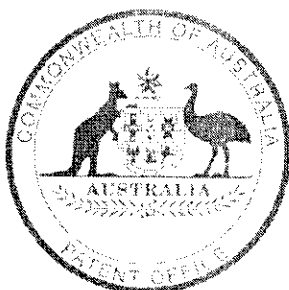
**Name of inventor(s):**

BALAMURUGAN, N. M.; Adimoolam, M.; Padmaja, C.; Choudhary, Surya Deo; Binoj, J. S.; Shyni, G.; Britto, A. Sagai Francis; Shashikant; Pandey, Vikas and Agarwal, Ankit

**Term of Patent:**

Eight years from 28 January 2021

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Dated this 31<sup>st</sup> day of March 2021

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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021100736

The Commissioner of Patents has granted the above patent on 7 April 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Yusuf Durachman of State Islamic University of Syarif, Hidayatullah Jakarta, Jalan Ir. H. Juand Ciputat Jakarta Indonesia

J. S. Binoj of Associate Professor, Department of, Mechanical Engineering, Sree Vidyanikethan, Engineering College (Autonomous) Tirupati Andhra Pradesh, 517102 India

Radhika Gautamkumar Deshmukh of Assistant Professor, Physics Department, Shri Shivaji College of Arts Commerce, and Science, Near Railway Station Akot file, Akola, Maharashtra 444001 India

Narayan Dattatraya Totewad of B. K. Birla College of Arts. Science &, Commerce (Autonomous), Kalayan, Affiliated to University of Mumbai Mumbai Maharashtra 421304 India

Ankit Agarwal of Swami Keshvanand Institute of Technology, Management and Gramothan, Ramnagar, Jagatpura Jaipur Rajasthan 302017 India

Pooja Choudhary of Swami Keshvanand Institute of Technology, Management and Gramothan, Ramnagar, Jagatpura Jaipur Rajasthan 302017 India

Praveen Kumar Jain of Swami Keshvanand Institute of Technology, Management and Gramothan, Ramnagar, Jagatpura Jaipur Rajasthan 302017 India

Satendra Singh of Vivekanand Global University, Jagatpura Jaipur Rajasthan 302017 India

Ram D. Isankar of Govt. Vidharbha Institute of Science &, Humanities, Amravati Affiliated to Sant, Gadge Baba University, Amravati University Amravati, Maharashtra India

Siddharth Anandrao Waghmare of Ghulam Nabhi Azad Arts, Commerce &, Science College, Barshitakli, District, Akola Amravati, Maharashtra 444401 India

**Title of invention:**

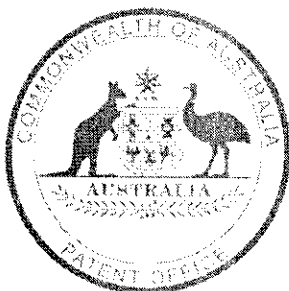
DEVELOPMENT OF SMART POWERING TECHNIQUE USING AI BASED SOLAR TRACKING SYSTEM

**Name of inventor(s):**

Durachman, Yusuf; Binoj, J. S.; Deshmukh, Radhika Gautamkumar; Totewad, Narayan Dattatraya; Agarwal, Ankit; Choudhary, Pooja; Jain, Praveen Kumar; Singh, Satendra; Isankar, Ram D. and Waghmare, Siddharth Anandrao

**Term of Patent:**

Eight years from 5 February 2021



Dated this 7<sup>th</sup> day of April 2021

Commissioner of Patents

PATENTS ACT 1990

This Australian Patents Register is the official record and should be referred to for the full details pertaining to this IP Right.





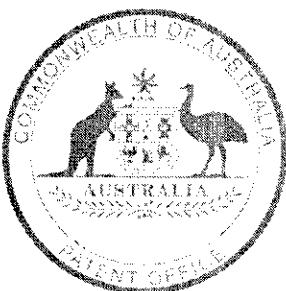
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IP Australia

# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021100736

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 7<sup>th</sup> day of April 2021

Commissioner of Patents

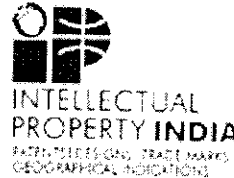
**PATENTS ACT 1990**

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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	202141018245
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	20/04/2021
APPLICANT NAME	<ol style="list-style-type: none"> <li>1 . Dr.E. Bhuvaneshwari,Chennai Institute of Technology</li> <li>2 . Dr.Hemalatha K L , Sri Krishna Institute of Technology</li> <li>3 . Manjula Vasant Kiresur,RNS Institute of technology</li> <li>4 . Yogesh Ramkisan Nagargoje,Shahu College of Engineering</li> <li>5 . Dr K Sundeep Kumar,SEA College of Engineering and Technology</li> <li>6 . Appasami G.,NIT Trichy</li> <li>7 . Harshal Nigam,Swami Keshvanand Institute of Technology, Management and Gramothan</li> <li>8 . Dr. Monika Mathur,Swami Keshvanand Institute of Technology, Management and Gramothan</li> <li>9 . Birendra Kumar Pandey,Swami Keshvanand Institute of Technology, Management and Gramothan</li> <li>10 . Kakirala Durga Bhavani,SRMIST</li> <li>11 . Dr R Ranjani,S V U College of Sciences</li> <li>12 . Mahesh Kumar A S,PES College of Engineering</li> </ol>
TITLE OF INVENTION	MACHINE LEARNING BASED BREAST CANCER DETECTION BY NEURO FUZZY LOGIC
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	ingeniouz1@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	20/04/2021
PUBLICATION DATE (U/S 11A)	30/04/2021



Australian Government

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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021104782

The Commissioner of Patents has granted the above patent on 22 September 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) of Ramnagar, Jagatpura Jaipur Rajasthan 302017 India

**Title of invention:**

Internet of Things (IoT) sensors-based system for child monitoring & method thereof

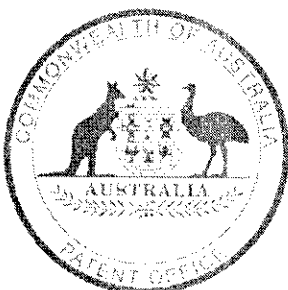
**Name of inventor(s):**

Jain, Praveen Kumar; Choudhary, Pooja; Agarwal, Ankit; Singh, Satendra; Zafar, Rukhsar; Arora, Swati; Saharia, Ankur; Janu, Neha; Choudhary, Manju and Jain, Pooja

**Term of Patent:**

Eight years from 1 August 2021

**NOTE:** This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 22<sup>nd</sup> day of September 2021

Commissioner of Patents

**PATENTS ACT 1990**

This Australian Patents Register is the official record and should be referred to for the full details pertaining to this IP Right.



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# CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021100287

The Commissioner of Patents has granted the above patent on 31 March 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

S.Pradeep Devaneyan of Principal, Sri Venkateshwaraa College of Engg, and Technology Ariyur Puducherry India

Santosh Kumar Sahoo of CVR College of Engineering (Autonomous), RR District Hyderabad Telangana 501510 India

Pankaj Dadheech of Associate Professor, Dept. of CS & Engg., Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) Jaipur Rajasthan 302017 India

A. Vijayalakshmi of Associate professor, Dept of ECE, Vels Institute of Science, Technology And Advanced Studies (VISTAS) Pallavaram Chennai 600117 India

Ebenezer Abishek. B of Assistant Professor, Dept. of ECE, Vels Institute Of Science, Technology And Advanced Studies (VISTAS) Pallavaram Chennai 600117 India

Lakshmanan. M of Professor, Dept. of E & CE, Galgotias College of Engg. & Tech. Greater Noida Uttar Pradesh India

Noor Mohammed. V of Associate Professor, School of Electronics Engineering, VIT University Vellore Tamilnadu India

Palanivelan. M of Professor, Dept. of E & CE, Rajalakshmi Engineering College Chennai Tamilnadu India

Razia Sultana W of Associate Professor, School of Electrical Engineering, VIT University Vellore India

Chinnapalli Likith kumar of Assistant professor, Department of EIE, SRM Institute of Science and Technology, SRM Nagar Kattankulathur Tamilnadu 603203 India

Sirigireddy Pravallika of Research Scholar, Department Of ECE, IIIT Sricity, Sricity Chittor district. Andhra pradesh India

K. Sasikala of Assistant professor, Dept. of E & EE, Vels Institute of Science, Technology & Advanced Studies (VISTAS) Chennai Tamil Nadu India

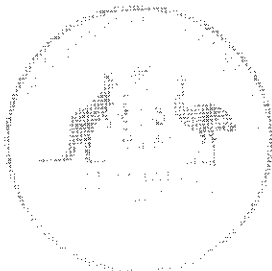
V. Sekar of Principal, Dhanalakshmi Srinivasan College Of Engg, and Technology Mamallapuram India

M. Monisha of Assistant Professor, Department of ECE, Vels Institute of Science, Technology & Advanced Studies (VISTAS) Chennai India

Vijayalakshmi. P of Assistant Professor, ECE Dept., Vels Institute of Science, Technology & Advanced Studies (VISTAS) Chennai India

Hitesh Joshi of Director, Bhagwan Arihant Institute of Technology, VIP Road Surat Gujrat 395017 India

Hariprasath Manoharan of Assistant Professor, Audisankara college of Engg. and Tech. Gudur Andhra Pradesh 524101 India



Dated this 31<sup>st</sup> day of March 2021

Commissioner of Patents



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# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2021100287

Pravin R. Kshirsagar of Professor & Head, Electronics & Communication Engineering, AVN Institute of Engineering & Tech. Hyderabad Telangana 501510 India

Vijayakumar Peroumal of A84, Golden Garden, Tata Value Home, New Haven Ribbon Walk, Mambakkam Chennai India

**Title of invention:**

AN IOT BASED TYRE PRESSURE AND TEMPERATURE MONITORING SYSTEM

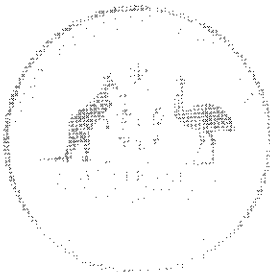
**Name of inventor(s):**

Devaneyan, S.Pradeep; Sahoo, Santosh Kumar; Dadheech, Pankaj; Vijayalakshmi, A.; B., Ebenezer Abishek.; M., Lakshmanan.; V., Noor Mohammed.; M., Palanivelan.; W., Razia Sultana; Kumar, Chinnapalli Likith; Pravallika, Sirigireddy; Sasikala, K.; Sekar, V.; Monisha, M.; P., Vijayalakshmi.; Joshi, Hitesh; Manoharan, Hariprasath; Kshirsagar, Pravin R. and Peroumal, Vijayakumar

**Term of Patent:**

Eight years from 17 January 2021

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Dated this 31<sup>st</sup> day of March 2021

Commissioner of Patents

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202141032077 A

(19) INDIA

(22) Date of filing of Application :16/07/2021

(43) Publication Date : 13/08/2021

(54) Title of the invention : BIGDATA FOR SECURE EMAIL SPAM FILTERING

(51) International classification	:H04L0012580000, G06Q0010100000, G06F0021560000, A01K0067027000, G06Q0050100000	(71)Name of Applicant : 1)Dr. C MURUGAMANI Address of Applicant :PROFESSOR & HEAD DEPARTMENT OF INFORMATION TECHNOLOGY BHOJ REDDY ENGINEERING COLLEGE FOR WOMEN SANTOSH NAGAR CROSS ROADS, VINAY NAGAR, SAIDABAD, HYDERABAD, TELANGANA 500059 Telangana India 2)Dr.BASANT KUMAR VERMA 3)Dr. MANMOHAN SHARMA 4)Mr. PARVEEN KUMAR SHARMA 5)Dr. PANKAJ DADHEECH 6)Mrs. SWATHI PAL M 7)Dr. C.PRADEEP 8)Dr. ASHISH K SHARMA 9)Dr. MEENAKSHI R 10)Prof. R. S. SALARIA
(31) Priority Document No	:NA	(72)Name of Inveotor : 1)Dr. C MURUGAMANI 2)Dr.BASANT KUMAR VERMA 3)Dr. MANMOHAN SHARMA 4)Mr. PARVEEN KUMAR SHARMA 5)Dr. PANKAJ DADHEECH 6)Mrs. SWATHI PAL M 7)Dr. C.PRADEEP 8)Dr. ASHISH K SHARMA 9)Dr. MEENAKSHI R 10)Prof. R. S. SALARIA
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:PCT//	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application	:NA	
Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

ABSTRACT BIGDATA FOR SECURE EMAIL SPAM FILTERING Spam has developed the basis of verdict exploited by digital crooks to extent malign payloads such as Trojan infections. Combined spam location technique can able to achieve vast choice of email data backed by diversified agents and particularly with remarkable dispute of needing confession content of email. Distance-saving messes are the primary activities exploited for shielding the email security while vesting message description for detecting spam. In this regard, Spandoop is a vital Big data security protection mutual spam identification tool adapted on chief of a regular map reducing facility. Spam has developed the basis of result exploited by using digital crooks to extent malign payloads like Trojans. Spam discovery strategies related to the community can accomplish vast choice of email data donated by diverse bases and they have the prominent concern of demanding email contact and the spam directs are blocked and notable issues also the mass emails are eminent and stalled right away.

No. of Pages : 21 No. of Claims : 9



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#### Application Details

APPLICATION NUMBER	202141032077
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	16/07/2021
APPLICANT NAME	1 . Dr. C MURUGAMANI 2 . Dr. BASANT KUMAR VERMA 3 . Dr. MANMOHAN SHARMA 4 . Mr. PARVEEN KUMAR SHARMA 5 . Dr. PANKAJ DADHEECH 6 . Mrs. SWATHI PAI. M 7 . Dr. C. PRADEEP 8 . Dr. ASHISH K SHARMA 9 . Dr. MEENAKSHI R 10 . Prof. R. S. SALARIA
TITLE OF INVENTION	BIGDATA FOR SECURE EMAIL SPAM FILTERING
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	senanipindia@gmail.com
ADDITIONAL-EMAIL (As Per Record)	murugamanija@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	13/08/2021

#### Application Status

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202141039583 A

(19) INDIA

(22) Date of filing of Application :01/09/2021

(43) Publication Date : 10/09/2021

(54) Title of the invention : IOT BASED AUTOMATED SYSTEM FOR FREEWAY FRAMEWORK 3

(51) International classification	:H04L0029080000, B01D0046240000, G06Q0050260000, G06Q0050100000, G05B0019040000	(71)Name of Applicant : <b>1)Dr. A.NARASIMA VENKATESH</b> Address of Applicant :ASSOCIATE PROFESSOR MBA- DEPARTMENT OF HUMAN RESOURCE MANAGEMENT RV INSTITUTE OF MANAGEMENT CA 17, 36TH CROSS RD, 4TH T BLOCK EAST, JAYANAGARA 9TH BLOCK, JAYANAGAR, BENGALURU, KARNATAKA 560041 Karnataka India <b>2)Dr. BASANT KUMAR VERMA</b> <b>3)Mr. ANIL KUMAR TANWAR</b> <b>4)Dr. S. VIMAL</b> <b>5)Mrs. BLESSY Y M</b> <b>6)Dr. SHILPA K GOWDA</b> <b>7)Dr. MUKESH KUMAR GUPTA</b> <b>8)Mrs. JAYASHREE M KUDARI</b> <b>9)Mrs. ADLIN JEBAKUMARI S</b> <b>10)Dr.ARUNKUMAR G L</b>
(31) Priority Document No	:NA	(72)Name of Inventor : <b>1)Dr. A.NARASIMA VENKATESH</b> <b>2)Dr. BASANT KUMAR VERMA</b> <b>3)Mr. ANIL KUMAR TANWAR</b> <b>4)Dr. S. VIMAL</b> <b>5)Mrs. BLESSY Y M</b> <b>6)Dr. SHILPA K GOWDA</b> <b>7)Dr. MUKESH KUMAR GUPTA</b> <b>8)Mrs. JAYASHREE M KUDARI</b> <b>9)Mrs. ADLIN JEBAKUMARI S</b> <b>10)Dr.ARUNKUMAR G L</b>
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(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	

(57) Abstract :

ABSTRACT IOT BASED AUTOMATED SYSTEM FOR FREEWAY FRAMEWORK 3 Internet of Things (IoT) is by and large the organization of 'things' through which actual things can empower to communicate information with the help of hardware, sensors, programming and network. Additionally, These IoT doesn't needed any human interface. IoT Technology is broadly applied in enormous businesses including Energy, medical services and all the more significantly Transportation areas. In this undertaking, the information of the RFID card is shipped off the site, through IOT. The use of IoT cost collection structure in various metropolitan regions would be a compelling development towards the blockage of the city avenues in profound stop up of traffic. Clearly, transportation is the strength of our country's economy. There are diverse execution, shows in far off sensor association, for instance, filter c and parts, including RFID, NFC in this way engaging abatement in action costs and prodding credit just trades. In the event that there ought to emerge an event of manual expense arrangement structure time use is much undeniably more horrible similarly as fuel depletion and most critical is the environment, the proportion of air tainting that is made at the tollbooth site is at verifiable level, so our made system will reduce time wastage and decrease air pollution just as screen fuel. The sole inspiration driving this innovation is to diminish the challenges achieved by manual expense combination system and pass the subject's vehicle through cost limit in an issue of few seconds without end.

No. of Pages : 24 No. of Claims : 7





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Ministry of Commerce & Industry,  
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GEOMETRIC QUALIFICATIONS

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#### Application Details

APPLICATION NUMBER	202141039583
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	01/09/2021
APPLICANT NAME	1 . Dr. A.NARASIMA VENKATESH 2 . Dr. BASANT KUMAR VERMA 3 . Mr. ANIL KUMAR TANWAR 4 . Dr. S. VIMAL 5 . Mrs. BLESSY Y M 6 . Dr. SHILPA K GOWDA 7 . Dr. MUKESH KUMAR GUPTA 8 . Mrs. JAYASHREE M KUDARI 9 . Mrs. ADLIN JEBAKUMARI S 10 . Dr.ARUNKUMAR G L
TITLE OF INVENTION	IOT BASED AUTOMATED SYSTEM FOR FREEWAY FRAMEWORK 3
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	senanipindia@gmail.com
ADDITIONAL-EMAIL (As Per Record)	dr.a.narasimavenkatesh@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	10/09/2021

#### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

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➡ Filed ➡ Published ➡ RQ Filed ➡ Under Examination ➡ Disposed

In case of any discrepancy in status, kindly contact [ipo-helpdesk@nic.in](mailto:ipo-helpdesk@nic.in)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202111052905 A

(19) INDIA

(22) Date of filing of Application :17/11/2021

(43) Publication Date : 17/12/2021

(54) Title of the invention : INTELLIGENT STOCK TRADING USING MACHINE LEARNING AND AI- BASED

(51) International classification :G06Q0040040000, G06Q0040060000, G06N0003040000, G06Q0010000000, G06Q0040000000

(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

(71)Name of Applicant :

**1)Dr. Meenakshi Nawal Associate Professor**

Address of Applicant :Swami Keshvanand Institute of Technology Management & Gramothan, Ramnagaria, Jagatpura, Jaipur-302 017, Rajasthan -----

**2)Dr. Sunita Gupta Associate Professor**

**3)Tushar Mehrotra Assistant Professor**

**4)Dr. Neha Janu Associate Professor**

**5)Dr. Neelam Chaplot Associate Professor**

**6)Dr. Deepika Shekhawat Assistant Professor**

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

**1)Dr. Meenakshi Nawal Associate Professor**

Address of Applicant :Swami Keshvanand Institute of Technology Management & Gramothan, Ramnagaria, Jagatpura, Jaipur-302 017, Rajasthan -----

**2)Dr. Sunita Gupta Associate Professor**

Address of Applicant :Swami Keshvanand Institute of Technology Management & Gramothan, Ramnagaria, Jagatpura, Jaipur-302 017, Rajasthan -----

**3)Tushar Mehrotra Assistant Professor**

Address of Applicant :College of Computing Sciences & IT, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh -----

**4)Dr. Neha Janu Associate Professor**

Address of Applicant :Swami Keshvanand Institute of Technology Management & Gramothan, Ramnagaria, Jagatpura, Jaipur-302 017, Rajasthan -----

**5)Dr. Neelam Chaplot Associate Professor**

Address of Applicant :Poornima College of Engineering, ISI-6, RIICO Institutional Area, Sitapur, Jaipur, Rajasthan 302022 -----

**6)Dr. Deepika Shekhawat Assistant Professor**

Address of Applicant :Manipal University Jaipur, Jaipur-Ajmer Express Highway, Dehmi Kalan, Near GVK Toll Plaza, Jaipur, Rajasthan 303007, Rajasthan. -----

(57) Abstract :

Our Invention "Intelligent Stock Trading Using Machine Learning and AI- Based" is a The present invention relates to a system for automatically trading real investment items desirably on at least one trading exchange based on predetermined conditions. The present invention includes a data interface for receiving investment data identifying at least one item capable of being traded and containing information uniquely associated with the item. An individual trading computer receives predetermined trading criteria for making a trade. The individual trading computer receives the investment data and the predetermined trading criteria. Artificial intelligence techniques have the ability to take into consideration financial system complexities and they are used as financial time series forecasting tools. Two techniques are used to benchmark the AI techniques, namely, Autoregressive Moving Average (ARMA) which is linear modelling technique and random walk (RW) technique. The experimentation was performed on data obtained from the Johannesburg Stock Exchange. The data used was a series of past closing prices of the All Share Index. The results showed that the three techniques have the ability to predict the future price of the Index with an acceptable accuracy. All three artificial intelligence techniques outperformed the linear model. However, the random walk method outperformed all the other techniques. These techniques show an ability to predict the future price however, because of the transaction costs of trading in the market, it is not possible to show that the three techniques can disprove the weak form of market efficiency. The results show that the ranking of performances support vector machines, neuro-fuzzy systems, multilayer perceptron neural networks is dependent on the accuracy measure used.

No. of Pages : 16 No. of Claims : 8



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(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202111052905
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	17/11/2021
APPLICANT NAME	1 . Dr. Meenakshi Nawal Associate Professor 2 . Dr. Sunita Gupta Associate Professor 3 . Tushar Mehrotra Assistant Professor 4 . Dr. Neha Janu Associate Professor 5 . Dr. Neelam Chaplot Associate Professor 6 . Dr. Deepika Shekhawat Assistant Professor
TITLE OF INVENTION	INTELLIGENT STOCK TRADING USING MACHINE LEARNING AND AI- BASED
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	dr.bksarkar2003@yahoo.in
ADDITIONAL-EMAIL (As Per Record)	dr.bksarkar2003@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	17/12/2021

#### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

[View Documents](#)

➡ Filed ➡ Published ➡ RQ Filed ➡ Under Examination ➡ Disposed

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An das  
 Deutsche Patent- und Markenamt  
 80297 München

(1)	Sendungen des Deutschen Patent- und Markenamts sind zu richten an:  Name, Vorname / Firma Hohendorf Kierdorf Patentanwälte PartGmbB  Straße, Hausnummer / ggf. Postfach Hohenzollernring 79-83 (Capitol)  Postleitzahl      Ort 50672              Köln, DE	<b>Antrag                  auf Eintragung                  eines                  Gebrauchsmusters</b>	<span style="font-size: 48pt; font-weight: bold;">2</span>
	Datum      TT      MM      JJJJ 06      10      2021		
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(3)	Der Empfänger in Feld (1) ist der      ggf. Nr. der Allgemeinen Vollmacht <input type="checkbox"/> Anmelder <input checked="" type="checkbox"/> Zustellungsbevollmächtigte <input type="checkbox"/> Vertreter		
(4)	<div style="font-size: small;">                     nur auszufüllen, wenn abweichend von Feld (1)                      Handelsregisternummer nur bei Firmen anzugeben                 </div> <p><b>Anmelder (1)</b>                  Name, Vorname / Firma lt. Handelsregister                  Dr. Gupta, Manish                  c/o Moradabad Institute of Technology                  Department of Computer Science &amp; Engineering                  Straße, Hausnummer (kein Postfach!)                  Near wave mall, Ram Ganga Vihar Phase 2                  Postleitzahl      Ort      Land                  244001      Moradabad      IN                  Telefon      Fax      E-Mail</p> <p><input type="checkbox"/> Der Anmelder ist eingetragen im Handelsregister Nr. beim Amtsgericht</p> <p><b>Anmelder (2)</b>                  Name, Vorname / Firma lt. Handelsregister                  Sinha, Divyanshu                   Straße, Hausnummer (kein Postfach!)                  Sarita Vihar, South East Delhi                  Postleitzahl      Ort      Land                  110076      New Delhi      IN                  Telefon      Fax      E-Mail</p> <p><input type="checkbox"/> Der Anmelder ist eingetragen im Handelsregister Nr. beim Amtsgericht</p> <p><b>Anmelder (3)</b>                  Name, Vorname / Firma lt. Handelsregister                  Dr. A Lakhani, Bhavesh                  c/o Gujarat Arts &amp; Commerce College                  HOD. Department of Commerce                  Straße, Hausnummer (kein Postfach!)</p>		

Ellis Bridge Ahmedabad Der Antrag kann nicht über Fax oder Post eingereicht werden.

Postleitzahl 380006 Ort Gujarat Land IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr. beim Amtsgericht

**Anmelder (4)**

Name, Vorname / Firma lt. Handelsregister

Prof. Dr. Bathla, R.K.

c/o Desh Bhagat University

Department of Computer Science

Straße, Hausnummer (kein Postfach!)

Amlah Road, Mandi Gobindgarh, Gobindgarh

Postleitzahl 147301 Ort Punjab Land IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr. beim Amtsgericht

**Anmelder (5)**

Name, Vorname / Firma lt. Handelsregister

Dr. Akila, D.

c/o Vels Institute of Science, Technology and Advanced Studies

Department of Information Technology, School of Computing Sciences

Straße, Hausnummer (kein Postfach!)

PV Vaithiyalingam Rd, Velan Nagar, Krishnapuram, Pallavaram, Chennai

Postleitzahl 600117 Ort Tamil Nadu Land IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr. beim Amtsgericht

**Anmelder (6)**

Name, Vorname / Firma lt. Handelsregister

Dr. Jangra, Ajay

c/o Kurukshetra University

University Institute of Engineering and Technology, Department of Computer Science and Engineering

Straße, Hausnummer (kein Postfach!)

Pehowa Road, University

Postleitzahl 136119 Ort Haryana Land IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr. beim Amtsgericht

**Anmelder (7)**

Name, Vorname / Firma lt. Handelsregister

Dr. Jolly, Ashish

c/o Govt. PG College

Department of Computer Science, Near Football Chowk

Straße, Hausnummer (kein Postfach!)

Ambala Cantt

Postleitzahl Ort Land

133001 Haryana Der Antrag kann nicht über Fax oder Post eingereicht werden. IN

Telefon Fax E-Mail DPMAdirekt G6003 e Seite 3

Der Anmelder ist eingetragen im Handelsregister Nr.  
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**Anmelder (8)**

Name, Vorname / Firma lt. Handelsregister  
Dr. Kumar, Surender

c/o Sri Guru Teg Bahadur Khalsa College  
P.G. Department of Computer Science

Straße, Hausnummer (kein Postfach!)

Sri Anandpur Sahib (an autonomous college), SH22, Power Colony, Anandpur Sahib

Postleitzahl Ort Land  
140118 Punjab IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr.  
beim Amtsgericht

**Anmelder (9)**

Name, Vorname / Firma lt. Handelsregister  
Dr. Srivastava, Jay Prakash

c/o SR University  
Department of Mechanical Engineering

Straße, Hausnummer (kein Postfach!)

Warangal, Telangana, Ananthsagar

Postleitzahl Ort Land  
506371 Hasanparthy IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr.  
beim Amtsgericht

**Anmelder (10)**

Name, Vorname / Firma lt. Handelsregister  
Dr. Dadheech, Pankaj

c/o Swami Keshvanand Institute of Technology, Managment & Gramothan (SKIT)  
Department of Computer Science & Engineering

Straße, Hausnummer (kein Postfach!)

Ram Nagariya Rd., Shivam Nagar, Jagatpura, Jaipur

Postleitzahl Ort Land  
302017 Rajasthan IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr.  
beim Amtsgericht

**Anmelder (11)**

Name, Vorname / Firma lt. Handelsregister  
Dr. Sheeja, S. Angelin

c/o Nesamony Memorial Christian College  
Department of English

Straße, Hausnummer (kein Postfach!)

Road, Marthandam

Postleitzahl Ort Land  
629165 Tamil Nadu IN

Telefon Fax E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr.

beim Amtsgericht

**Anmelder (12)**

Name, Vorname / Firma lt. Handelsregister

Dr. Dahiya, Vineet

c/o KR Mangalam University, Department of Electrical and Electronics Engineering

School of Engineering and Technology

Straße, Hausnummer (kein Postfach!)

Gurugram, Sohna Rd., Sohna Rural

Postleitzahl

Ort

122103

Haryana

Land

IN

Telefon

Fax

E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr.

beim Amtsgericht

**Anmelder (13)**

Name, Vorname / Firma lt. Handelsregister

Dr. Yadav, Deepika

c/o SRM University

Department of Electrical and Electronics Engineering

Straße, Hausnummer (kein Postfach!)

Delhi-NCR, 39, Rajiv Ghandi Education City, Sonipat

Postleitzahl

Ort

131029

Haryana

Land

IN

Telefon

Fax

E-Mail

Der Anmelder ist eingetragen im Handelsregister Nr.

beim Amtsgericht

**Vertreter (1)**

Name, Vorname / Firma

Hohendorf Kierdorf Patentanwälte PartGmbB

PatentMinderIP Associates

Straße, Hausnummer / ggf. Postfach

Hohenzollertring 79-83 (Capitol)

Postleitzahl

Ort

50672

Köln

Land

DE

Telefon

Fax

E-Mail

+49 221 42357744

+49 221 42357745

office@hohendorf-kierdorf.com

(5)  
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Anmelder-Nr.

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Zustelladressen-Nr.

(6)  
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sofern  
bekannt

**Bezeichnung der Erfindung**

IPC-Vorschlag des Anmelders

Intelligentes Überwachungsgerät für den Transport von lebenden Fischen auf der Grundlage eines Internet der Dinge-Sensors

(7)

**Sonstige Anträge**

Aussetzung der Eintragung und Bekanntmachung auf Monate

(Max 15 Mon. ab Anmelde- oder Prioritätstag)

Rechercheantrag - Ermittlung der öffentlichen Druckschriften (§ 7 Gebrauchsmustergesetz)

(8)	<b>Erklärungen</b> <input type="checkbox"/> <b>Teilung/Ausscheidung</b> aus der Gebrauchsmusteranmeldung <input type="checkbox"/> <b>Abzweigung</b> aus der Patentanmeldung/dem Patent <input type="checkbox"/> Der Anmelder ist an <b>Lizenzvergabe</b> interessiert (unverbindlich)	Anmeldeitag DPMAdirekt G6003 e Seite 5
(9)	<input type="checkbox"/> Inländische Priorität (Datum, Aktenzeichen der Voranmeldung) <input type="checkbox"/> Ausländische Priorität (Datum, Land, Aktenz. der Voranmeldung) <input type="checkbox"/> Ausstellungspriorität (Datum der erstmaligen Zurschaustellung, Ausstellung)	
(10)	<b>Gebühre</b> nzahlung in Höhe von 30,00 EUR <input checked="" type="checkbox"/> <b>SEPA-Mandatsverwendung</b> elektr. Formular ist beigefügt. <input type="checkbox"/> <b>Überweisung</b> (nach Erhalt der Empfangsbescheinigung) Wird die Anmeldegebühr nicht innerhalb 3 Monaten nach dem Tag des Eingangs der Anmeldung gezahlt, so gilt die Anmeldung als zurückgenommen!	
(11)	<b>Anlagen</b> 1. <u>12</u> Seite(n) Beschreibung 2. <u>2</u> Seite(n) Schutzansprüche <u>5</u> Anzahl Schutzansprüche 3. <u>1</u> Anzahl Figuren 4. _____ Abschrift(en) der Voranmeldung(en) bei Priorität 5. _____ Abschrift der Voranmeldung bei Abzweigung 6. _____ Vertretervollmacht 7. _____ Übersetzung(en) 8. _____ Sonstiges	
G6003e 1.08	<p style="text-align: right;"><b>Bearbeiter (1)</b></p> <p style="text-align: right;">_____                  (12) Unterschrift</p> <p style="text-align: right;">_____                  (13) Funktion des Bearbeiters</p>	



# Urkunde

über die Eintragung des  
Gebrauchsmusters Nr. 20 2021 105 406

**Bezeichnung:**

Intelligentes Überwachungsgerät für den Transport von lebenden Fischen auf  
der Grundlage eines Internet der Dinge-Sensors

**IPC:**

A01K 63/00

**Inhaber/Inhaberin:**

Akila, Duraisamy, Dr., Chennai, Tamil Nadu, INA  
Lakhani, Bhavesh, Dr., Ahmedabad, Gujarat, IN  
Bathla, Rajender Kumar, Prof. Dr., Mandi  
Gobindgarh, Punjab, IN  
Dadheech, Pankaj, Dr., Jaipur, Rajasthan, IN  
Dahiya, Vineet, Dr., Sohna, Haryana, IN  
Gupta, Manish, Dr., Moradabad, IN

Jangra, Ajay, Dr., Pehowa, Haryana, IN  
Jolly, Ashish, Dr., Ambala Cantt, Haryana, IN  
Kumar, Surender, Dr., Anandpur Sahib, Punjab, IN  
Sheeja, S. Angelin, Dr., Tamil Nadu, IN  
Sinha, Divyanshu, New Delhi, IN  
Srivastava, Jay Prakash, Dr., Hasanparthy, IN  
Yadav, Deepika, Dr., Sonipat, Haryana, IN

**Tag der Anmeldung:**

06.10.2021

**Tag der Eintragung:**

29.10.2021

Die Präsidentin des Deutschen Patent- und Markenamts

*Cornelia Rudloff-Schäffer*

Cornelia Rudloff-Schäffer

München, 29.10.2021



# DE 202021105406 U1

Anmeldeland: DE  
Anmeldenummer: 202021105406  
Anmeldedatum: 06.10.2021  
Veröffentlichungsdatum: 09.12.2021  
Hauptklasse: A01K 63/00(2006.01.A)  
MCD-Hauptklasse: A01K 63/00(2017.01.A)  
Anmelder: A Lakhani, Bhavesh, Dr., Gujarat, Ahmedabad, IN  
Anmelder: Akila, Duraisamy, Dr., Tamil Nadu, Chennai, IN  
Anmelder: Bathla, Rajender Kumar, Prof. Dr., Punjab, Mandi Gobindgarh, IN  
Anmelder: Dadheech, Pankaj, Dr., Rajasthan, Jaipur, IN  
Anmelder: Dahiya, Vineet, Dr., Haryana, Sohna, IN  
Anmelder: Gupta, Manish, Dr., Moradabad, IN  
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Anmelder: Jolly, Ashish, Dr., Haryana, Ambala Cantt, IN  
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Anmelder: Sheeja, S. Angelin, Dr., Tamil Nadu, IN  
Anmelder: Sinha, Divyanshu, New Delhi, IN  
Anmelder: Srivastava, Jay Prakash, Dr., Hasanparthy, IN  
Anmelder: Yadav, Deepika, Dr., Haryana, Sonapat, IN

## [DE]Intelligentes Überwachungsgerät für den Transport von lebenden Fischen auf der Grundlage eines Internet der Dinge-Sensors

[DE]Eine intelligente Überwachungsvorrichtung für den Transport von lebenden Fischen, die auf einem Internet der Dinge-Sensor basiert, wobei die intelligente Überwachungsvorrichtung umfasst: eine Sauerstoffversorgungseinheit, die zur Versorgung mit Sauerstoff in einem Behälter dient; Fischbehälterbeförderer, der zum Befördern eines Fischbehälters verwendet wird, wobei eine Auslieferungstransporteinrichtung verwendet wird, die den Fischbehälter ergreift und in der vertikalen Position hält, mit der der Fischbehälter zur aufeinanderfolgenden Auslieferung in die beliebige Richtungsposition in einer Auslieferungstransportrichtung entsprechend der vertikalen Position transportiert werden kann; eine Sensoreinheit, mit der die Aktivität der Fische in einem Aquarium gemessen werden kann; eine Verarbeitungseinheit, die verwendet wird, um die von dem Sensor empfangenen Informationen zu verarbeiten und die Sauerstoffzufuhreinheit in dem Fischtank zu steuern, wobei die Verarbeitungseinheit den Sauerstoffbedarf unter Verwendung verarbeiteter Informationen unter Verwendung von Computerbefehlen, die von dem Prozessor der Verarbeitungseinheit verarbeitet werden, erkennt, wobei die Verarbeitungseinheit den Transport der gesamten Anordnung durch das von einem mobilen Computergerät unter Verwendung einer Kommunikationseinheit empfangene Signal steuert.

Seite 1 --- ()

Seite 2 --- ()

### BEREICH DER ERFINDUNG

[0001] Die vorliegende Erfindung bezieht sich auf das Gebiet der auf dem Internet der Dinge (IoT - Internet of Things) basierenden Vorrichtung für den Transport von Fischen.

[0002] Insbesondere bezieht sich die vorliegende Erfindung auf eine intelligente Überwachungsvorrichtung für den Transport von lebenden Fischen, die auf einem Internet der Dinge-Sensor basiert.

### HINTERGRUND DER ERFINDUNG

[0003] Bei dem im Abschnitt "Hintergrund" behandelten Gegenstand sollte nicht davon ausgegangen werden, dass er allein aufgrund seiner Erwähnung im Abschnitt "Hintergrund" zum Stand der Technik gehört. Ebenso sollte nicht davon ausgegangen werden, dass ein im Hintergrundabschnitt erwähntes oder mit dem Gegenstand des Hintergrundabschnitts verbundenes Problem bereits im Stand der Technik erkannt wurde. Der Gegenstand des Hintergrundabschnitts stellt lediglich verschiedene Ansätze dar, die für sich genommen ebenfalls Erfindungen sein können.

[0004] Bei verschiedenen Anwendungen in der Fischindustrie besteht die Notwendigkeit, Fische durch den Einsatz von Pumpsystemen von einem Ort zu einem anderen zu transportieren, z. B. zum Impfen, Sortieren, Schlachten, von Schiffen zu Fischreservoirs oder Ähnlichem.

Stand der Technik

[0005] 1. EP 3 302 074 - FISCHABGABEVORRICHTUNG, FISCH-TRANSFERSYSTEM AUSGERÜSTET MIT DIESER FISCHABGABEVORRICHTUNG UND VERFAHREN ZUR AUTOMATISCHEN ABGABE VON FISCH AN EINE FISCHVERARBEITUNGSVORRICHTUNG, veröffentlicht am 11.4.2018, Int. Klasse A22C 25/08, Anmeldenummer 15 726 136 Anmelder NORDISCHER MASCHINENBAU Erfinder PAULSOHN CARSTEN. Die Erfindung betrifft eine Fischabgabevorrichtung (1) zum Abgeben von Fisch (9) an eine Fischverarbeitungsvorrichtung (7), umfassend eine Abgabefördereinrichtung (3), die mit einem steuerbaren Positionierantrieb (36) und einem steuerbaren Förderantrieb (36) ausgestattet ist. Das Abgabefördermittel (3) ist mittels des Positionierantriebs (35) in einen von Fisch (9) freien Lagerraum (11), in einen ersten Zustand, in einen zweiten Zustand zum Erfassen, zentrierten Halten und Fördern des Fisches (9), zum Zugriff auf diesen im Lagerraum (11) und in einen dritten Zustand im Zusammenwirken mit dem Förderantrieb (36) verfahrbar, in dem der Fisch (9) nach dem Fördern an einem durch eine gesteuerte Abgabezeit mit zugehöriger Fischabgabegeschwindigkeit definierten Fischabgabepunkt (42) abgegeben wird.

[0006] 2. WO/2016/192756 - FISCHAUSLIEFERUNGSVORRICHTUNG, FISCH-TRANSFER-SYSTEM MIT DIESER FISCHAUSLIEFERUNGSVORRICHTUNG UND VERFAHREN ZUR AUTOMATISCHEN AUSLIEFERUNG VON FISCH AN EINE FISCHVERARBEITUNGSVORRICHTUNG, veröffentlicht am 08.12.2016, Int. Class A22C 25/08, Anmeldenummer PCT/EP2015/061993 Antragsteller NORDISCHER MASCHINENBAU RUD. BAADER GMBH + CO. KG Erfinder PAULSOHN, Carsten. Die Erfindung betrifft eine Fischabgabevorrichtung (1) zum Abgeben von Fisch (9) an eine Fischverarbeitungsvorrichtung (7), umfassend eine Abgabefördereinrichtung (3), die mit einem steuerbaren Positionierantrieb (36) und einem steuerbaren Förderantrieb (36) ausgestattet ist. Das Abgabefördermittel (3) ist mittels des Positionierantriebs (35) in einen von Fisch (9) freien Lagerraum (11), in einen ersten Zustand, in einen zweiten Zustand zum Erfassen, zentrierten Halten und Fördern des Fisches (9), zum Zugriff auf diesen im Lagerraum (11) und in einen dritten Zustand im Zusammenwirken mit dem Förderantrieb (36) verfahrbar, in dem der Fisch (9) nach dem Fördern an einem durch eine gesteuerte Abgabezeit mit zugehöriger Fischabgabegeschwindigkeit definierten Fischabgabepunkt (42) abgegeben wird.

(9) nach dem Fördern an einem durch eine gesteuerte Abgabezeit mit zugehöriger Fischabgabegeschwindigkeit definierten Fischabgabepunkt (42) abgegeben wird.

**[0007]** 3. DK 179582 - FISCHZUFÜHRVORRICHTUNG, MIT DIESER FISCHZUFÜHRVORRICHTUNG AUSGERÜSTETES FISCHTRANSFERSYSTEM UND VERFAHREN ZUR AUTOMATISIERTEN ZUFÜHRUNG VON FISCH ZU

**[0008]** EINER FISCHVERARBEITUNGSVORRICHTUNG, veröffentlicht am 27.11.2017, Int. Klasse A22C25/08, Anmeldenummer PA 2017 70858, Antragsteller/Erfinder Carsten Paulsohn. Eine Fischzuführvorrichtung (1) zum Zuführen von Fisch (9) zu einer Fischverarbeitungsvorrichtung (7) umfasst ein Zuführfördermittel (3), das mit einem steuerbaren Positionierantrieb (35) und einem steuerbaren Förderantrieb (36) ausgestattet ist. Das Abgabetransportmittel (3) ist durch den steuerbaren Positionierantrieb (35) in einen ersten, von dem Fisch (9) in einem Ablageraum (11) freigegebenen Zustand (301), in einen zweiten Zustand (302) zum Erfassen, zentrierten Halten und Fördern des im Ablageraum (11) zugreifenden Fisches (9) und, im Zusammenwirken mit dem steuerbaren Förderantrieb (36) in einen dritten Zustand (303), der den Fisch (9) nach dem Fördern an einem Fischabgabepunkt (42) freigibt, der durch eine gesteuerte Abgabezeit mit zugehöriger gesteuerter Fischabgabegeschwindigkeit definiert ist.

**[0009]** 4. CA 2985671 - FISCHAUSLIEFERUNGSVORRICHTUNG, FISCH-TRANSFERSYSTEM MIT DIESER

### Seite 3 --- ()

FISCHAUSLIEFERUNGSVORRICHTUNG UND VERFAHREN ZUR AUTOMATISCHEN AUSLIEFERUNG VON FISCH AN EINE FISCHVERARBEITUNGSVORRICHTUNG, veröffentlicht am 08.12.2016 Int.Klasse A22C25/08, Anmeldenummer 2985671, Antragsteller NORDISCHER MASCHINENBAU RUD. BAADER GMBH + CO. KG. Die Erfindung betrifft eine Fischabgabevorrichtung (1) zum Abgeben von Fisch (9) an eine Fischverarbeitungsvorrichtung (7), umfassend eine Abgabefördereinrichtung (3), die mit einem steuerbaren Positionierantrieb (36) und einem steuerbaren Förderantrieb (36) ausgestattet ist. Das Abgabefördermittel (3) ist mittels des Positionierantriebs (35) in einen von Fisch (9) freien Lagerraum (11), in einen ersten Zustand, in einen zweiten Zustand zum Erfassen, zentrierten Halten und Fördern des Fisches (9), zum Zugriff auf diesen im Lagerraum (11) und in einen dritten Zustand im Zusammenwirken mit dem Förderantrieb (36) verfahrbar, in dem der Fisch (9) nach dem Fördern an einem durch eine gesteuerte Abgabezeit mit zugehöriger Fischabgabegeschwindigkeit definierten Fischabgabepunkt (42) abgegeben wird.

**[0010]** 5. US 2018/0160692 - FISCHAUSLIEFERUNGSVORRICHTUNG, FISCH-TRANSFER-SYSTEM MIT DIESER FISCHAUSLIEFERUNGSVORRICHTUNG UND VERFAHREN ZUR AUTOMATISCHEN AUSLIEFERUNG VON FISCH AN EINE FISCHVERARBEITUNGSVORRICHTUNG, veröffentlicht am 14.06.2018, Int. Klasse A22C25/00 Antragsnummer 15578175 Antragsteller Nordischer Maschinenbau Rud. Baader GmbH + Co. KG Erfinder Carsten Paulsohn. Eine Fischzuführeinrichtung (1) zum Zuführen von Fisch (9) zu einer Fischverarbeitungseinrichtung (7) umfasst ein Zuführfördermittel (3), das mit einem steuerbaren Positionierantrieb (35) und einem steuerbaren Förderantrieb (36) ausgestattet ist. Das Abgabetransportmittel (3) ist durch den steuerbaren Positionierantrieb (35) in einen ersten Zustand (301) zur Freigabe des Fisches (9) in einem Ablageraum (11), in einen zweiten Zustand (302) zum Erfassen, zentrierten Halten und Fördern des im Ablageraum (11) zugreifenden Fisches (9) und, im Zusammenwirken mit dem steuerbaren Förderantrieb (36) in einen dritten Zustand (303), der den Fisch (9) nach der Förderung an einem Fischabgabepunkt (42) freigibt, der durch eine gesteuerte Abgabezeit mit zugehöriger gesteuerter Fischabgabegeschwindigkeit definiert ist.

**[0011]** 6. CA 2172922 VORRICHTUNG ZUR AUTOMATISCHEN REGELBAREN ÜBERGABE VON FISCHEN AN EINE FISCHVERARBEITUNGSMASCHINE, veröffentlicht am 30.09.1996, Int. Klasse A22C 25/08, Anmeldenummer 2172922, Antragsteller Erfinder GROSEHOLZ, WERNER. Es wird eine Vorrichtung zur automatischen geregelten Übergabe von Fisch an eine Fischverarbeitungsmaschine beschrieben. Um die korrekte Ausrichtung der Fische bei einer solchen Übergabe zu gewährleisten, umfasst die Vorrichtung einen Förderer mit einem Laufrost zur Aufnahme von Fischen in loser Schüttung und zu deren Vereinzelung, eine Ausrichtvorrichtung mit einer Drehvorrichtung zum Ausrichten der Fische in einer einheitlichen Längsausrichtung, eine Vorrichtung zum Ausrichten der Fische in einer einheitlichen Querausrichtung, eine Taktvorrichtung zur individuellen Aufnahme und synchronen Abgabe der Fische an einen Querförderer mit Trögen zur Aufnahme der Fische, eine Messstation mit einem optischen Messsensor zur Überwachung der seitlichen Ausrichtung der Fische und eine Wendevorrichtung, die durch den Messsensor gesteuert wird, um falsch positionierte Fische während ihres Transports in den Trögen um ihre Längsachse zu drehen.

**[0012]** In US2016113298A wird ein Pumpsystem beschrieben, das einen Rohrabschnitt mit gleichmäßigem Innendurchmesser und einen Produktionswasserkreislauf umfasst, der mit Abzweigrohren an den stromaufwärts und stromabwärts gelegenen Enden des Rohrabschnitts verbunden ist und mit dem Rohrabschnitt eine Schleife bildet. Der Produktionswasserkreislauf umfasst eine Pumpe und Ventile zum Pumpen von Produktionswasser in den Rohrabschnitt durch das Einlass-Zweigrohr und aus dem Auslass-Zweigrohr. Es wird auch ein Verfahren zum Pumpen von hochgeladenem Wasser und Fisch entlang des Rohrabschnitts bereitgestellt, das die Schritte des Abziehens von Produktionswasser aus dem Rohrabschnitt durch das stromabwärts gelegene Ende des Rohrabschnitts und des gleichzeitigen Erzeugens eines Flusses von hochgeladenem Wasser und Fisch durch den Rohrabschnitt umfasst. Das Verfahren umfasst auch den Schritt des Pumpens von Produktionswasser in ein stromaufwärts gelegenes Ende des Rohrabschnitts und des Verursachens einer Strömung von hochgeladenem Wasser und Fisch entlang des Rohrabschnitts.

**[0013]** US2018310575A offenbart ein Verfahren und ein System zum Bewegen von getöteten Fischen in einem Rohr oder einer Rohrleitung, das Wasser und die Zufuhr von Druckluft oder Wasserdruck oder beides umfasst, um Zonen mit unterschiedlichen Eigenschaften in dem Rohr oder der Rohrleitung zu schaffen, um einen steuerbaren Wasserstrom für den Antrieb und die gesteuerte Verweildauer der Fische in dem Rohr oder der Rohrleitung zu bilden.

**[0014]** Aus US2017000094A ist ein segmentiertes Fischpumpensystem bekannt. Das segmentierte Fischpumpensystem umfasst eine Reihe von Druckerhöhungspumpensegmenten, die auf einem Ansaugpumpensegment gestapelt sind und einen durchgängig geschlossenen Strom bilden, wobei jedes Druckerhöhungspumpensegment eine weitere Aufwärtsströmung induziert, wodurch der Druck und die Geschwindigkeit, die für die Ansaugpumpe des Ansaugpumpensegments erforderlich sind, minimiert

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werden. Dadurch wird die Verletzung empfindlicher Wasserlebewesen beim Sammeln verringert und eine nautische Umgebung innerhalb des geschlossenen Stroms für die zu transportierenden Wasserlebewesen geschaffen, die sich selbst in höhere Lagen befördern können.

**[0015]** In WO2017213511A1 werden ein Verfahren und ein System zum Pumpen von Partikeln in einer Flüssigkeit, insbesondere von lebenden Fischen in Wasser, beschrieben, bei dem eine Kammer eine Flüssigkeit und Partikel aus einem Flüssigkeitsvolumen durch eine geschlossene Leitung ansaugt, wobei die Kammer mit der Saugseite eines Ejektors und einer Pumpe zur Bildung eines Unterdrucks in der Kammer verbunden ist. Gleichzeitig trägt das vom Kompressor der Flüssigkeitssäule in der Kammer zugeführte Gas zur weiteren Beschleunigung des Flüssigkeitsstroms durch die Kammer bei. Der Ejektor wird durch einen Flüssigkeitsstrom von der Pumpe oder durch Gas vom Kompressor angetrieben. Der geschlossene Kanal ist mit einem Rückschlagventil verbunden, das den Rückfluss von Flüssigkeit und Partikeln in das Flüssigkeitsvolumen verhindert. Die Flüssigkeit und die Partikel werden aus der Kammer durch den Ejektor und dann in eine geschlossene Leitung zur Aufnahmeeinheit geleitet. Das System umfasst auch eine externe Zufuhrleitung, die über ein Ventil an der externen Zufuhrleitung und ein Ventil an der Zufuhr aus einer Kammer gesteuert wird. Die externe

Zuleitung dient beispielsweise zur Reinigung des Systems mit reinem oder sauberem Wasser, zum Auffüllen von Wasser bei der Inbetriebnahme und zum Betrieb eines Ejektors in Fällen, in denen Partikel dazu neigen können, einen Auslass zu verstopfen.

[0016] Ein gemeinsames Merkmal dieser Systeme ist jedoch, dass sie keine vollautomatische Lösung in Bezug auf eine Verarbeitungsstation oder ein Aufnahmebecken oder einen Lagerbehälter bieten, die den transportierten lebenden Fisch aufnehmen. Ein weiterer Nachteil ist, dass sie nicht für einen gleichmäßigen Zufluss von lebendem Fisch sorgen, der an die Verarbeitungsstation oder den Aufnahmebehälter bzw. Lagerbehälter geliefert wird.

[0017] Gruppierungen von alternativen Elementen oder Ausführungsformen der hierin offenbarten Erfindung sind nicht als Einschränkungen zu verstehen. Jedes Gruppenmitglied kann einzeln oder in beliebiger Kombination mit anderen Mitgliedern der Gruppe oder anderen hierin enthaltenen Elementen in Bezug genommen und beansprucht werden. Ein oder mehrere Mitglieder einer Gruppe können aus Gründen der Zweckmäßigkeit und/oder der Patentierbarkeit in eine Gruppe aufgenommen oder aus ihr entfernt werden. Wenn eine solche Aufnahme oder Streichung erfolgt, wird davon ausgegangen, dass die Spezifikation die Gruppe in der geänderten Form enthält, wodurch die schriftliche Beschreibung aller in den beigefügten Ansprüchen verwendeten Markush-Gruppen erfüllt wird.

[0018] Wie in der vorliegenden Beschreibung und in den folgenden Ansprüchen verwendet, schließt die Bedeutung von "ein&ldquo;, "eine&ldquo;, und "die&ldquo; den Plural ein, sofern der Kontext nicht eindeutig etwas anderes vorschreibt. Wie in der vorliegenden Beschreibung verwendet, schließt die Bedeutung von "in&ldquo; und "am&ldquo; ein, sofern der Kontext nicht eindeutig etwas anderes vorschreibt.

[0019] Die Aufzählung von Wertebereichen dient lediglich als Kurzbezeichnung für jeden einzelnen Wert, der in den Bereich fällt. Sofern hier nicht anders angegeben, wird jeder einzelne Wert in die Beschreibung aufgenommen, als ob er hier einzeln aufgeführt wäre. Alle hierin beschriebenen Verfahren können in jeder geeigneten Reihenfolge durchgeführt werden, sofern hierin nichts anderes angegeben ist oder der Kontext dem nicht eindeutig widerspricht.

[0020] Die Verwendung von Beispielen oder beispielhaften Formulierungen (z. B. "wie&ldquo;) in Bezug auf bestimmte Ausführungsformen dient lediglich der besseren Veranschaulichung der Erfindung und stellt keine Einschränkung des Umfangs der ansonsten beanspruchten Erfindung dar. Keine Formulierung in der Beschreibung ist als Hinweis auf ein nicht beanspruchtes Element zu verstehen, das für die Ausübung der Erfindung wesentlich ist.

[0021] Die in diesem Abschnitt "Hintergrund&ldquo; offengelegten Informationen dienen lediglich dem besseren Verständnis des Hintergrunds der Erfindung und können daher Informationen enthalten, die nicht zum Stand der Technik gehören und die einer Person mit normaler Fachkenntnis in diesem Land bereits bekannt sind.

#### ZUSAMMENFASSUNG

[0022] Bevor die vorliegenden Systeme und Methoden beschrieben werden, sei darauf hingewiesen, dass diese Anwendung nicht auf die beschriebenen Systeme und Methoden beschränkt ist, da es mehrere mögliche Ausführungsformen geben kann, die in der vorliegenden Offenlegung nicht ausdrücklich dargestellt sind. Es ist auch zu verstehen, dass die in der Beschreibung verwendete Terminologie nur zur Beschreibung der besonderen Versionen oder Ausführungsformen dient und nicht dazu gedacht ist, den Umfang der vorliegenden Anwendung zu begrenzen.

[0023] Die vorliegende Erfindung behebt und löst vor allem die technischen Probleme, die im Stand der Technik bestehen. Als Antwort auf diese Probleme offenbart die vorliegende Erfindung eine intelligente Überwachungsrichtung für den Transport von

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lebenden Fischen, die auf einem Internet der Dinge-Sensor basiert.

[0024] Ein Aspekt der vorliegenden Erfindung besteht darin, eine intelligente Überwachungsrichtung für den Transport von lebenden Fischen auf der Grundlage von Internet-der-Dinge-Sensoren vorzustellen, wobei die intelligente Überwachungsrichtung umfasst: eine Sauerstoffzufuhreinheit, die verwendet wird, um den Sauerstoff in einem Fischtank zuzuführen; einen Fischtankbeförderer, der verwendet wird, um einen Fischtank zu transportieren; eine Einrichtung, um die einzelnen Fische der Fischmasse, die von dem Förderer empfangen wird, einzeln zu transportieren; eine Sensoreinheit, die verwendet wird, um die Aktivität der Fische innerhalb eines Fischtanks zu erfassen; eine Liefertransporteinrichtung, die den Fischtank ergreift und in der vertikalen Position hält, mit der der Fischtank für eine sukzessive Lieferung in die beliebige Richtungsposition in einer Liefertransportrichtung, die der vertikalen Position entspricht, transportiert werden kann und eine Verarbeitungseinheit, die verwendet wird, um die von dem Sensor empfangenen Informationen zu verarbeiten und die Sauerstoffzufuhreinheit in dem Fischtank zu steuern, wobei die Verarbeitungseinheit den Bedarf an Sauerstoff unter Verwendung von verarbeiteten Informationen unter Verwendung von Computerbefehlen erkennt, die von dem Prozessor der Verarbeitungseinheit verarbeitet werden, wobei die Verarbeitungseinheit den Transport der gesamten Anordnung durch das von einer mobilen Recheneinheit unter Verwendung einer Kommunikationseinheit empfangene Signal steuert.

Figurenliste

[0025] Um verschiedene Aspekte einiger Ausführungsbeispiele der vorliegenden Erfindung zu verdeutlichen, wird eine genauere Beschreibung der Erfindung durch Bezugnahme auf bestimmte Ausführungsformen, die in der beigefügten Zeichnung dargestellt sind, gegeben. Es wird davon ausgegangen, dass diese Zeichnung nur eine illustrierte Ausführungsform der Erfindung darstellt und daher nicht als Einschränkung des Umfangs der Erfindung anzusehen ist. Die Erfindung wird anhand der beigefügten Zeichnung näher beschrieben und erläutert. Damit die Vorteile der vorliegenden Erfindung leicht verstanden werden, wird im Folgenden eine detaillierte Beschreibung der Erfindung in Verbindung mit der beigefügten Zeichnung erörtert, die jedoch nicht als Beschränkung des Umfangs der Erfindung auf die beigefügte Zeichnung angesehen werden sollten, in denen: Zeichnung 1 das Blockdiagramm eines intelligenten Systems zur Verfolgung persönlicher Finanzdaten auf der Grundlage der Blockchain zeigt.

#### DETAILLIERTE BESCHREIBUNG DER ZEICHNUNG

[0026] Die vorliegende Erfindung bezieht sich auf ein intelligentes Überwachungsgerät für den Transport von lebenden Fischen, das auf Sensoren des Internets der Dinge basiert.

[0027] Zeichnung 1 zeigt ein detailliertes Blockdiagramm eines intelligenten Systems zur Verfolgung persönlicher Finanzdaten auf der Grundlage der Blockchain.

[0028] Obwohl die vorliegende Offenbarung mit dem Ziel einer intelligenten Überwachungsrichtung für den Transport von lebenden Fischen auf der Grundlage von Internet-der-Dinge-Sensoren beschrieben wurde, sollte man sich darüber im Klaren sein, dass dies nur zur beispielhaften Veranschaulichung der Erfindung und zur Hervorhebung jedes anderen Zwecks oder jeder anderen Funktion erfolgt, für die die erläuterten Strukturen oder Konfigurationen verwendet werden könnten und die in den Anwendungsbereich der vorliegenden Offenbarung fallen.

[0029] Das intelligente Überwachungsgerät 10 für den Transport von lebenden Fischen auf der Grundlage von Internet-der-Dinge-Sensoren wird offengelegt.

[0030] Die intelligente Überwachungsrichtung 10 für den Transport von lebenden Fischen, die auf einem Internet der Dinge-Sensor basiert, umfasst eine Sauerstoffversorgungseinheit 11, einen Fischtankbeförderer 13, eine Sensoreinheit 14 und eine Verarbeitungseinheit 15.

[0031] Eine Sauerstoffversorgungseinheit 11 dient der Sauerstoffversorgung in einem Fischbecken 12.

[0032] Ein Fischtank-Beförderer 13 dient zum Transport des Fischtanks 12.

[0033] Es wird eine Auslieferungstransporteinrichtung verwendet, die das Fischbecken in der vertikalen Position greift und hält, mit der das Fischbecken 12 zur sukzessiven Auslieferung in die beliebige Richtungsposition in einer der vertikalen Position entsprechenden Auslieferungstransportrichtung transportiert werden kann.

[0034] Die Sensoreinheit 14 wird verwendet, um die Aktivität der Fische in einem Aquarium zu messen;

[0035] Die Verarbeitungseinheit 15 dient dazu, die vom Sensor empfangenen Informationen zu verarbeiten und die Sauerstoffversorgungseinheit im Fischtank 12 zusteuern.

[0036]

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Die Verarbeitungseinheit 15 erkennt den Sauerstoffbedarf anhand von verarbeiteten Informationen unter Verwendung von Computerbefehlen, die von dem Prozessor der Verarbeitungseinheit 15 verarbeitet werden.

[0037] Die Verarbeitungseinheit 15 steuert den Transport der gesamten Baugruppe durch das von einem mobilen Computergerät über eine Kommunikationseinheit 16 empfangene Signal.

[0038] Die Abbildung und die vorangehende Beschreibung zeigen Beispiele für Ausführungsformen. Der Fachmann wird verstehen, dass eines oder mehrere der beschriebenen Elemente durchaus zu einem einzigen Funktionselement kombiniert werden können. Alternativ dazu können bestimmte Elemente in mehrere Funktionselemente aufgeteilt werden. Elemente aus einer Ausführungsform können einer anderen Ausführungsform hinzugefügt werden. Die Reihenfolge der hier beschriebenen Prozesse kann beispielsweise geändert werden und ist nicht auf die hier beschriebene Weise beschränkt. Darüber hinaus müssen die Aktionen eines Blockdiagramms nicht in der gezeigten Reihenfolge ausgeführt werden, und es müssen auch nicht unbedingt alle Aktionen durchgeführt werden. Auch können diejenigen Handlungen, die nicht von anderen Handlungen abhängig sind, parallel zu den anderen Handlungen ausgeführt werden. Der Umfang der Ausführungsformen ist durch diese spezifischen Beispiele keineswegs begrenzt.

[0039] Obwohl Ausführungsformen der Erfindung in einer für strukturelle Merkmale und/oder Methoden spezifischen Sprache beschrieben wurden, sind die beigefügten Ansprüche nicht notwendigerweise auf die beschriebenen spezifischen Merkmale oder Methoden beschränkt. Vielmehr werden die spezifischen Merkmale und Methoden als Beispiele für Ausführungsformen der Erfindung offenbart.

Bezugszeichenliste

- 10 intelligentes Überwachungsgerät
- 11 Sauerstoffversorgungseinheit
- 12 Fischbecken
- 13 Fischtankbeförderer
- 14 Sensoreinheit
- 15 Verarbeitungseinheit
- 16 Kommunikationseinheit

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### ZITATE ENTHALTEN IN DER BESCHREIBUNG

[0000] Diese Liste der vom Anmelder aufgeführten Dokumente wurde automatisiert erzeugt und ist ausschließlich zur besseren Information des Lesers aufgenommen. Die Liste ist nicht Bestandteil der deutschen Patent- bzw. Gebrauchsmusteranmeldung. Das DPMA übernimmt keinerlei Haftung für etwaige Fehler oder Auslassungen.

Zitierte Patentliteratur

[0000] EP 3302074 [0005] WO 2016/192756 [0006] EP 2015/061993 PCT [0006] PA 201770858 [0008] US 2018/0160692 [0010] US 2016113298 A [0012] US 2018310575 A [0013] US 2017000094 A [0014] WO 2017213511 A1 [0015]

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[1] Eine intelligente Überwachungsrichtung für den Transport von lebenden Fischen, die auf einem Internet der Dinge-Sensor basiert, wobei die intelligente Überwachungsrichtung umfasst:

eine Sauerstoffversorgungseinheit, die zur Versorgung mit Sauerstoff in einem Behälter dient;

Fischbehälterbeförderer, der zum Befördern eines Fischbehälters verwendet wird, wobei eine Auslieferungstransporteinrichtung verwendet wird, die den Fischbehälter ergreift und in der vertikalen Position hält, mit der der Fischbehälter zur aufeinanderfolgenden Auslieferung in die beliebige Richtungsposition in einer Auslieferungstransportrichtung entsprechend der vertikalen Position transportiert werden kann;

eine Sensoreinheit, mit der die Aktivität der Fische in einem Aquarium gemessen werden kann;

eine Verarbeitungseinheit, die verwendet wird, um die von dem Sensor empfangenen Informationen zu verarbeiten und die Sauerstoffzufuhreinheit in dem Fischtank zu steuern, wobei die Verarbeitungseinheit den Sauerstoffbedarf unter Verwendung verarbeiteter Informationen unter Verwendung von Computerbefehlen, die von dem Prozessor der Verarbeitungseinheit verarbeitet werden, erkennt, wobei die Verarbeitungseinheit den Transport der gesamten Anordnung durch das von einem mobilen Computergerät unter Verwendung einer Kommunikationseinheit empfangene Signal steuert.

[2] Intelligente Überwachungsrichtung für den Transport von lebenden Fischen auf der Grundlage eines Sensors des Internets der Dinge nach Anspruch 1, wobei die Verarbeitungseinheit eine auf einem Mikrocontroller basierende Verarbeitungseinheit ist.

[3] Intelligente Überwachungsrichtung für den Transport von lebenden Fischen, die auf einem Sensor des Internets der Dinge nach Anspruch 1 basiert, wobei der Sensor ein visueller Sensor ist.

[4] Intelligente Überwachungsrichtung für den Transport von lebenden Fischen, die auf einem Internet der Dinge-Sensor nach Anspruch 1 basiert, wobei die Sensoreinheit zur Bildverarbeitung für die Aktivitätsüberwachung der Fische verwendet wird.

[5] Intelligente Überwachungsrichtung für den Transport von lebenden Fischen, basierend auf einem Internet-der-Dinge-Sensor nach Anspruch 1, wobei die Sauerstoffversorgungseinheit Sauerstoff in das Fischbecken einspeist.

Dieser Text wurde durch das DPMA aus Originalquellen übernommen. Er enthält keine Zeichnungen. Die Darstellung von Tabellen und Formeln kann unbefriedigend sein.

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# **SMART MONITORING APPARATUS FOR TRANSPORT OF ALIVE FISH BASED ON INTERNET OF THINGS SENSOR**

## **FIELD OF INVENTION**

The present invention relates to the field of internet of things based apparatus for transportation of fishes.

More particularly, the present invention is related to smart monitoring apparatus for transport of alive fish based on internet of things sensor.

## **BACKGROUND OF THE INVENTION**

The subject matter discussed in the background section should not be assumed to be prior art merely as a result of its mention in the background section. Similarly, a problem mentioned in the background section or associated with the subject matter of the background section should not be assumed to have been previously recognized in the prior art. The subject matter in the background section merely represents different approaches, which in-and-of-themselves may also be inventions.

In various applications within the fish industry there is a need for transport of fish from one location to another location, such as for vaccination, sorting, slaughtering, from ships to fish reservoirs or similar by the use of pump systems

Some of the prior work listed herewith:

1. 3302074 FISH DELIVERY DEVICE, FISH-TRANSFER SYSTEM EQUIPPED WITH SAID FISH DELIVERY DEVICE, AND METHOD FOR THE AUTOMATED DELIVERY OF FISH TO A FISH PROCESSING DEVICE EP - 11.04.2018 Int.Class A22C 25/08 Appl.No 15726136 Applicant NORDISCHER MASCHINENBAU Inventor PAULSOHN CARSTEN The invention relates to a fish delivery device (1) for delivering fish (9) to a fish processing device (7), comprising a delivery conveyor means (3) equipped with a controllable positioning drive (36) and a controllable conveying drive (36). By means of the positioning drive (35), the delivery conveyor means (3) is movable to a storage space (11) that is free of fish (9), to a first state, is movable to a second state for detecting, centered holding and conveying the fish (9), accessing said fish in the storage room (11), and to a third state in interaction with the conveying drive (36), in which after conveyance the fish (9) is released at a fish delivery point (42) that is defined by a controlled delivery time with associated fish delivery speed.

2.WO/2016/192756 FISH DELIVERY DEVICE, FISH-TRANSFER SYSTEM EQUIPPED WITH SAID FISH DELIVERY DEVICE, AND METHOD FOR THE AUTOMATED DELIVERY OF FISH TO A FISH PROCESSING DEVICE WO - 08.12.2016 Int.Class A22C 25/08 Appl.No PCT/EP2015/061993 Applicant NORDISCHER MASCHINENBAU RUD. BAADER GMBH + CO. KG Inventor PAULSOHN, Carsten The invention relates to a fish delivery device (1) for delivering fish (9) to a fish processing device (7), comprising a delivery conveyor means (3) equipped with a controllable positioning drive (36) and a controllable conveying drive (36). By means of the positioning drive (35), the delivery conveyor means (3) is movable to a storage space (11) that is free of fish (9), to a first state, is movable to a second state for detecting, centered holding and conveying the fish (9), accessing said



fish in the storage room (11), and to a third state in interaction with the conveying drive (36), in which after conveyance the fish (9) is released at a fish delivery point (42) that is defined by a controlled delivery time with associated fish delivery speed.

179582 FISH DELIVERY DEVICE, FISH TRANSFER SYSTEM EQUIPPED WITH SAID FISH DELIVERY DEVICE AND METHOD FOR THE AUTOMATED DELIVERY OF FISH TO A FISH PROCESSING DEVICE DK - 27.11.2017 Int. Class A22C 25/08 Appl. No PA 2017 70858 Applicant Inventor Carsten Paulsohn A fish feed-in device (1) for feeding fish (9) to a fish processing device (7) comprises a delivery conveying means (3) which is equipped with a controllable positioning drive (35) and a controllable conveying drive (36). The delivery conveying means (3) can be moved by the controllable positioning drive (35) into a first state (301) released by the fish (9) in a deposit space (11), into a second state (302) for grasping, centred holding and conveying of the fish (9) accessing said fish in the deposit space (11) and, in cooperation with the controllable conveying drive (36), into a third state (303) which releases the fish (9) after conveying at a fish delivery point (42) which is defined by a controlled delivery time with associated controlled fish delivery speed.

4.2985671 FISH DELIVERY DEVICE, FISH-TRANSFER SYSTEM EQUIPPED WITH SAID FISH DELIVERY DEVICE AND METHOD FOR THE AUTOMATED DELIVERY OF FISH TO A FISH PROCESSING DEVICE CA - 08.12.2016 Int. Class A22C 25/08 Appl. No 2985671 Applicant ORDISCHER MASCHINENBAU RUD. BAADER GMBH + CO. KG Inventor The invention relates to a fish delivery device (1) for delivering fish (9) to a fish processing device (7), comprising a delivery conveyor means (3) equipped with a controllable positioning drive (35) and a controllable conveying drive (36). By means of the positioning drive (35), the delivery conveyor

means (3) is movable to a storage space (11) that is free of fish (9), to a first state, is movable to a second state for detecting, centered holding and conveying the fish (9), accessing said fish in the storage room (11), and to a third state in interaction with the conveying drive (36), in which after conveyance the fish (9) is released at a fish delivery point (42) that is defined by a controlled delivery time with associated fish delivery speed.

5.20180160692 FISH DELIVERY DEVICE, FISH-TRANSFER SYSTEM EQUIPPED WITH SAID FISH DELIVERY DEVICE, AND METHOD FOR THE AUTOMATED DELIVERY OF FISH TO A FISH PROCESSING DEVICE US - 14.06.2018 Int.Class A22C 25/00 Appl.No 15578175 Applicant ordischer Maschinenbau Rud. Baader GmbH + Co. KG Inventor Carsten Paulsohn A fish feed-in device (1) for feeding fish (9) to a fish processing device (7) comprises a delivery conveying means (3) which is equipped with a controllable positioning drive (35) and a controllable conveying drive (36). The delivery conveying means (3) can be moved by the controllable positioning drive (35) into a first state (301) released by the fish (9) in a deposit space (11), into a second state (302) for grasping, centered holding and conveying of the fish (9) accessing said fish in the deposit space (11) and, in cooperation with the controllable conveying drive (36), into a third state (303) which releases the fish (9) after conveying at a fish delivery point (42) which is defined by a controlled delivery time with associated controlled fish delivery speed.

6.2172922 DEVICE FOR THE AUTOMATIC REGULATED TRANSFER OF FISH TO A FISH PROCESSING MACHINE CA - 30.09.1996 nt.Class A22C 25/08 Appl.No 2172922 Applicant Inventor GROSSEHOLZ, WERNER An apparatus for the automatic regulated transfer of fish to a fish processing machine is described.

To ensure that the correct orientation of the fish is guaranteed during such a transfer, the apparatus comprises a conveyor with a travelling grating for receiving fish in bulk and separating them, an aligning device with a turning device for aligning the fish in a uniform longitudinal orientation, a device for aligning the fish in a uniform lateral orientation, a timing device for individually receiving and synchronously delivering the fish to a transverse conveyor comprising troughs for receiving the fish, a measuring station with an optical measurement sensor for monitoring the lateral orientation of the fish and a turning mechanism, which is controlled by the measurement sensor to turn incorrectly positioned fish about their longitudinal axes during their conveyance in the troughs...

In US2016113298A is described a pumping system including a pipe section having a uniform inside diameter, and a production water piping circuit connected to branch pipes on the upstream and downstream ends of the pipe section, forming a loop with the pipe section. The production water circuit comprises a pump and valves for pumping production water into the pipe section through the inlet branch pipe and out through the outlet branch pipe. There is also provided a method for pumping upload water and fish along the pipe section, comprising the steps of drawing production water out of the pipe section through the downstream end of the pipe section, and simultaneously inducing a flow of upload water and fish through the pipe section. The method also includes the step of pumping production water into an upstream end of the pipe section and causing a flow of upload water and fish along the pipe section.

US2018310575A discloses a method and system for moving killed fish in a pipe or pipeline, comprising water and supply of pressurized air or water pressure or both

to create zones having different properties in the pipe or pipeline to form a controllable water flow for propulsion of and controlled retention time of fish in the pipe or pipeline.

From US2017000094A is known a segmented fish pump system. The segmented fish pump system includes a series of booster pump segments stacked upon an intake pump segment, forming an enclosed stream throughout, wherein each booster pump segment induces further upward flow, thereby minimizing the pressure and velocity needed for the intake pump of the intake pump segment. As a result, lessening trauma to fragile aquatic life at collection and further providing a nautical environment within the enclosed stream for the aquatic life to be transported, as well as self-propelled to higher elevations.

In WO2017213511A1 is described a method and system for pumping particles in a liquid, in particular living fish in water, where a chamber draws a liquid and particles up from a liquid volume through a closed duct, the chamber being connected to the suction side of an ejector and a pump for formation of a sub-pressure in the chamber. At the same time, gas supplied from the compressor to the liquid column in the chamber contributes further to the acceleration of liquid flow through the chamber. The ejector is driven by a liquid flow from the pump or of gas from the compressor. The closed duct is connected to a non-return valve or check valve, preventing liquid and particles from returning to the liquid volume. Liquid and particles are transferred out of the chamber and through the ejector and then into a closed duct to the receiving unit. The system also comprises an external supply line, which is controlled by means of a valve on the external supply line and a valve on the supply from a chamber. The external supply is used for example for cleaning of the system with pure or clean water,

filling of water at start-up and operation of an ejector in cases, when particles may have a tendency to clog an outlet.

However, a common feature of these systems is that they do not provide a fully automatic solution in relation to a processing station or receiving reservoir or storage container receiving the transported alive fish. A further drawback is that they do not provide an even flow of alive fish delivered to the processing station or receiving reservoir or storage container..

Groupings of alternative elements or embodiments of the invention disclosed herein are not to be construed as limitations. Each group member can be referred to and claimed individually or in any combination with other members of the group or other elements found herein. One or more members of a group can be included in, or deleted from, a group for reasons of convenience and/or patentability. When any such inclusion or deletion occurs, the specification is herein deemed to contain the group as modified, thus fulfilling the written description of all Markus groups used in the appended claims.

As used in the description herein and throughout the claims that follow, the meaning of "a," "an," and "the" includes plural reference unless the context clearly dictates otherwise. Also, as used in the description herein, the meaning of "in" includes "in" and "on" unless the context clearly dictates otherwise.

The recitation of ranges of values herein is merely intended to serve as a shorthand method of referring individually to each separate value falling within the range. Unless otherwise indicated herein, each individual value is incorporated into the specification as if it were individually recited herein. All methods described herein can

be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context.

The use of any and all examples, or exemplary language (e.g. "Such as") provided with respect to certain embodiments herein is intended merely to better illuminate the invention and does not pose a limitation on the scope of the invention otherwise claimed. No language in the specification should be construed as indicating any non-claimed element essential to the practice of the invention.

The above information disclosed in this Background section is only for the enhancement of understanding of the background of the invention and therefore it may contain information that does not form the prior art that is already known in this country to a person of ordinary skill in the art.

## **SUMMARY**

Before the present systems and methods are described, it is to be understood that this application is not limited to the particular systems, and methodologies described, as there can be multiple possible embodiments which are not expressly illustrated in the present disclosure. It is also to be understood that the terminology used in the description is for the purpose of describing the particular versions or embodiments only and is not intended to limit the scope of the present application.

The present invention mainly cures and solves the technical problems existing in the prior art. In response to these problems, the present invention discloses Smart monitoring apparatus for transport of alive fish based on internet of things sensor.

As one aspect of the present invention is to presents "A smart monitoring apparatus for transport of alive fish based on internet of things sensor, wherein the smart monitoring apparatus comprising : A oxygen supply unit, used to supply the oxygen in a fish tank ; a Fish tank conveyor , used for conveying a fish tank; means for transporting one by one the fishes of the fish mass received from the conveyor; A sensor unit, used to sense the activity of the fish inside of a fish tank; a delivery transport means gripping and holding the fish tank in the vertical position, with which the fish tank can be transported for successive delivery in the any direction position in a delivery transport direction corresponding to the vertical position; and A processing unit, used to process the information received from the sensor and control the oxygen supply unit in the fish tank, wherein the processing unit recognize the demand of oxygen using processed information using computer instruction processed by the processor of the processing unit, wherein the processing unit controls the transport of the whole assembly by the signal received from a mobile computing device using a communication unit..."

### **BRIEF DESCRIPTION OF DRAWINGS**

To clarify various aspects of some example embodiments of the present invention, a more particular description of the invention will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. It is appreciated that these drawings depict only illustrated embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail through the use of the accompanying drawings.

In order that the advantages of the present invention will be easily understood, a detailed description of the invention is discussed below in conjunction with the appended drawings, which, however, should not be considered to limit the scope of the invention to the accompanying drawings, in which:

Figure 1 shows block diagram representation of Intelligent system for tracking personal financial data based on block chain.

### **DETAIL DESCRIPTION**

The present invention is related to Smart monitoring apparatus for transport of alive fish based on internet of things sensor.

Figure 1 shows detail block diagram representation of Intelligent system for tracking personal financial data based on block chain.

Although the present disclosure has been described with the purpose of Smart monitoring apparatus for transport of alive fish based on internet of things sensor, it should be appreciated that the same has been done merely to illustrate the invention in an exemplary manner and to highlight any other purpose or function for which explained structures or configurations could be used and is covered within the scope of the present disclosure.

The Smart monitoring apparatus 10 for transport of alive fish based on internet of things sensor is disclosed .

The smart monitoring apparatus 10 for transport of alive fish based on internet of things sensor, comprising a oxygen supply unit 11, a fish tank conveyor 13 , a sensor unit 14 and a processing unit 15.

A oxygen supply unit 11 is used to supply the oxygen in a fish tank 12.



A Fish tank conveyor 13 is used for conveying the fish tank 12.

A delivery transport means is used gripping and holding the fish tank in the vertical position, with which the fish tank 12 can be transported for successive delivery in the any direction position in a delivery transport direction corresponding to the vertical position;

The sensor unit 14 is used to sense the activity of the fish inside of a fish tank;

The processing unit 15 is used to process the information received from the sensor and control the oxygen supply unit in the fish tank 12.

The processing unit 15 recognize the demand of oxygen using processed information using computer instruction processed by the processor of the processing unit 15.

The processing unit 15 controls the transport of the whole assembly by the signal received from a mobile computing device using a communication unit 16.

The figures and the foregoing description give examples of embodiments. Those skilled in the art will appreciate that one or more of the described elements may well be combined into a single functional element. Alternatively, certain elements may be split into multiple functional elements. Elements from one embodiment may be added to another embodiment. For example, order of processes described herein may be changed and are not limited to the manner described herein. Moreover, the actions of any block diagram need not be implemented in the order shown; nor do all of the acts need to be necessarily performed. Also, those acts that are not dependent on other acts may be performed in parallel with the other acts. The scope of embodiments is by no means limited by these specific examples.

Although implementations of the invention have been described in a language specific to structural features and/or methods, it is to be understood that the appended

claims are not necessarily limited to the specific features or methods described. Rather, the specific features and methods are disclosed as examples of implementations of the invention.

## CLAIMS

### We claim:

1. A smart monitoring apparatus for transport of alive fish based on internet of things sensor, wherein the smart monitoring apparatus comprising :  
A oxygen supply unit, used to supply the oxygen in a container  
a Fish tank conveyor , used for conveying a fish tank, wherein a delivery transport means is used gripping and holding the fish tank in the vertical position, with which the fish tank can be transported for successive delivery in the any direction position in a delivery transport direction corresponding to the vertical position;  
A sensor unit, used to sense the activity of the fish inside of a fish tank;  
A processing unit, used to process the information received from the sensor and control the oxygen supply unit in the fish tank, wherein the processing unit recognise the demand of oxygen using processed information using computer instruction processed by the processor of the processing unit, wherein the processing unit controls the transport of the whole assembly by the signal received from a mobile computing device using a communication unit.
2. The smart monitoring apparatus for transport of alive fish based on internet of things sensor as claimed in claim 1, the processing unit is microcontroller based processing unit.
3. The smart monitoring apparatus for transport of alive fish based on internet of things sensor as claimed in claim 1, The sensor is a visual sensor.

4. The smart monitoring apparatus for transport of alive fish based on internet of things sensor as claimed in claim 1, The sensor unit is used image processing for the activity monitor of the fish.

5. The smart monitoring apparatus for transport of alive fish based on internet of things sensor as claimed in claim 1, the oxygen supply unit supply oxygen in the fish tank..

**SMART MONITORING APPARATUS FOR TRANSPORT OF ALIVE FISH  
BASED ON INTERNET OF THINGS SENSOR**

**ABSTRACT**

The present invention relates to Smart monitoring apparatus for transport of alive fish based on internet of things sensor. The objective of the present invention is to solve the problems in the prior art technologies related to transportation of live fishes from one place to another. The apparatus for automatic transportation of alive fish from a water-filled fish reservoir or storage container to a processing station or receiving reservoir or storage container.

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202111043019 A

(19) INDIA

(22) Date of filing of Application :22/09/2021

(43) Publication Date : 15/10/2021

(54) Title of the invention : AUTOMATIC FRAUD DETECTION IN MOBILE MONEY TRANSACTIONS USING MACHINE LEARNING

(51) International classification :G06Q 30/00  
(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

(71)Name of Applicant :

1)Dr. Shalini Puri, Assistant Professor (Senior Grade)  
Address of Applicant :Manipal University, Jaipur-Ajmer Express Highway, Dehmi Kalan, Near GVK Toll Plaza, Jaipur, Rajasthan 303007, India -----

2)Dr. Meenakshi Nawal, Associate Professor

3)Rohit Goyal, Assistant Professor

4)Dr. Sumita Gupta, Associate Professor

5)Tushar Mehrotra, Assistant Professor

6)Amit Kumar, Assistant Professor

7)Alok Misra, Principal

8)Neha Verma, Assistant Professor

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Dr. Shalini Puri, Assistant Professor (Senior Grade)  
Address of Applicant :Manipal University, Jaipur-Ajmer Express Highway, Dehmi Kalan, Near GVK Toll Plaza, Jaipur, Rajasthan 303007, India -----

2)Dr. Meenakshi Nawal, Associate Professor  
Address of Applicant :Swami Keshvanand Institute of Technology Management & Gramothan Ramnagar, Jagatpura, Jaipur-302 017, Rajasthan -----

3)Rohit Goyal, Assistant Professor  
Address of Applicant :Himgiri Zee University, P.O. Sherpur, Chakarata Rd, Dehradun, Uttarakhand 248197, India. -----

4)Dr. Sumita Gupta, Associate Professor  
Address of Applicant :Swami Keshvanand Institute of Technology Management & Gramothan, Ramnagar, Jagatpura, Jaipur-302 017, Rajasthan, India. -----

5)Tushar Mehrotra, Assistant Professor  
Address of Applicant :College of Computing Sciences & IT, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India -----

6)Amit Kumar, Assistant Professor  
Address of Applicant :Himgiri Zee University, P.O. Sherpur, Chakarata Rd, Dehradun, Uttarakhand 248197, India. -----

7)Alok Misra, Principal  
Address of Applicant :Gust Polytechnic, Narendra Nagar, Narendra Nagar, Dehradun, Uttarakhand 249175, India -----

8)Neha Verma, Assistant Professor  
Address of Applicant :Indraprastha Engineering College, Ghaziabad, Uttar Pradesh 201010, India. -----

(57) Abstract :

Our Invention "Automatic Fraud Detection in Mobile Money Transactions Using Machine Learning" is this review investigates a successful information digging framework for extortion location in versatile monetary exchanges. Endeavoring two wide utilized administered AI models, arbitrary timberland and inclination boosting, the review intends to test and look at their appropriateness in the location of false records. Both arrangement models were created utilizing a manufactured dataset of portable cash exchanges, which was produced dependent on an example of genuine exchanges removed from a global versatile cash administration organization. Indeed, benefits, for example, these make Fintech progressively well known among customers. Be that as it may, since Fintech exchanges are comprised of data, guaranteeing security turns into a basic issue. Weaknesses in such frameworks allow them to remain uncovered to fake demonstrations, which cause extreme harm to customers and suppliers the same. Consequently, strategies from the space of Machine Learning (ML) are applied to recognize peculiarities in Fintech applications. They target dubious movement in monetary datasets and create models to expect future cheats.

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



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Ministry of Commerce & Industry,  
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(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202111043019
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	22/09/2021
APPLICANT NAME	1 . Dr. Shalini Puri, Assistant Professor (Senior Grade) 2 . Dr. Meenakshi Nawal, Associate Professor 3 . Rohit Goyal, Assistant Professor 4 . Dr. Sunita Gupta, Associate Professor 5 . Tushar Mehrotra, Assistant Professor 6 . Amit Kumar, Assistant Professor 7 . Alok Misra, Principal 8 . Neha Verma, Assistant Professor
TITLE OF INVENTION	AUTOMATIC FRAUD DETECTION IN MOBILE MONEY TRANSACTIONS USING MACHINE LEARNING
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	dr.bksarkar2003@yahoo.in
ADDITIONAL-EMAIL (As Per Record)	dr.bksarkar2003@yahoo.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	15/10/2021

#### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

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➡ Filed ➡ Published ➡ RQ Filed ➡ Under Examination ➡ Disposed

In case of any discrepancy in status, kindly contact [ipo-helpdesk@nic.in](mailto:ipo-helpdesk@nic.in)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202131026317 A

(19) INDIA

(22) Date of filing of Application :14/06/2021

(43) Publication Date : 09/07/2021

(54) Title of the invention : A NOVEL SOLAR ASSISTED DEFLUORIDATION DEVICE USING LANGMUIR ISOTHERM MODEL FOR FLUORIDE FREE DRINKING WATER.

(51) International classification	:C02F0101140000, F24S0010400000, H02S0020300000, C02F0001140000, F24D0017000000	(71)Name of Applicant : 1)DR.SWAPNILA ROY Address of Applicant :AT-HATAMALA, P.O-BANDALO, VIA TIGIRIA, DIST-CUTTACK, ODISHA-759030 Orissa India 2)MAHUYA DAS 3)DR.ARUN SOLANKI 4)DR.SHWETA TRIPATHI 5)DR. ANUJ KUMAR SINGH 6)MR.SANDEEPAN SAHA 7)DEEPAK KUMAR 8)DR.SHASHANK SRIVASTAV 9)MANU PHOGAT 10)DR.PANKAJ DADHEECH 11)SUBHAJIT KUNDU 12)DR.SAYAN ROY CHOWDHURY
(31) Priority Document No	:NA	(72)Name of Inventor : 1)DR.SWAPNILA ROY 2)MAHUYA DAS 3)DR.ARUN SOLANKI 4)DR.SHWETA TRIPATHI 5)DR. ANUJ KUMAR SINGH 6)MR.SANDEEPAN SAHA 7)DEEPAK KUMAR 8)DR.SHASHANK SRIVASTAV 9)MANU PHOGAT 10)DR.PANKAJ DADHEECH 11)SUBHAJIT KUNDU 12)DR.SAYAN ROY CHOWDHURY
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(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	

(57) Abstract :

Fluoride tainting in water may create ecological dangers. In this examination, the combination of bio diminished graphene oxide (TPGO,50%) and calcium impregnated silica joined with titanium dioxide (Ca-SiO<sub>2</sub>-TiO<sub>2</sub>,50%) were utilized for fluoridation limit which was investigated. The ideal conditions for the boundaries like adsorbent portion, temperature, and contact time to research the fluoride expulsion proficiency. It was seen that the incorporated item have higher de-fluoridation effectiveness. The balance information for de-fluoridation by bio diminished graphene oxide (TPGO) and calcium impregnated silica joined with titanium dioxide (Ca-SiO<sub>2</sub>-TiO<sub>2</sub>) were best fitted to the Langmuir isotherm model. The test results were applied to get factual investigation. The outcomes proposed that there was a nearer communication among exploratory and hypothetical outcomes. Generally, the combination of those adsorbents were an earth kind and savvy alternative for defluoridation. This eco agreeable methodology is used in sun based helped electronic defluoridation gadget which comprises of sun based board, programmed stirrerconnected with DC Motor) with filtration unit so fluoride free water will be acquired for drinking reason by enormous mass. From the viewpoint of pragmatic application, the water supply framework which is straightforwardly associated with tube well or artesian well, the defluoridation gadget will be added there to get fluoride free drinking water for utilization. Along these lines, it very well might be inferred that this creative and practical gadget will be helpful for society.

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





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 Ministry of Commerce & Industry,  
 Government of India

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(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202131026317
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	14/06/2021
APPLICANT NAME	1 . DR.SWAPNILA ROY 2 . MAHUYA DAS 3 . DR.ARUN SOLANKI 4 . DR.SHWETA TRIPATHI 5 . DR. ANUJ KUMAR SINGH 6 . MR.SANDEEPAN SAHA 7 . DEEPAK KUMAR 8 . DR.SHASHANK SRIVASTAV 9 . MANU PHOGAT 10 . DR.PANKAJ DADHEECH 11 . SUBHAJIT KUNDU 12 . DR.SAYAN ROY CHOWDHURY
TITLE OF INVENTION	A NOVEL SOLAR ASSISTED DEFLUORIDATION DEVICE USING LANGMUIR ISOTHERM MODEL FOR FLUORIDE FREE DRINKING WATER.
FIELD OF INVENTION	CHEMICAL
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	ramesh.panda.mech@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	14/06/2021
PUBLICATION DATE (U/S 11A)	09/07/2021



Australian Government

IP Australia

# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2020104116

The Commissioner of Patents has granted the above patent on 17 February 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

V. D. Ambeth Kumar of Professor, Deptt of Computer Science, & Engineering Panimalar Engineering College, Anna University, Chennai 600123 India

MALLELA BHARATH of No 1 railway colony 1st Street s2, westorn park Nelsonmanikkam road Chennai 600094 India

S. Malathi of Department of Computer Science &, Engineering Panimalar Engineering, College Anna University Chennai 600123 India

D. Elangovan of Department of Computer Science &, Engineering, Panimalar Engineering College Anna University Chennai 600123 India

Abhishek Kumar of Banaras Hindu University Varanasi Uttar Pradesh India

Vijay R of 7/257, Soorappallam Sarel Post Kanyakumar 629203 India

Chitra B of Plot no: 92, Door no: 5, Pattammal Street, Krishnapuram Ambattur Chennai 600053 India

V. D. Ashok Kumar of CSE St.Peter's University Chennai India

S. Pushpa of CSE St.Peter's University Chennai India

Ankit Kumar of Computer Science and Engineering Swami Keshvanand Institute of Technology Management & Gramothan India

Alok Kumar Singh Kushwaha of Department of Computer Science & Engineering Guru Ghasidas Vishwavidyalay Bilaspur India

R. Manish of Computer Science and Engineering, Panimalar Engineering College Anna University Chennai India

**Title of invention:**

HOLONOMIC DRIVE CONVEYOR SYSTEM AND ITS METHOD USING IOT

**Name of inventor(s):**

Kumar, V. D. Ambeth; BHARATH, MALLELA; Malathi, S.; Elangovan, D.; Kumar, Abhishek; R, Vijay; B, Chitra; Kumar, V. D. Ashok; Pushpa, S.; Kumar, Ankit; Kushwaha, Alok Kumar Singh and Manish, R.

**Term of Patent:**

Eight years from 16 December 2020

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 17<sup>th</sup> day of February 2021

Commissioner of Patents

PATENTS ACT 1990

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GEOGRAPHICAL INDICATIONS

(<http://ipindia.nic.in/index.htm>)

### Application Details

APPLICATION NUMBER	202041026847
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	24/06/2020
APPLICANT NAME	1 . Dr.A.N.Swaminathen 2 . Gourav Purohit 3 . Aarupadai Veedu Institute Of Technology, Vinayaka Missions Research Foundation (Deemed to be University) 4 . Vinayaka Mission's Research Foundation (Deemed To Be University) 5 . Sachin Sharma 6 . Dr.V.S.Sethuraman 7 . Dr. L.K.Rex 8 . Dr. R. Vidya 9 . P.Dinesh Kumar 10 . S.Ramesh 11 . Akash Johari 12 . Dr.P.Rajaram 13 . Dr.S.Sudhakar
TITLE OF INVENTION	DURABILITY RESPONSE OF HIGH-PERFORMANCE CONCRETE WITH METAKAOLIN AND RICE HUSK ASH
FIELD OF INVENTION	CHEMICAL
E-MAIL (As Per Record)	answaminathen@gmail.com
ADDITIONAL-EMAIL (As Per Record)	answaminathen@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	10/07/2020

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041007612  
A

(19) INDIA

(22) Date of filing of Application :23/02/2020

(43) Publication Date : 28/02/2020

(54) Title of the invention : IOT BASED REAL-TIME FUEL EFFICIENCY AND MONITORING SYSTEM FOR A SMART VEHICLE USING MOBILE DEVICE

(51)  
International Classification :G06Q0050060000,G01F0023200000,A63B0024000000,G06Q0010060000,G01F0023296000  
(31) Priority Document :NA  
No  
(32) Priority Date :NA  
(33) Name of priority country :NA  
(86) International Application No :NA  
Filing Date  
(87) International Publication No :NA  
(61) Patent of Addition to Application Number :NA  
Filing Date  
(62) Divisional to Application Number :NA  
Filing Date

(71)Name of Applicant :  
1)Dr.S.Sudhakar  
Address of Applicant :Professor,  
Sree Sakthi Engineering College,  
Karamadai, Coimbatore Tamil Nadu  
India  
2)Dr. Pankaj Dadheech  
3)Dr.V. Priya  
4)Dr.A.Sagai Francis Britto  
5)Mr.S.Ramesh  
6)Mrs.M.Divyapushapalakshmi  
7)Mr.V.Ramachandran  
8)Mr.Ankit Kumar  
9)Mr.R.Parthiban  
10)Dr.Hemant Dhabhai  
(72)Name of Inventor :  
1)Dr.S.Sudhakar  
2)Dr. Pankaj Dadheech  
3)Dr.V. Priya  
4)Dr.A.Sagai Francis Britto  
5)Mr.S.Ramesh  
6)Mrs.M.Divyapushapalakshmi  
7)Mr.V.Ramachandran  
8)Mr.Ankit Kumar  
9)Mr.R.Parthiban  
10)Dr.Hemant Dhabhai

(57) Abstract :

To facilitate the need for an effective transport system for goods, this invention describes solutions for real-time tracking and fuel control, which considered being the main problems that most truck companies want to address. Through keeping a fast track with fuel consumption and intake, vehicles made more effective in terms of cost and fuel. These can achieve by data grouping and remote monitoring devices installed in the fuel storage tank position. The primary goal of the invention is to recognize the particular quantity of the remaining gas in the fuel tank and how much distance it can travel. They can also locate nearby petrol pumps, and it will also mean that the petrol pumps are out of or not. The graphical display will indicate how much fuel is in the fuel tank and how much added, and the total amount of fuel in the fuel tank will be evidence of any wrongdoing committed by the ones who fill the fuel. Use the speed sensor and terrain sensor; using this entire system helps monitor their mileage. The perception of the graphics helps the user understand better. This system uses GSM, GPS Module Ultrasonic Sensor & SIM808. In this device, the owner gets information about fuel content in the tank via PIC 16F877A, Microcontroller, SIM808 GSM GPS module, LCD and keypad included in the system. This smart system gives fuel consumption 24x7 access, warnings when the tank fuel level unexpectedly decreases.

No. of Pages : 12 No. of Claims : 5



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Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041007612
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	23/02/2020
APPLICANT NAME	1 . Dr.S.Sudhakar 2 . Dr. Pankaj Dadheech 3 . Dr.V. Priya 4 . Dr.A.Sagai Francis Britto 5 . Mr.S.Ramesh 6 . Mrs.M.Divyapushapalakshmi 7 . Mr.V.Ramachandran 8 . Mr.Ankit Kumar 9 . Mr.R.Parthiban 10 . Dr.Hemant Dhabhai
TITLE OF INVENTION	IOT BASED REAL-TIME FUEL EFFICIENCY AND MONITORING SYSTEM FOR A SMART VEHICLE USING MOBILE DEVICE
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	sudhasengan@gmail.com
ADDITIONAL-EMAIL (As Per Record)	sudhasengan@gmail.com
E-MAIL (UPDATED Online)	sudhasengan@gmail.com
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	23/02/2020
PUBLICATION DATE (U/S 11A)	28/02/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041005771 A

(19) INDIA

(22) Date of filing of Application :10/02/2020

(43) Publication Date : 21/02/2020

(54) Title of the invention : AUTOMATED NON INVASIVE BLOOD GROUP DETERMINATION AND CHOLESTEROL LEVEL USING IOT

(51)

International :A61B0005000000,G01N0033800000,G01N0001300000,C07K0016340000,G01N0033580000

classification

(31) Priority

Document :NA

No

(32) Priority

Date

(33) Name

of priority :NA

country

(86)

International

Application :NA

No

Filing

Date

(87)

International

Publication :NA

No

(61) Patent

of Addition

to

Application :NA

Number :NA

Filing

Date

(62)

Divisional to

Application :NA

Number :NA

Filing

Date

(71)Name of Applicant :

1)Dr.S.Sudhakar

Address of Applicant :Professor Department of  
Computer Science & Engineering, Sree Sakthi  
Engineering College, Karamadai, Coimbatore 641  
104,Tamil Nadu, India Tamil Nadu India

2)Dr.S.Raju

3)Dr. Pankaj Dadhech

4)Dr.V. Priya

5)Mr.V.Vinoth Kumar

6)Dr. T. Avudaiappan

7)Dr A Syed Musthafa

8)Dr C.Nallusamy

9)Dr.K.Prasanth

10)Dr.E.Punarselvam

(72)Name of Inventor :

1)Dr.S.Sudhakar

2)Dr.S.Raju

3)Dr. Pankaj Dadhech

4)Dr.V. Priya

5)Mr.V.Vinoth Kumar

6)Dr. T. Avudaiappan

7)Dr A Syed Musthafa

8)Dr C.Nallusamy

9)Dr.K.Prasanth

10)Dr.E.Punarselvam

(57) Abstract :

The monitoring system of the patient's health status is a demanding job in the home. In particular, old age patients ought to be checked regularly, and their dear most ones need to be stated during a work period about their health status periodically. An individual's blood group is composed of Red Blood Cell antigens, whose composition is determined by gene sequence, protein presence, and antigen structure. The proposed invention is a non-invasive approach to classify the blood cells group without perforating the tissue. Light serves as a channel for optical signals that can pass through the palm and measures the changing voltage. In this system, a smart patient health monitoring program is put forward, using sensors and microcontrollers to monitor patient health and send alert notifications to the mobile phone for the patient. Cholesterol levels, as well as blood glucose levels, are used in the application system, helps to keep continuous monitoring of patient health. The IoT-based patient health tracking system efficiently utilizes the Internet for monitoring to save patient's lives and their health to prevent emergencies. The approach provides a method for automatically determining the type of human blood by applying image processing algorithms to the optically obtained images of the skin surface underlying superficial capillaries. The technique embeds the Multi-Wavelength Light scattering system as light passes through capillaries to dynamically distinguish blood cells on the Red Blood Cell surface, based on specific antigens. The primary detector structure is created by the portable optical system (camera) along with the photo-detectors. Used to detect the distribution/pattern of scattered light produced by the blood cells to determine the type of blood without taking blood samples from the body. The proposed model intended to create an embedded system to execute blood tests based on Rh and ABO blood typing systems using Image Processing methods.

No. of Pages : 18 No. of Claims : 7



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Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041005771
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	10/02/2020
APPLICANT NAME	1 . Dr.S.Sudhakar 2 . Dr.S.Raju 3 . Dr. Pankaj Dadheech 4 . Dr.V. Priya 5 . Mr.V.Vinoth Kumar 6 . Dr. T. Avudaiappan 7 . Dr A Syed Musthafa 8 . Dr C.Nallusamy 9 . Dr.K.Prasanth 10 . Dr.E.Punarselvam
TITLE OF INVENTION	AUTOMATED NON INVASIVE BLOOD GROUP DETERMINATION AND CHOLESTEROL LEVEL USING IOT
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	sudhasengan@gmail.com
ADDITIONAL-EMAIL (As Per Record)	sudhasengan@gmail.com
E-MAIL (UPDATED Online)	sudhasengan@gmail.com
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	10/02/2020
PUBLICATION DATE (U/S 11A)	21/02/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application  
No.202031013658 A

(19) INDIA

(22) Date of filing of Application :28/03/2020

(43) Publication Date : 15/05/2020

(54) Title of the invention : SYSTEM AND METHOD FOR REAL TIME MONITORING AND PREDICTING HEART HEALTH PERFORMANCE

(51)  
International : A61B0005110000.A61B0005000000.G01N0033500000.G05B0023020000.A61B0005046400  
classification  
(31) Priority  
Document :NA  
No  
(32) Priority :NA  
Date  
(33) Name  
of priority :NA  
country  
(86)  
International  
Application :NA  
No :NA  
Filing  
Date  
(87)  
International  
Publication :NA  
No  
(61) Patent  
of Addition  
to  
Application :NA  
Number :NA  
Filing  
Date  
(62)  
Divisional to  
Application :NA  
Number :NA  
Filing  
Date

(71)Name of Applicant :  
1)Biswa Ranjan Acharya  
Address of Applicant :School of  
Computer Engineering, KIIT Deemed  
to be University, Bhubaneswar, India  
Orissa India  
2)Dr. Pankaj Dadheech  
3)Puja Das  
4)Dr. Deepti Bala Mishra  
5)Satya Ranjan Dash  
6)Dr. Mhhammad Israr  
7)Suresh Chandra Moharana  
8)Anupama Baral  
9)Asik Rahaman Jamader  
(72)Name of Inventor :  
1)Biswa Ranjan Acharya  
2)Dr. Pankaj Dadheech  
3)Puja Das  
4)Dr. Deepti Bala Mishra  
5)Satya Ranjan Dash  
6)Dr. Mohammad Israr  
7)Suresh Chandra Moharana  
8)Anupama Baral  
9)Asik Rahaman Jamader

(57) Abstract :

The present invention is related to a system and method for real time monitoring and predicting heart health performance. The principal objective of the present invention to solve the inadequacies in prior art related technologies and design of system for real time monitoring and predicting human heart health performance. The present system and method is used for detecting heart routine, description and irregularity herein. The system and method examine and illustrate cardiac current condition by electrophysiological signals that assist to analysis of arrhythmias in advance of a heart failure.

No. of Pages : 30 No. of Claims : 6





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Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202031013658
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	28/03/2020
APPLICANT NAME	1 . Biswa Ranjan Acharya 2 . Dr. Pankaj Dadheech 3 . Puja Das 4 . Dr. Deepti Bala Mishra 5 . Satya Ranjan Dash 6 . Dr. Mohammad Israr 7 . Suresh Chandra Moharana 8 . Anupama Baral 9 . Asik Rahaman Jamader
TITLE OF INVENTION	SYSTEM AND METHOD FOR REAL TIME MONITORING AND PREDICTING HEART HEALTH PERFORMANCE
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	patentminder@gmail.com
ADDITIONAL-EMAIL (As Per Record)	patentminder@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	15/05/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202011010525  
A

(19) INDIA

(22) Date of filing of Application :12/03/2020

(43) Publication Date : 20/03/2020

(54) Title of the invention : A CHATBOT FOR MENTAL HEALTH IMPROVEMENT OF STUDENTS USING NATURAL LANGUAGE PROCESSING AND SENTIMENT ANALYSIS

(51)  
International :H04L0029080000,G06F0016000000,H04N0021658000,G06Q0030060000,G06F0016680000  
classification  
(31) Priority  
Document :NA  
No  
(32) Priority :NA  
Date  
(33) Name  
of priority :NA  
country  
(86)  
International  
Application :NA  
No :NA  
Filing  
Date  
(87)  
International  
Publication :NA  
No  
(61) Patent  
of Addition  
to  
Application :NA  
Number :NA  
Filing  
Date  
(62)  
Divisional to  
Application :NA  
Number :NA  
Filing  
Date

(71)Name of Applicant :  
1)Ankit Kumar  
Address of Applicant :Assistant  
Professor Department of Computer  
Science and Engineering Swami  
Keshvanand Institute of Technology  
Management & Gramothan Jaipur  
Rajasthan India  
(72)Name of Inventor :  
1)Saksham Kumar  
2)Siddhant Sharma  
3)Mamta Siyak  
4)Tarun Bhambhani  
5)Pranav Dixit  
6)Bharat Jain  
7)Himanshu Modi  
8)Rasbihari Dayal  
9)Sohan Saini

(57) Abstract .

The present invention is an attempt at developing a ChatBot that conducts conversation with people having extreme emotional surges and try to solve their problem. The person is not emotionally well and wants someone to talk to or is in need of some upliftment, can use this bot to play songs suited to their state. The system first offers a login and signup page then stores the user data in the database (MariaDB) maintaining their original profile. The user then can access the UI that allows an interaction with the chatbot. User's inputs are sent as a request to Dialog Flow (JavaScript) and at the same time stored in database managed under their credentials. Dialogflw sends a response to the request. This data is then used for sentimental analysis and the user is provided with media content resonant to his mood. We are using Google's DialogFlow which is the platform where you can create and train an Agent™ i.e. we specify the task to the model and teach it various phrases (data) that it needs in respond. When the data is fed, it applies ML algorithms to train itself and cover all different possibilities that could be thrown at it. We access DialogFlow by requesting it via JavaScript and it generates and sends a response back to us. The application also enables the user to access a wide variety of online services such as social media sites, payments or ticketing portals and web crawler provided by the chatbot, thus given a single platform for all services. The application is also capable of notifying the users close peers in case of any emergency such as sudden in mental state which is usually common in students living far from home.

No. of Pages : 16 No. of Claims : 5



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Department for Promotion of Industry and Internal Trade  
Ministry of Commerce & Industry,  
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(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202011010525
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	12/03/2020
APPLICANT NAME	Ankit Kumar
TITLE OF INVENTION	A CHATBOT FOR MENTAL HEALTH IMPROVEMENT OF STUDENTS USING NATURAL LANGUAGE PROCESSING AND SENTIMENT ANALYSIS
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	iiita.ankit@gmail.com
ADDITIONAL-EMAIL (As Per Record)	iiita.ankit@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	20/03/2020

#### Application Status

APPLICATION STATUS

**Deemed to be withdrawn u/s 11B(4)**

[View Documents](#)

➡ Filed ➡ Published ➡ RQ Filed ➡ Under Examination ➡ Disposed

In case of any discrepancy in status, kindly contact [ipo-helpdesk@nic.in](mailto:ipo-helpdesk@nic.in)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041012885 A

(19) INDIA

(22) Date of filing of Application :24/03/2020

(43) Publication Date : 08/05/2020

(54) Title of the invention : IOT BASED WATER QUALITY MONITORING FOR TEXTILE INDUSTRY

(51) International classification :G06Q0030020000,H04L0029080000,G06Q0050000000,G06Q0020380000,G06Q0020100000  
(31) Priority Document No :NA  
(32) Priority Date :NA  
(33) Name of priority country :NA  
(86) International Application No :NA  
Filing Date  
(87) International Publication No :NA  
(61) Patent of Addition to Application Number :NA  
Filing Date  
(62) Divisional to Application Number :NA  
Filing Date

(71)Name of Applicant :  
1)Dr.V.Priya  
Address of Applicant :Associate Professor Department of Computer Science & Engineering, Mahendra Institute of Technology, Namakkal Tamil Nadu India  
2)Dr.S.Sudhakar  
3)Dr.S.Sharavanan  
4)Dr.A.Vishnu Priya  
5)Mrs.C.Karpagavalli  
6)Dr.M.B.Suresh  
7)Ms. K.Vidhya  
8)Dr. Pankaj Dadheech  
9)Mr. Gourav Purohit  
10)Mr.Sachin Sharma  
11)Ms.K.Kiruthiga  
12)Ms.S.Abinaya  
13)Ms.S.Athithi  
(72)Name of Inventor :  
1)Dr.V.Priya  
2)Dr.S.Sudhakar  
3)Dr.S.Sharavanan  
4)Dr.A.Vishnu Priya  
5)Mrs.C.Karpagavalli  
6)Dr.M.B.Suresh  
7)Ms. K.Vidhya  
8)Dr. Pankaj Dadheech  
9)Mr. Gourav Purohit  
10)Mr.Sachin Sharma  
11)Ms.K.Kiruthiga  
12)Ms.S.Abinaya  
13)Ms.S.Athithi

(57) Abstract :

The Internet of Things (IoT) is an ecosystem in which objects, entities, or people have unique identities and the capacity to transmit data across a network without needing human-to-human or computer-to-computer contact. The IoT enables artifacts to be detected and remotely operated through current network networks, providing incentives for more effective incorporation of the real environment with computer-based structures, resulting in more exceptional performance, precision, and economic gain. IoT board with SIM900 GPRS modem to enable internet link also fitted with a controller to handle all GPRS-based online data from UART inputs. Data can be linked on a particular platform or social network from which the consumer may access the data.

No. of Pages : 12 No. of Claims : 4



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Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041012885
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	24/03/2020
APPLICANT NAME	1 . Dr.V.Priya 2 . Dr.S.Sudhakar 3 . Dr.S.Sharavanan 4 . Dr.A.Vishnu Priya 5 . Mrs.C.Karpagavalli 6 . Dr.M.B.Suresh 7 . Ms. K.Vidhya 8 . Dr. Pankaj Dadheech 9 . Mr. Gourav Purohit 10 . Mr.Sachin Sharma 11 . Ms.K.Kiruthiga 12 . Ms.S.Abinaya 13 . Ms.S.Athithi
TITLE OF INVENTION	IOT BASED WATER QUALITY MONITORING FOR TEXTILE INDUSTRY
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	priya.saravananaraja@gmail.com
ADDITIONAL-EMAIL (As Per Record)	priya.saravananaraja@gmail.com
E-MAIL (UPOATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	24/03/2020
PUBLICATION DATE (U/S 11A)	08/05/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041010986 A

(19) INDIA

(22) Date of filing of Application :14/03/2020

(43) Publication Date : 20/03/2020

(54) Title of the invention : IMAGE CAPTCHA CROPPING USING SYMBOLS (ICS)

(51)

International :H04L0029060000,H04W0012120000,G06F0021550000,G05F0001660000,G06F001695800  
classification 0

n

(31) Priority

Document :NA  
No

(32) Priority

Date :NA

(33) Name

of priority :NA  
country

(86)

International

Application :NA

No :NA

Filing

Date

(87)

International

Publication : NA

No

(61) Patent

of Addition

to

Application :NA

Number :NA

Filing

Date

(62)

Divisional to

Application :NA

Number :NA

Filing

Date

(71)Name of Applicant :

1)Dr.K.Suresh Kumar

Address of Applicant

:Associate Professor

Department of

Information Technology,

Saveetha Engineering

College, (Autonomous

Institution) Saveetha

Nagar, Thandalam,

Chennai- 602 105, Tamil

Nadu, India Tamil Nadu

India

2)Dr.A.Vijayaraj

3)Dr.S.Sudhakar

4)Mrs.N.Suganthi

5)Dr.P.T.Vasanth Raj

6)Mr.V.Prasathkuma

r

7)Dr. Pankaj

Dadheech

8)Mr.Ankit Kumar

9)Dr.Hemant Dhabhai

10)Ms.S.K.Aruna

(72)Name of Inventor :

1)Dr.K.Suresh Kumar

2)Dr.A.Vijayaraj

3)Dr.S.Sudhakar

4)Mrs.N.Suganthi

5)Dr.P.T.Vasanth Raj

6)Mr.V.Prasathkuma

r

7)Dr. Pankaj

Dadheech

8)Mr.Ankit Kumar

9)Dr.Hemant Dhabhai

10)Ms.S.K.Aruna

(57) Abstract :

Web Security invention has grownup extremely vital over the years as the internet has become the place for the behavior of business in today™s world. Numerous attacks stated worldwide that hamper web security by creating a substantial threat to appreciate user data. One amid them is a phishing attack. It is a technique by which an attacker attempts to snip vital data such as user names, PINs, and other private facts by constructing fake websites and cover them as if they remained legitimate ones. This idea emphasizes on providing web security to the users guaranteed to use the site by using a new technique that is based on image cropping and imposing it on the user during registration to avert from phishing websites.

No. of Pages : 17 No. of Claims : 4



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Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041010986
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	14/03/2020
APPLICANT NAME	1 . Dr.K.Suresh Kumar 2 . Dr.A.Vijayaraj 3 . Dr.S.Sudhakar 4 . Mrs.N.Suganthi 5 . Dr.P.T.Vasanth Raj 6 . Mr.V.Prasathkumar 7 . Dr. Pankaj Dadheech 8 . Mr.Ankit Kumar 9 . Dr.Hemant Dhabhai 10 . Ms.S.K.Aruna
TITLE OF INVENTION	IMAGE CAPTCHA CROPPING USING SYMBOLS (ICS)
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	dr.ksureshkumar29@gmail.com
ADDITIONAL-EMAIL (As Per Record)	dr.ksureshkumar29@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	14/03/2020
PUBLICATION DATE (U/S 11A)	20/03/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application:  
No.202041011771 A

(19) INDIA

(22) Date of filing of Application :18/03/2020

(43) Publication Date : 20/03/2020

(54) Title of the invention : SMART TRAFFIC SYSTEM FOR EMERGENCY VEHICLES USING IOT

(51)  
International :H04L0029080000.G06K0009000000.G08G0001070000.G09B0019140000.G08G0001095000  
classification  
(31) Priority  
Document :NA  
No  
(32) Priority :NA  
Date  
(33) Name  
of priority :NA  
country  
(86)  
International  
Application :NA  
No :NA  
Filing  
Date  
(87)  
International  
Publication :NA  
No  
(61) Patent  
of Addition  
to  
Application :NA  
Number :NA  
Filing  
Date  
(62)  
Divisional to  
Application :NA  
Number :NA  
Filing  
Date

(71)Name of Applicant :  
1)Dr. V. Priya  
Address of Applicant :Associate  
Professor Department of Computer  
Science & Engineering, Mahendra  
Institute of Tecbnoology, Namakkal-  
637503, Tamil Nadu, India Tamil  
Nada India  
2)Dr.S.Sudhakar  
3)Dr.Jayanti Goyal  
4)Dr. Pankaj Dadheech  
5)Dr.Jitendra Singh Chouhan  
6)Mr.Wilson Prakash  
7)Mrs.A.Uma Maheswari  
8)Mr.S.Ramesh  
9)Mr. Sudhir Kumar  
10)Mr. NitinPurohit  
11)Mr.S.Sudhagar  
(72)Name of Inventor :  
1)Dr.V. Priya  
2)Dr.S.Sudhakar  
3)Dr.Jayanti Goyal  
4)Dr. Pankaj Dadheech  
5)Dr.Jitendra Singh Chouhan  
6)Mr.Wilson Prakash  
7)Mrs.A.Uma Maheswari  
8)Mr.S.Ramesh  
9)Mr. Sudhir Kumar  
10)Mr. NitinPurohit  
11)Mr.S.Sudhagar

(57) Abstract :  
Exceptional issues of this new environment are governance in a wide community. It also implies an automated traffic control system, which was built utilizing the Internet of Things (IoT). A circuit mounted within the car, which operates for distributed networks using RFID, assists the network. The functionalities of the network include efficient control of traffic light and collect RFID data to encrypt the sense sent to deliver the receiver, which automatically modifies green light and parking space identification and the anti-theft security scheme. In addition, directed learning methodologies are implemented that can help assess the road level, calculate the total flow of traffic, estimate the average speed of specific cars and analyze the travelling path of a vehicle and cloud-based data connectivity to gather vehicle data.

No. of Pages : 16 No. of Claims : 3





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Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041011771
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	18/03/2020
APPLICANT NAME	1 . Dr.V. Priya 2 . Dr.S.Sudhakar 3 . Dr.Jayanti Goyal 4 . Dr. Pankaj Dadheech 5 . Dr.Jitendra Singh Chouhan 6 . Mr.Wilson Prakash 7 . Mrs.A.Uma Maheswari 8 . Mr.S.Ramesh 9 . Mr. Sudhir Kumar 10 . Mr. NitinPurohit 11 . Mr.S.Sudhagar
TITLE OF INVENTION	SMART TRAFFIC SYSTEM FOR EMERGENCY VEHICLES USING IOT
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	priya.saravanaraja@gmail.com
ADDITIONAL-EMAIL (As Per Record)	priya.saravanaraja@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	18/03/2020
PUBLICATION DATE (U/S 11A)	20/03/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041015333  
A

(19) INDIA

(22) Date of filing of Application :07/04/2020

(43) Publication Date : 05/06/2020

(54) Title of the invention : SENSOR BASED SECURED BANK LOCKER SYSTEM THEREOF

(51)  
International :H04L0009320000.G06Q0050000000.G07F0017120000.G06F0021620000.H04L0009000000  
classification  
(31) Priority  
Document :NA  
No  
(32) Priority :NA  
Date  
(33) Name  
of priority :NA  
country  
(86)  
International  
Application :NA  
No :NA  
Filing  
Date  
(87)  
International  
Publication :NA  
No  
(61) Patent  
of Addition  
to :NA  
Application :NA  
Number  
Filing  
Date  
(62)  
Divisional to  
Application :NA  
Number :NA  
Filing  
Date

(71)Name of Applicant :  
1)Dr. Surya Deo Choudhary  
Address of Applicant :Associate  
Professor, Department of Electronics &  
Communication Engineering, Noida  
Institute of Engineering & Technology,  
Greater Noida Address: S/O Jagdish  
Choudhary Vill+PO: Hirodih PS:  
Jainagar District: Koderma State:  
Jharkhand India-825409 Jharkhand  
India  
2)Manish Kumar  
3)Dr. Pankaj Dadheech  
4)Dr. Pankaj Kumar  
5)M.K.Mariam Bee  
6)P.Jagadeesh  
7)Dr.R.Lakshmana Kumar  
8)Prof.M.Amala Jayanthi  
9)Dr. Gunasekaran Manogaran  
10)Dr. BalaAnand Muthu  
11)Dr.S.Balamurugan  
(72)Name of Inventor :  
1)Dr. Surya Deo Choudhary  
2)Manish Kumar  
3)Dr. Pankaj Dadheech  
4)Dr. Pankaj Kumar  
5)M.K.Mariam Bee  
6)P.Jagadeesh  
7)Dr.R.Lakshmana Kumar  
8)Prof.M.Amala Jayanthi  
9)Dr. Gunasekaran Manogaran  
10)Dr. BalaAnand Muthu  
11)Dr.S.Balamurugan

(57) Abstract :  
In today's world security plays important role. Each and every person has different accessories like gold, jewelry or cash so in our day today life the security is important to save our accessories. someone can steal our things in order to overcome we should have a highly security enhanced safety locker system. We can use this system in both public and private sector. We can offer them in cheap cost. In added advantage of this systems we have a camera, which is attached to the systems we can easily access the systems by both educated and illiterate people.

No. of Pages : 15 No. of Claims : 4



Controller General of Patents, Designs and Trademarks  
 Department of Industrial Policy and Promotion  
 Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041015333
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	07/04/2020
APPLICANT NAME	1 . Dr. Surya Deo Choudhary 2 . Manish Kumar 3 . Dr. Pankaj Dadheech 4 . Dr. Pankaj Kumar 5 . M.K.Mariam Bee 6 . P.Jagadeesh 7 . Dr.R.Lakshmana Kumar 8 . Prof.M.Amala Jayanthi 9 . Dr. Gunasekaran Manogaran 10 . Dr. BalaAnand Muthu 11 . Dr.S.Balamurugan
TITLE OF INVENTION	SENSOR BASED SECURED BANK LOCKER SYSTEM THEREOF
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	sbnbala@gmail.com
ADDITIONAL-EMAIL (As Per Record)	sbnbala@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	07/04/2020
PUBLICATION DATE (U/S 11A)	05/06/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application  
No.202011015819 A

(19) INDIA

(22) Date of filing of Application :11/04/2020

(43) Publication Date :  
15/05/2020

(54) Title of the invention : SENSOR BASED SYSTEM AND METHOD FOR AUTOMATIC MIRROR ADJUSTMENT IN VEHICLES

(51)  
International :B60R0001020000,G03F0007200000,B60R0001072000,B60R0001070000,G02B0027010000  
classification  
(31) Priority  
Document :NA  
No  
(32) Priority :NA  
Date  
(33) Name  
of priority :NA  
country  
(86)  
International  
Application :NA  
No :NA  
Filing  
Date  
(87)  
International  
Publication :NA  
No  
(61) Patent  
of Addition  
to  
Application :NA  
Number :NA  
Filing  
Date  
(62)  
Divisional to  
Application :NA  
Number :NA  
Filing  
Date

(71)Name of Applicant :  
**1)Dr. Achyut Shankar**  
Address of Applicant  
:Department of  
Computer Science &  
Engineering, Amity  
School of Engineering &  
Technology, Amity  
University, Noida, Uttar  
Pradesh, Sector-125,  
Noida (U.P.) India-  
201313 Uttar Pradesh  
India  
**2)Dr.K.Thenmalar**  
**3)Dr.R.Rohini**  
**4)Dr.R.Nirmala**  
**5)Dr. Shuchi Mala**  
**6)Dr. Thompson**  
**Stephan**  
**7)M.K.Mariam Bee**  
**8)Dr. Pankaj**  
**Dadheech**  
**9)Dr.S.Balamurugan**  
(72)Name of Inventor :  
**1)Dr. Achyut Shankar**  
**2)Dr.K.Thenmalar**  
**3)Dr.R.Rohini**  
**4)Dr.R.Nirmala**  
**5)Dr. Shuchi Mala**  
**6)Dr. Thompson**  
**Stephan**  
**7)M.K.Mariam Bee**  
**8)Dr. Pankaj**  
**Dadheech**  
**9)Dr.S.Balamurugan**

(57) Abstract :

By utilizing the tilt sensor, this invention aims to adjust the mirror automatically when the handlebar will be in ninety degrees. Then the face of the driver who drives the vehicle is recognized and based on their height and other factors and the mirror will adjust on both sides of the handlebar. In case of an accident or the handlebar is not in ninety degrees then the mirror adjustment will be made automatically and the handle is also adjusted such that the driver can drive the vehicle comfortably. For the mirror adjustment, we have a stepper motor that will adjust the mirror-based on the required sides. The controller will give output to the motor to drive the mirror to the proper position for the luxurious drive.

No. of Pages : 15 No. of Claims : 4



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Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202011015819
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	11/04/2020
APPLICANT NAME	1 . Dr. Achyut Shankar 2 . Dr.K.Thenmalar 3 . Dr.R.Rohini 4 . Dr.R.Nirmala 5 . Dr. Shuchi Mala 6 . Dr. Thompson Stephan 7 . M.K.Mariam Bee 8 . Dr. Pankaj Dadheech 9 . Dr.S.Balamurugan
TITLE OF INVENTION	SENSOR BASED SYSTEM AND METHOD FOR AUTOMATIC MIRROR ADJUSTMENT IN VEHICLES
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	sbnbala@gmail.com
ADDITIONAL-EMAIL (As Per Record)	sbnbala@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	11/04/2020
PUBLICATION DATE (U/S 11A)	15/05/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041020699 A

(19) INDIA

(22) Date of filing of Application : 16/05/2020

(43) Publication Date : 05/06/2020

(54) Title of the invention : IOT AND BLOCKCHAIN-ENABLED SMART E-VEHICLE CHARGING SYSTEM

<p>(51) International classification : H04L0029080000, A63F0003000000, G06Q0050060000, G07F0015000000, H04L0009320000</p> <p>(31) Priority Document No : NA</p> <p>(32) Priority Date : NA</p> <p>(33) Name of priority country : NA</p> <p>(86) International Application No : NA</p> <p style="padding-left: 20px;">Filing Date : NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number : NA</p> <p style="padding-left: 20px;">Filing Date : NA</p> <p>(62) Divisional to Application Number : NA</p> <p style="padding-left: 20px;">Filing Date : NA</p>	<p>(71)Name of Applicant :</p> <p><b>1)Mr. Sri Hari Nallamala</b> Address of Applicant : Assistant Professor Vasireddy Venkatadri Institute of Technology, Department of Computer Science and Engineering, Namburu, Guntur Andhra Pradesh India</p> <p><b>2)Dr. Pankaj Dadheech</b></p> <p><b>3)Mr. Aabhas Mathur</b></p> <p><b>4)Dr. K.V. D.Kiran</b></p> <p><b>5)Mrs. Sushma Chowdary Polavarapu</b></p> <p><b>6)Dr.S.Geetha</b></p> <p><b>7)Dr. J. Martin Leo Manickam</b></p> <p><b>8)Dr. S. Jayasundar</b></p> <p><b>9)Mrs. Kranthi Madala</b></p> <p><b>10)Dr J.Madhusudanan</b></p> <p><b>11)Mr. Veeanand Kakarla</b></p> <p>(72)Name of Inventor :</p> <p><b>1)Mr. Sri Hari Nallamala</b></p> <p><b>2)Dr. Pankaj Dadheech</b></p> <p><b>3)Mr. Aabhas Mathur</b></p> <p><b>4)Dr. K.V. D.Kiran</b></p> <p><b>5)Mrs. Sushma Chowdary Polavarapu</b></p> <p><b>6)Dr.S.Geetha</b></p> <p><b>7)Dr. J. Martin Leo Manickam</b></p> <p><b>8)Dr. S. Jayasundar</b></p> <p><b>9)Mrs. Kranthi Madala</b></p> <p><b>10)Dr J.Madhusudanan</b></p> <p><b>11)Mr. Veeanand Kakarla</b></p>
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(57) Abstract :

As many nations are moving towards pollution-free traffic, electric vehicles are increasing greater prominence over the globe. Right now, the Internet of Things is applied worldview in the block-chain way to deal with handling the process of the electric vehicle of charging in shared spaces in the decentralized era, for example, cabins. The systems with the Internet of Things will rationalize the recital of electric vehicles charging and seeing the effects. A versatile application handles the customer system of authentication to start the process of charging for electric transportation, where numerous detectors are used to estimate vitality consumption and are dependent on the microcontroller, to build up information communication with the portable application. This technique is useful for transportation systems and V-DT systems. With the Internet of Things, we can undoubtedly manage the entire V-DT Technology, which will set aside moments and money. This sort of work is to occur made a smart app to bond with the matrix and for realizing the various charges of the framework. The duty charges will have all charges for the transmission of power to the form and the levy rate for the withdrawal of power from the network. State of Charge is estimated utilizing the Advanced RISC Machine Mbed controller, and it will transmit to the cloud. The application will likewise show the battery status of the client when he goes to the matrix. This anticipated system will progress the city arranging and makes everyday life simple. A block-chain handles money related transitions, and this methodology can be imitated to other electric vehicle charging situations, for example, an open system of charging in a city, where the cell phone gives an authentication component.

No. of Pages : 16 No. of Claims : 4



Controller General of Patents, Designs and Trademarks  
Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041020699
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	16/05/2020
APPLICANT NAME	1 . Mr. Sri Hari Nallamala 2 . Dr. Pankaj Dadheech 3 . Mr. Aabhas Mathur 4 . Dr. K.V. D.Kiran 5 . Mrs. Sushma Chowdary Polavarapu 6 . Dr.S.Geetha 7 . Dr. J. Martin Leo Manickam 8 . Dr. S. Jayasundar 9 . Mrs. Kranthi Madala 10 . Dr J.Madhusudanan 11 . Mr. Veenanand Kakarla
TITLE OF INVENTION	IOT AND BLOCKCHAIN-ENABLED SMART E-VEHICLE CHARGING SYSTEM
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	nallamala.srihari@gmail.com
ADDITIONAL-EMAIL (As Per Record)	nallamala.srihari@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	05/06/2020

### Application Status

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041026105 A

(19) INDIA

(22) Date of filing of Application :21/06/2020

(43) Publication Date : 10/07/2020

(54) Title of the invention : A LOW-COST 4G SMART PHONE DETECTOR AND JAMMER SYSTEM GSM - 900 MHZ AND 1800 MHZ FOR USING MATLAB SIMULINK

<p>(51) International classification :H04K 3/00</p> <p>(31) Priority Document No :NA</p> <p>(32) Priority Date :NA</p> <p>(33) Name of priority country :NA</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No :NA</p> <p>(61) Patent of Addition in Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p>1)Dr. G.Rajeshkumar Address of Applicant :Associate Professor Department of Information Technology, Karpagam College of Engineering, Myleripalayam Village, Othakkal Mandapam (PO), Coimbatore - 641032, Tamil Nadu, India Tamil Nadu India</p> <p>2)Dr.S.Sadesh</p> <p>3)Dr.S.Gokulraj</p> <p>4)Dr. R.Venkatesan</p> <p>5)Mrs. T.Priyadarsini</p> <p>6)Dr. Pankaj Dadheech</p> <p>7)Dr. Hitesh Joshi</p> <p>8)Mr. Rajesh Rajaan</p> <p>9)Dr. Sanwta Ram Dogiwal</p> <p>10)Mr. Sudhir Kumar</p> <p>11)Dr.S.Sudhakar</p> <p>(72)Name of Inventor :</p> <p>1)Dr. G.Rajeshkumar</p> <p>2)Dr.S.Sadesh</p> <p>3)Dr.S.Gokulraj</p> <p>4)Dr. R.Venkatesan</p> <p>5)Mrs. T.Priyadarsini</p> <p>6)Dr. Pankaj Dadheech</p> <p>7)Dr. Hitesh Joshi</p> <p>8)Mr. Rajesh Rajaan</p> <p>9)Dr. Sanwta Ram Dogiwal</p> <p>10)Mr. Sudhir Kumar</p> <p>11)Dr.S.Sudhakar</p>
---	--

(57) Abstract :

This study presents the design, execution, and design testing. This invention introduced the first section of the device due to the limitations of the rest of the necessary components. However, the design and calculations were measured to complete the design. When correctly manufactured, the design is capable of simultaneously interfering with the GSM 900 and 1800 and thus jamming the three famous companies in India. This idea deals with the design and execution of the Denial of Service technique of the low-cost cellular phone detection system. The mobile phone detector is an RF-based sensor that monitors nearby RF activity. The Jammer generates an RF signal at the same frequency used with modulated noise with a power higher than that of the original signal by the communications carriers. This article presents an effective intelligent jammer design for jamming 4 G signals, especially band 3 and 40, which can be utilized primarily in India. Even though mobile phones are kept quiet, the circuit detects voice calls, message service, and video service. In any field in which the cell phone rings frequently cause nuisance, our GSM jamming system provides a cost-effective solution.

No. of Pages : 17 No. of Claims : 4





Controller General of Patents, Designs and Trademarks  
Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041026105
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	21/06/2020
APPLICANT NAME	1 . Dr. G.Rajeshkumar 2 . Dr.S.Sadesh 3 . Dr.S.Gokulraj 4 . Dr. R.Venkatesan 5 . Mrs. T.Priyadarsini 6 . Dr. Pankaj Dadheech 7 . Dr. Hitesh Joshi 8 . Mr. Rajesh Rajaan 9 . Dr. Sanwta Ram Dogiwal 10 . Mr. Sudhir Kumar 11 . Dr.S.Sudhakar
TITLE OF INVENTION	A LOW-COST 4G SMART PHONE DETECTOR AND JAMMER SYSTEM GSM - 900 MHZ AND 1800 MHZ FOR USING MATLAB SIMULINK
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	grajesh.grk@gmail.com
ADDITIONAL-EMAIL (As Per Record)	grajesh.grk@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	10/07/2020

### Application Status

[View Documents](#)



Australian Government

IP Australia

## CERTIFICATE OF GRANT

# INNOVATION PATENT

**Patent number:** 2020101562

The Commissioner of Patents has granted the above patent on 19 August 2020, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Pravin R. Kshirsagar of Professor & Head, Electronics & Communication Engineering, AVN Institute of Engineering & Tech. Hyderabad Telangana 501510 India

Kamal Gulati of Associate Professor, Quality Support Coordinator - IQAC, Amity University Noida Uttar Pradesh 201303 India

Pankaj Dadheech of Asso. Prof., Depart. of Comp. Sci. & Eng, Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) Jaipur Rajasthan 302017 India

T.C. Manjunath of Prof. & Head, ECE Dept., Dayananda Sagar College of Engineering, Shavigemalleshwara Hills, Banashankari Bengaluru Karnataka 560078 India

S. Muthusundari of Associate Professor, Computer Science and Engineering, R.M.D Engineering College, R.S.M. Nagar Kavaraipettai Tamil Nadu 601206 India

S.V.N. Sreenivasu of Prof., Comp. Science and Engineering, Narasaraopeta Engineering College (Autonomous), Kotappakonda Rd Narasaraopeta Andhra Pradesh 522601 India

Neeraj Chandnani of Assistant Professor, Electronics and Communication, Military College of Telecomm. Engi. Indore Madhya Pradesh 452005 India

Saravanan Chandrasekaran of Assistant Prof., Dept. of C.S. and Engi., Faculty of Engi. and Technology, Jain (Deemed-to-be) University Bengaluru Karnataka 560069 India

Kailash Kumar of Assistant Professor, College of Computing & Informatics Saudi Electronic University Riyadh Saudi Arabia

Akharaju Sailesh Chandra of Research Scholar and Assistant Professor, Dhruva college of Management Hyderabad Telangana 501401 India

G Divakara Reddy of Vels Institute of Science, Technology & Advanced Studies, (VISTAS), Pallavaram Chennai Tamil Nadu 600117 India

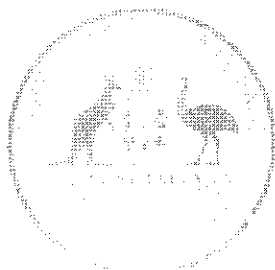
J R Manju of Assistant Professor, Electrical & Electronics Engineering, J S S Academy of Technical Education Noida Uttar Pradesh 201301 India

Harsha R of Assistant Professor, Electronics And Comm. Engineering, D R Ambedkar Institute of Technology Bengaluru Karnataka 560056 India

Syed Mufassir Yaseen of PhD Scholar, Lovely Professional University, Phagwara Jalandhar Punjab 144001 India

Syed Irfan Yaqoob of A.P, SSM College of Engineering Kashmir Jammu & Kashmir India

**Title of invention:**



Dated this 19<sup>th</sup> day of August 2020

Commissioner of Patents



Australian Government

IP Australia

# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2020101562

AN ARTIFICIAL INTELLIGENCE AND IOT BASED SYSTEM FOR MONITORING AND DETECTION OF ELECTRICITY THEFT

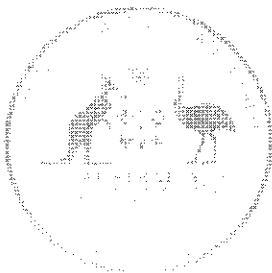
**Name of inventor(s):**

Kshirsagar, Pravin R.; Gulati, Kamal; Dadheech, Pankaj; Manjunath, T.C.; Muthusundari, S.; Sreenivasu, S.V.N.; Chandnani, Neeraj; Chandrasekaran, Saravanan; Kumar, Kailash; Chandra, Akkaraju Sailesh; Reddy, G. Divakara; Manju, J. R.; R., Harsha; Yaseen, Syed Mufassir and Yaqoob, Syed Irfan

**Term of Patent:**

Eight years from 29 July 2020

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 19<sup>th</sup> day of August 2020

Commissioner of Patents



Australian Government

IP Australia

42

# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2020101719

The Commissioner of Patents has granted the above patent on 2 September 2020, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Pankaj Dadheech of Associate Professor, Depart. of Computer Sci. & Engineering, Swami Keshvanand Institute of Technology Jaipur Rajasthan 302017 India

Pravin R. Kshirsagar of Professor & Head, Electronics & Communication Engineering, AVN Institute of Engineering & Tech. Hyderabad Telangana 501510 India

Susheela Devi B Devaru of Associate Professor, Department of MBA, Dr Ambedkar Institute of Technology Bangalore Karnataka 560056 India

Shamshekhar S Patil of Dr Ambedkar Institute of Technology Bengaluru Karnataka 560056 India

Rekha Chaturvedi of Assistant Professor, Computer Sci. & Engineering, Amity University Jaipur Rajasthan 303002 India

Loveleen Kumar of Assistant Professor, Computer Sci. & Engineering, Global Institute of Technology. RTU Jaipur Rajasthan 302033 India

Anand Mohan of Formerly Fellow DST Govt.of India, LN Mithila University Darbhanga Bihar 846004 India

Abhra Pratip Ray of Assistant Professor, Pratibha College of Comm.& Comp. studies, Chinchwad Pune Maharashtra 411019 India

Ahmad Abdullah Aljabr of Vice Dean, Grad.Studies & Scientific Res, Chairman of Information Technology College of Computing and Informatics Riyadh Saudi Arabia

Kailash Kumar of Assistant Professor, College of Computing & Informatics Saudi Electronic University Riyadh Saudi Arabia

Ranjana Tewari of Department of Agriculture, Mangalayatan University, Beswan Aligarh Uttar Pradesh 202145 India

Saiful Islam of Depart. of Geotechnics & Transportation, School of Civil Engineering, Universiti Teknologi Malaysia Johor Bahru Malaysia 81310 Malaysia

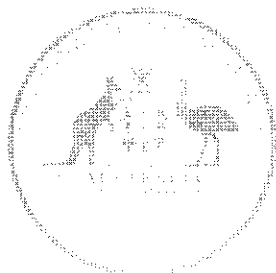
Kamal Gulati of Associate Professor, Quality Support Coordinator - IQAC, Amity University Noida Uttar Pradesh 201303 India

Jyoti Neeli of Global Academy of Technology, Depart. of Information science & Engi. Bengaluru Karnataka 560098 India

Girish H of Associate Professor, Department of ECE, Cambridge Institute of Technology Bengaluru 560036 Karnataka India

**Title of invention:**

AN ARTIFICIAL INTELLIGENCE AND INTERNET OF THINGS BASED AUTOMATED SYSTEM FOR ANIMAL HEALTH CARE



Dated this 2<sup>nd</sup> day of September 2020

Commissioner of Patents



Australian Government

IP Australia

# CERTIFICATE OF GRANT INNOVATION PATENT

**Patent number:** 2020101719

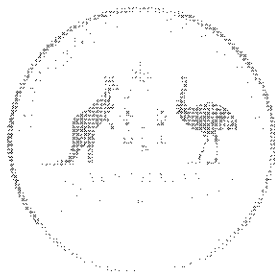
**Name of inventor(s):**

Dadheech, Pankaj; Kshirsagar, Pravin R.; Devaru, Susheela Devi B.; Patil, Shamshekhar S.; Chaturvedi, Rekha; Kumar, Loveleen; Mohan, Anand; Ray, Abhra Pratip; Aljabr, Ahmad Abdullah; Kumar, Kailash; Tewari, Ranjana; Islam, Saiful; Gulati, Kamal; Neeli, Jyoti and H., Girish

**Term of Patent:**

Eight years from 7 August 2020

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 2<sup>nd</sup> day of September 2020

Commissioner of Patents

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application : 12/09/2020

(21) Application No.202041039505 A

(43) Publication Date : 25/09/2020

(54) Title of the invention : ACCURACY OF OPEN-AIR TEMPERATURE PREDICTION BY SMART WEATHER MONITORING SYSTEM FOR EFFECTIVE ANALYTICS USING IOT DEVICES

(51) International classification	:A01G0025160000, G06F0001200000, G09B0019000000, F24F0011630000, G01N0033240000	(71)Name of Applicant : 1)Mr.S. Magesh Address of Applicant :2nd Street, Venkatesa Nagar, Virugambakkam Chennai-600092 Tamil Nadu, India Tamil Nadu India 2)Mr.K.Mahendran 3)Mrs.V.R.Niveditha 4)Dr.S.Radha Rammohan 5)Mrs.N.Jayashri 6)Mrs.K. Sudha 7)Dr. R. Vidya 8)Mr.S.Ramesh 9)Dr.P.Rajaram 10)Dr. Pankaj Dadheech 11)Dr. S.R.Dogiwal
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Mr.S. Magesh 2)Mr.K.Mahendran 3)Mrs.V.R.Niveditha 4)Dr.S.Radha Rammohan 5)Mrs.N.Jayashri 6)Mrs.K. Sudha 7)Dr. R. Vidya 8)Mr.S.Ramesh 9)Dr.P.Rajaram 10)Dr. Pankaj Dadheech 11)Dr. S.R.Dogiwal
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(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	

(57) Abstract :

IoT drives many manufacturing borders and is viewing itself as something technology that guarantees to raise the level of Big Data Analytics. This invention aimed at creating a prototype system that uses an embedded system to examine whether changes are using Raspberry Pi-Using small, low-cost, single-board computer systems used in IoT applications, we are beginning to explore new opportunities to optimize the correctness of seasonal temperature predictions. Our approach makes use of multiple linear regression and combines onboard processor temperature measurements from multiple SBC's with remote weather stations. The framework was able to monitor the climatic conditions, including humidity, temperature, soil moisture, heavy rains and light intensity. This proof of concept system is very helpful for farmers to control the farm, which is why almost where at any time, resulting in cost reduction, investment in resources and efficient farming methods.

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



GOVERNMENT OF INDIA

Controller General of Patents, Designs and Trademarks  
Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

## Application Details

APPLICATION NUMBER	202041039505
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	12/09/2020
APPLICANT NAME	1 . Mr.S. Magesh 2 . Mr.K.Mahendran 3 . Mrs.V.R.Niveditha 4 . Dr.S.Radha Rammohan 5 . Mrs.N.Jayashri 6 . Mrs.K. Sudha 7 . Dr. R. Vidya 8 . Mr.S.Ramesh 9 . Dr.P.Rajaram 10 . Dr. Pankaj Dadheech 11 . Dr. S.R.Dogiwal
TITLE OF INVENTION	ACCURACY OF OPEN-AIR TEMPERATURE PREDICTION BY SMART WEATHER MONITORING SYSTEM FOR EFFECTIVE ANALYTICS USING IOT DEVICES
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	techiemagesh@gmail.com
ADDITIONAL-EMAIL (As Per Record)	techiemagesh@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	25/09/2020

## Application Status

[View Documents](#)



Australian Government

IP Australia

## CERTIFICATE OF GRANT

# INNOVATION PATENT

**Patent number:** 2020103157

The Commissioner of Patents has granted the above patent on 16 December 2020, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Anoop Kumar Chaturvedi of Lakshmi Narain College of Technology, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal Bhopal Madhya Pradesh 462022 India

R. Lakshmana Kumar of Department of Computer Applications, Hindusthan College of Engg. & Technology Coimbatore Tamil Nadu India

Saiful Islam of Department of Civil Engineering, College of Engineering, King Khalid University Abha 62529 Saudi Arabia

NADEEM AHMAD KHAN of Department of Civil Engineering, Mewat Engineering College NUH Haryana India

AFZAL HUSAIN KHAN of Department of Civil Engineering, Jazan University Jazan Saudi Arabia

T. C. Manjunath of Electronics & Communication Engg Dept., Dayananda Sagar College of Engg., DSCE Bangalore Karnataka 560078 India

Pavithra G. of Dept. of Electronics & Comm., ECE, RRC, Visvesvaraya Technological University Belagavi Karnataka 590018 India

Kailash Kumar of College of Computing & Informatics, Saudi Electronic University Riyadh Saudi Arabia

K. Veerakumar of Nallamuthu Gounder Mahalingam College Pollachi Tamilnadu 642001 India

Kamal Gulati of Quality Support Coordinator - IQAC, Amity University Noida Uttar Pradesh 201303 India

Narinder Kumar Bhasin of Amity University Noida Uttar Pradesh 201301 India

Pankaj Dadheech of Dept. of Computer Sci. & Engg., Swami Keshvanand Institute of Technology Management & Gramothan(SKIT), Ramnagar Jaipur, Rajasthan 302017 India

R. Sankeerthana of Sri Padmavati Mahila Visvavidyalayam, Padmavathi Nagar Tirupati Andhra Pradesh 517502 India

Srinivasa L. Chakravarthy of GITAM University, (Deemed to be University) Gandhi Nagar Rushikonda, Visakhapatnam Andhra Pradesh 530045 India

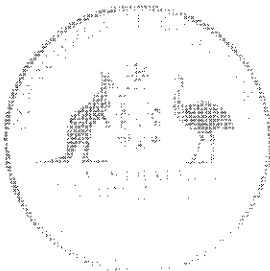
Anil Kumar Ghadiyaram of Department of ECE, Vignana Bharathi Institute of Technology Hyderabad Telangana 501301 India

Bharathi Panduri of Gokaraju Rangaraju Inst. of Engg. & Tech Hyderabad Telangana India

**Title of invention:**

AN ARTIFICIAL INTELLIGENCE BASED AUTOMATIC CLEANLINES SYSTEM FOR PHYSICALLY HANDICAPPED PERSONS

**Name of inventor(s):**



Dated this 16<sup>th</sup> day of December 2020

Commissioner of Patents





Australian Government

IP Australia

# CERTIFICATE OF GRANT INNOVATION PATENT

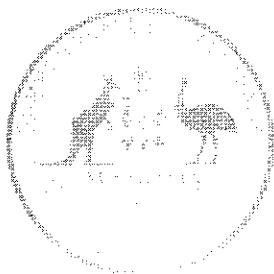
**Patent number:** 2020103157

Chaturvedi, Anoop Kumar; Kumar, R. Lakshmana; Islam, Saiful; KHAN, NADEEM AHMAD; KHAN, AFZAL HUSAIN; Manjunath, T.C.; G., Pavithra; Kumar, Kailash; Veerakumar, K.; Gulati, Kamal; Bhasin, Narinder Kumar; Dadheech, Pankaj; Sankeerthana, R.; Chakravarthy, Srinivasa L.; Ghadiyaram, Anil Kumar and Panduri, Bharathi

**Term of Patent:**

Eight years from 31 October 2020

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 16<sup>th</sup> day of December 2020

Commissioner of Patents

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041051975 A

(19) INDIA

(22) Date of filing of Application :29/11/2020

(43) Publication Date : 11/12/2020

(54) Title of the invention : A NOVEL IOT BASED DISINFECTANT SANITIZER TUNNEL

(51) International classification :H04L  
29/08  
(31) Priority Document No :NA  
(32) Priority Date :NA  
(33) Name of priority country :NA  
(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

(71)Name of Applicant :

1)Prof Ramesh Chandra Panda

Address of Applicant :Dean Research & Development Cell  
Synergy Institute of Engineering &  
Technology,Dhenkanal,Orissa-759001 Orissa India

2)Dr. Ashok Kumar Nanda

3)Dr. Pooja

4)Dr Ipsecta Nanda

5)Dr Nibedita Nanda

6)Mr. Meghraj Vivekanand Suryawanshi

7)Archana Kumari Prasad

8)Neeraj Kumar

9)Mr.Deepak Shivaji Dandwate

10)Dr. Pankaj Dadheech

11)Radha Priya

12)Miss Jumbher Loya

13)Dr P Karthigeyan

(72)Name of Inventor :

1)Prof Ramesh Chandra Panda

2)Dr. Ashok Kumar Nanda

3)Dr. Pooja

4)Dr Ipsecta Nanda

5)Dr Nihedita Nanda

6)Mr. Meghraj Vivekanand Suryawanshi

7)Archana Kumari Prasad

8)Neeraj Kumar

9)Mr.Deepak Shivaji Dandwate

10)Dr. Pankaj Dadheech

11)Radha Priya

12)Miss Jumbher Loya

13)Dr P Karthigeyan

(57) Abstract :

Millions of people around the world has been affected by the COVID-19 pandemic. It has become a global issue. The major priority of the scientific community is to control this pandemic. . This invention describes a strong IoT based disinfectant tunnel as shown in fig (1) which is used to disinfect external surface of objects , clothes or even human skin to provide protection against COVID-19 in social or public places such as malls, schools, hospitals, airports , and offices. Primarily focusing on the significance, structural design and functioning of the tunnel. To make the tunnel cost-effective and sustainable solar panels and steel rods have been used. The disinfectant tunnel is highly efficient and automatic as it offers no contact disinfection or sanitization. This sensitization tunnel must detect human to sanitize, this invention illustrates a novel approach of using sensors for human detection and since this project is based on IoT as backbone so security model must be there to guard against malicious user. This invention also illustrates end-to-end security model. Sodium Hypochlorite solution is sprayed in the tunnels as It can be of two types namely dynamic and static and The person will be rotated inside the station for 10-15 min which is a static model with the disinfectant sprayed through nozzles arranged in a whole of the circumference. End-to-End Encryption model in IoT security is deployed which consists of authenticated encryption with forward secrecy and backward compatibility and it uses MAC , HMAC algorithms and multiple encryptions of blocks with modes of operations such as CBC.

No. of Pages : 11 No. of Claims : 8



GOVERNMENT OF INDIA

Controller General of Patents, Designs and Trademarks  
Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

## Application Details

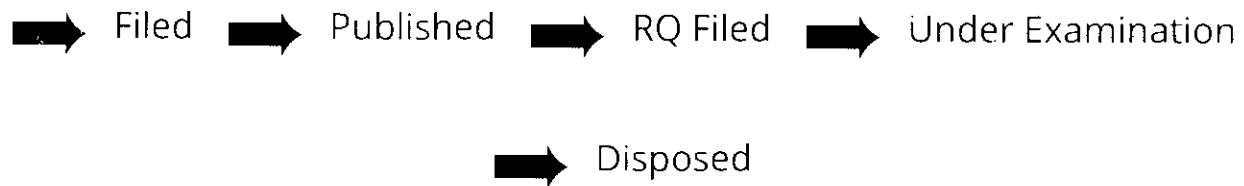
APPLICATION NUMBER	202041051975
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	29/11/2020
APPLICANT NAME	1 . Prof Ramesh Chandra Panda 2 . Dr. Ashok Kumar Nanda 3 . Dr. Pooja 4 . Dr Ipseeta Nanda 5 . Dr Nibedita Nanda 6 . Mr. Meghraj Vivekanand Suryawanshi 7 . Archana Kumari Prasad 8 . Neeraj Kumar 9 . Mr. Deepak Shivaji Dandwate 10 . Dr. Pankaj Dadheech 11 . Radha Priya 12 . Miss Jumter Loya 13 . Dr P Karthigeyan
TITLE OF INVENTION	A NOVEL IOT BASED DISINFECTANT SANITIZER TUNNEL
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	ramesh.panda.mech@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPOATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	11/12/2020

## Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

[View Documents](#)



(12) PATENT APPLICATION PUBLICATION

(21) Application No.202011050375 A

(19) INDIA

(22) Date of filing of Application :19/11/2020

(43) Publication Date : 04/12/2020

(54) Title of the invention : VR BASED PSYCHOLOGICAL AND PHYSICAL TRAINING TO GIRLS FOR SELF-DEFENSE

(51) International classification	:A61K 33/42 A61K 33/00 G02C 5/00	(71)Name of Applicant : 1)Dr. Pankaj Dadheech Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Swami Keshvanand Institute of Technology, Management &Gramothan, Ramnagaria, Jagatpura, Jaipur-302017, Rajasthan, India Rajasthan India 2)Dr. V.B.V.N.Prasad 3)Dr.C.G.Ravichandran 4)Mr. Rajesh Rajaan 5)Dr.S.Jayasundar 6)Dr.G.Saravanan 7)Dr.Ramya Govindaraj 8)Dr.T.Kavitha 9)Mr.Subrata Chowdhury 10)Mr.R.Regin 11)Ms.Manya Smriti
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Dr. Pankaj Dadheech 2)Dr. V.B.V.N.Prasad 3)Dr.C.G.Ravichandran 4)Mr. Rajesh Rajaan 5)Dr.S.Jayasundar 6)Dr.G.Saravanan 7)Dr.Ramya Govindaraj 8)Dr.T.Kavitha 9)Mr.Subrata Chowdhury 10)Mr.R.Regin 11)Ms.Manya Smriti
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(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	

(57) Abstract :

It's not just physical strength that helps us come out of a situation gracefully; mental strength has an upper edge in almost all situations. When it comes to girls' safety, many girls come across situations where they are harassed physically, be it rape or physical torture by in-laws (many cases registered). It is so unexpected to them that they freak out badly and tend to surrender many a time. Even if many try to act brave but still, psychological trauma acts against their capability to defend and escape. Thus, a 3D VR kind of wearable devices where they can be taught about right touch and lousy touch added on with proper defense would keep our girls mentally and physically ready. The training is practical since 3D makes us feel the situation and not just see, which is psychological and physical training. 3D can be increased to some higher dimensions like 4D also for better results. These 3D models can train them about how attackers attack, and when they often see about attacker's tactics and the way they attack in 3D, their mind will be trained if something unexpected happens in the future.

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



Controller General of Patents, Designs and Trademarks  
 Department of Industrial Policy and Promotion  
 Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202011050375
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	19/11/2020
APPLICANT NAME	1 . Dr. Pankaj Dadheech 2 . Dr.V.B.V.N.Prasad 3 . Dr.C.G.Ravichandran 4 . Mr. Rajesh Rajaan 5 . Dr.S.Jayasundar 6 . Dr.G.Saravanan 7 . Dr.Ramya Govindaraj 8 . Dr.T.Kavitha 9 . Mr.Subrata Chowdhury 10 . Mr.R.Regin 11 . Ms.Manya Smriti
TITLE OF INVENTION	VR BASED PSYCHOLOGICAL AND PHYSICAL TRAINING TO GIRLS FOR SELF-DEFENSE
FIELD OF INVENTION	PHARMACEUTICALS
E-MAIL (As Per Record)	pankajdadheech777@gmail.com
ADDITIONAL-EMAIL (As Per Record)	pankajdadheech777@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	04/12/2020

### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

[View Documents](#)

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041050337 A

(19) INDIA

(22) Date of filing of Application :19/11/2020

(43) Publication Date : 27/11/2020

(54) Title of the invention : A SMART WALKING SYSTEM FOR THE ELDERLY AND BLIND

(51) International classification :A61H3/061  
(31) Priority Document No :NA  
(32) Priority Date :NA  
(33) Name of priority country :NA  
(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

(71)Name of Applicant :

1)Dr.D.Hemavathi

Address of Applicant :Assistant Professor Dept. of IT, School of Computing SRM Institute of Science and Technology Kattankulathur, Chennai-603203, Tamil Nadu, India Tamil Nadu India

2)Dr.Hitesh Joshi

3)Dr.K.Sharmilee

4)Ms. P.Vijaya Vani

5)Mr.M.Z.M.Nomani

6)Mr.S.Thangam

7)Dr.Ramya Govindaraj

8)Mr. Ashwini Saini

9)Mr.Rajesh Rajaan

10)Dr.Pankaj Dadheech

11)Mr.Alekya Kowta

12)Mr.Manya Smriti

(72)Name of Inventor :

1)Dr.D.Hemavathi

2)Dr.Hitesh Joshi

3)Dr.K.Sharmilee

4)Ms. P.Vijaya Vani

5)Mr.M.Z.M.Nomani

6)Mr.S.Thangam

7)Dr.Ramya Govindaraj

8)Mr. Ashwini Saini

9)Mr.Rajesh Rajaan

10)Dr.Pankaj Dadheech

11)Mr.Alekya Kowta

12)Mr.Manya Smriti

(57) Abstract :

This invention proposes a smart walking stick system mostly made keeping the elderly in mind. With age comes diminishing memory and many more problems that seek support for both balance and navigation- cognitive and motor functions are diminished. Science and technology always make human life more comfortable. Our application is the go solution. A smart walking system that helps them navigate through life! Additional perks are that it can monitor heart rate and send out alerts to the nearest hospital while also alarming the people around for additional help. It also helps them cross the roads in a better and much safer way. Reminders for taking medicines in time/ general reminders can also be provided. We understand that the elderly might even have a feeble sense of vision. Keeping that in mind, we will be constructing a microcontroller-based automated software that can corroborate a blind person to detect obstacles in front of him immediately. We implement this using ad-hoc networks.

No. of Pages : 16 No. of Claims : 3



Controller General of Patents, Designs and Trademarks  
 Department of Industrial Policy and Promotion  
 Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041050337
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	19/11/2020
APPLICANT NAME	1 . Dr.D.Hemavathi 2 . Dr.Hitesh Joshi 3 . Dr.K.Sharmilee 4 . Ms. P.Vijaya Vani 5 . Mr.M.Z.M.Nomani 6 . Mr.S.Thangam 7 . Dr.Ramya Govindaraj 8 . Mr. Ashwini Saini 9 . Mr.Rajesh Rajaan 10 . Dr.Pankaj Dadheech 11 . Mr.Alekya Kowta 12 . Mr.Manya Smriti
TITLE OF INVENTION	A SMART WALKING SYSTEM FOR THE ELDERLY AND BLIND
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	hemavatd@srmist.edu.in
ADDITIONAL-EMAIL (As Per Record)	sudhasengan@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	27/11/2020

### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

[View Documents](#)



40  
1

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041053003 A

(19) INDIA

(22) Date of filing of Application :05/12/2020

(43) Publication Date : 11/12/2020

(54) Title of the invention : OPEN SOURCE INTERNET OF TANGIBLE THINGS BASED SMART DEVICE FOR CHILDREN WITH HEARING LOSS USING WI-FI COMMUNICATION

	<p>(71)Name of Applicant :</p> <p><b>1)Dr. P.Vijaya Vani</b> Address of Applicant :Faculty, Department of Mathematics University College of Engineering &amp; Technology Acharya Nagarjuna University, Guntur-522508 Andhra Pradesh, India Andhra Pradesh India</p> <p><b>2)Ms.D.Tabhita</b></p> <p><b>3)Dr.D.Krupa Daniel</b></p> <p><b>4)Dr.R.Muthukkumar</b></p> <p><b>5)Dr. J.Vellingiri</b></p> <p><b>6)Dr. Jagadeesh Gopal</b></p> <p><b>7)Dr. K.Arivuselvan</b></p> <p><b>8)Dr. J.Kamalakaran</b></p> <p><b>9)Dr.J.Gitanjali</b></p> <p><b>10)Mr. Vishwa Pratap Singh</b></p> <p><b>11)Dr. S.R.Dogiwal</b></p> <p><b>12)Dr. Pankaj Dadheech</b></p> <p>(72)Name of Inventor :</p> <p><b>1)Dr. P.Vijaya Vani</b></p> <p><b>2)Ms.D.Tabhita</b></p> <p><b>3)Dr.D.Krupa Daniel</b></p> <p><b>4)Dr.R.Muthukkumar</b></p> <p><b>5)Dr. J.Vellingiri</b></p> <p><b>6)Dr. Jagadeesh Gopal</b></p> <p><b>7)Dr. K.Arivuselvan</b></p> <p><b>8)Dr. J.Kamalakaran</b></p> <p><b>9)Dr.J.Gitanjali</b></p> <p><b>10)Mr. Vishwa Pratap Singh</b></p> <p><b>11)Dr. S.R.Dogiwal</b></p> <p><b>12)Dr. Pankaj Dadheech</b></p>
(51) International classification	:H04W 88/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	:NA
(61) Patent of Addition in Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(57) Abstract :

Presently, this one has been anticipated that over a thousand means an AC. The utilization of social services can allow children with disabilities increasingly dependent on their parents, which discourages ACs from being socially and financially dynamic. AI should provide the encouragement and guidance deemed necessary for individuals with autism to achieve a good standard of living. This system allows the AC to monitor the home using computer devices from almost anywhere and at any moment. If the sensor value exceeds the maximum system of values, the person should be informed, and the demanded sensitivity should be controlled. Notifications and other data are sent through the web to user groups.

No. of Pages : 12 No. of Claims : 4



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 Department of Industrial Policy and Promotion  
 Ministry of Commerce and Industry

### Application Details

APPLICATION NUMBER	202041053003
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	05/12/2020
APPLICANT NAME	1 . Dr. P.Vijaya Vani 2 . Ms.D.Tabhita 3 . Dr.D.Krupa Daniel 4 . Dr.R.Muthukumar 5 . Dr. J.Vellingiri 6 . Dr. Jagadeesh Gopal 7 . Dr. K.Arivuselvan 8 . Dr. J.Kamalakaran 9 . Dr.J.Gitanjali 10 . Mr. Vishwa Pratap Singh 11 . Dr. S.R.Dogiwal 12 . Dr. Pankaj Dadheech
TITLE OF INVENTION	OPEN SOURCE INTERNET OF TANGIBLE THINGS BASED SMART DEVICE FOR CHILDREN WITH HEARING LOSS USING WI-FI COMMUNICATION
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	vijayavanipachala@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	11/12/2020

### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**



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

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

### Application Details

APPLICATION NUMBER	202011044614
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	13/10/2020
APPLICANT NAME	1 . Swami Keshvanand Institute of Technology, Management and Gramothan 2 . Kiran Rathi 3 . Pooja Choudhary
TITLE OF INVENTION	A DEVICE FOR SOLDERING ELECTRONIC COMPONENTS BY REFLOW SOLDERING TECHNIQUE AND THE PROCESS THEREOF
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	ipconstellation@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	07/01/2021
PUBLICATION DATE (U/S 11A)	23/10/2020
FIRST EXAMINATION REPORT DATE	04/01/2022
Date Of Certificate Issue	24/09/2024
POST GRANT JOURNAL DATE	27/09/2024
REPLY TO FER DATE	04/06/2022

*Granted,  
Patent number 419, 002*

### Application Status



पेटेंट कार्यालय, भारत सरकार

The Patent Office, Government Of India

पेटेंट प्रमाण पत्र

Patent Certificate

(पेटेंट नियमावली का नियम 74)

(Rule 74 of The Patents Rules)

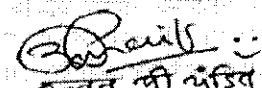
पेटेंट सं. / Patent No. : 550865  
आवेदन सं. / Application No. : 202011044614  
फाइल करने की तारीख / Date of Filing : 13/10/2020  
पेटेंटी / Patentee : 1.Swami Keshvanand Institute of Technology, Management and Gramothan 2.Kiran Rathi 3.Pooja Choudhary

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A DEVICE FOR SOLDERING ELECTRONIC COMPONENTS BY REFLOW SOLDERING TECHNIQUE AND THE PROCESS THEREOF* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2020 के तेरहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A DEVICE FOR SOLDERING ELECTRONIC COMPONENTS BY REFLOW SOLDERING TECHNIQUE AND THE PROCESS THEREOF* as disclosed in the above mentioned application for the term of 20 years from the 13<sup>th</sup> day of October 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/09/2024  
Date of Grant :

  
इकांत की अंडित  
पेटेंट नियंत्रक  
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अक्टूबर 2022 के तेरहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।

Note - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 13<sup>th</sup> day of October 2022 and on the same day in every year thereafter.



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

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

### Application Details

APPLICATION NUMBER	202311032112
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	05/05/2023
APPLICANT NAME	SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN
TITLE OF INVENTION	ANIMAL HEALTH MONITORING SYSTEM AND METHOD
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	patents@pna-ip.com
ADDITIONAL-EMAIL (As Per Record)	patents@pna-ip.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	14/07/2023
PUBLICATION DATE (U/S 11A)	28/07/2023

### Application Status

APPLICATION STATUS

**Application referred u/s 12 for examination.**

[View Documents](#)



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

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202311032570
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	08/05/2023
APPLICANT NAME	SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN
TITLE OF INVENTION	A SMART IRRIGATION SYSTEM FOR MONITORING AND CONTROLLING SOIL QUALITY AND ENVIRONMENTAL PARAMETERS
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	patents@pna-ip.com
ADDITIONAL-EMAIL (As Per Record)	patents@pna-ip.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	14/07/2023
PUBLICATION DATE (U/S 11A)	28/07/2023

#### Application Status

APPLICATION STATUS

**Application Awaiting Examination**

[View Documents](#)



ORIGINAL

मूल/No : 120061



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE

डिजाइन के पंजीकरण का प्रमाणपत्र  
CERTIFICATE OF REGISTRATION OF DESIGN

डिजाइन सं. / Design No. : 350381-001  
तारीख / Date : 29/09/2021  
पारस्परिकता तारीख / Reciprocity Date\* :  
देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **A SOLAR SECURITY CAMERA SYSTEM** से संबंधित है, का पंजीकरण, श्रेणी 16-01 में 1.Dr. Monika Mathur 2. Ms.Kiran Rathi 3.Ms.Rajni Idawal 4.Ms. Priyanka Sharma 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 16-01 in respect of the application of such design to **A SOLAR SECURITY CAMERA SYSTEM** in the name of 1.Dr. Monika Mathur 2. Ms.Kiran Rathi 3.Ms.Rajni Idawal 4.Ms. Priyanka Sharma.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अधधीन 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 : 16/12/2022

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

पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति देश के नाम पर की गई है: डिजाइन का सत्त्वाधिकार 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.



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

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

### Application Details

APPLICATION NUMBER	202411006632
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	31/01/2024
APPLICANT NAME	1 . Dr. Urmila Yadav 2 . Mrs. Keerthi HK 3 . Dr. Monica M 4 . Dr. Lakshmi P 5 . Mrs.Jhansi Rani Atluri 6 . Dr. Ajitha. S 7 . Dr. Vaishali Kothiya 8 . Dr. Jyoti Dange 9 . Shubhi Jain 10 . Ms. Shubhi Srivastava
TITLE OF INVENTION	A NOVEL HUMAN RESOURCE MANAGEMENT SYSTEM AND EMPLOYEE COMPENSATION PLANNING SYSTEM
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	mail2patentipr@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	09/02/2024

### Application Status



## Design Application Details

**Application Number:**

392824-001

**Cbr Number:**

210242

**Cbr Date:**

16/08/2023 15:43:20

**Applicant Name:**

1. Dr.Munish Manas      2. Prof.Akash Saxena      3. Dr.Shalini Shekhawat

## Design Application Status

**Application Status:**

Design Accepted and Published, Journal No is 43/2023 and Journal Date is 27/10/2023

[Back \(/DesignApplicationStatus/\)](#)

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

Controller General of Patents, Designs and Trademarks



Controller General of Patents, Designs and Trademarks  
Department of Industrial Policy and Promotion  
Ministry of Commerce and Industry

## Design Application Details

**Application Number:**

417813-001

**Cbr Number:**

208891

**Cbr Date:**

23/05/2024 19:34:50

**Applicant Name:**

1. Manoj Raman      2. Praveen Kumar Yadav      3. Ritu Shukla      4. Vipin Jain  
5. Shikha Shrivastava      6. Astha Joshi

## Design Application Status

**Application Status:**

Design Accepted and Published, Journal No is 27/2024 and Journal Date is 05/07/2024

[Back \(/DesignApplicationStatus/\)](#)

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  
Controller General of Patents, Designs and Trademarks

## Design Application Details

**Application Number:**

425630-001

**Cbr Number:**

213723

**Cbr Date:**

02/08/2024 17:57:57

**Applicant Name:**

1. Praveen Kumar Yadav    2. Manoj Raman    3. Ritu Shukla    4. Astha Joshi  
5. Abha Jain    6. Dr. Richa Rawal    7. Sanju Choudhary    8. Shikha Shrivastava

## Design Application Status

**Application Status:**

Design Accepted and Published, Journal No is 39/2024 and Journal Date is 27/09/2024

[Back \(/DesignApplicationStatus/\)](#)

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

Controller General of Patents, Designs and Trademarks

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311032111 A

(19) INDIA

(22) Date of filing of Application :05/05/2023

(43) Publication Date : 28/07/2023

(54) Title of the invention : A SMART COMPACT SOLAR FOOD DRYER

<p>(51) International classification :C11D 170400, F21S 090300, F26B 032800, H01L 310224, H02J 073500</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No :NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p><b>1)SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT &amp; GRAMOTHAN</b> Address of Applicant :RAMNAGARIA, JAGATPURA, JAIPUR – 302017. RAJASTHAN, INDIA Jaipur ----- ---</p> <p><b>2)Ankit Kumar Agarwal</b> Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p><b>1)Ankit Kumar Agarwal</b> Address of Applicant :Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----</p> <p><b>2)Dr. Chandan Kumar</b> Address of Applicant :Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----</p> <p><b>3)Dr. Ashish Nayyar</b> Address of Applicant :Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----</p> <p><b>4)Dr. K. B. Rana</b> Address of Applicant :Rajasthan Technical University, Kota, 324010 Kota -----</p> <p><b>5)Dr. B. Tripathi</b> Address of Applicant :Rajasthan Technical University, Kota, 324010 Kota -----</p> <p><b>6)Priyanshu Goyal</b> Address of Applicant :Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----</p> <p><b>7)Hemant Jangid</b> Address of Applicant :Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----</p>
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(57) Abstract :

The present invention provides a smart compact solar food dryer which comprises a drying chamber (1) comprises of an inlet air flow controlling valve (7); an air blower (6); a perforated thermal energy storage tray (3), and a product drying tray (2); a metal tube mounted at the bottom of the said drying chamber; an opening/closing lid (10); four supporting round metal stand; a plurality of copper (5) and evacuated tubes (6); and an air discharging chimney (9) wherein the said atmospheric air gets heated from the solar radiation passing through inner aluminium nitride coated glass tube and copper tubes and the said heated air reaches the bottom of the said drying chamber to provide the heat to the said perforated trays so as to absorb the moistures from the food of the drying tray and then exiting from the said air discharging chimney.

No. of Pages : 14 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application : 23/01/2023

(21) Application No. 202311004379 A

(43) Publication Date : 03/02/2023

(54) Title of the invention : AUTOMATIC ROBOTIC SANITIZER

<p>(51) International classification : F24F0006120000, B05B0017060000, A61L0002100000, B25J0009160000, B25J0015000000</p> <p>(86) International Application No : NA Filing Date : NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number : NA Filing Date : NA</p> <p>(62) Divisional to Application Number : NA Filing Date : NA</p>	<p>(71) Name of Applicant : <b>1) SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT &amp; GRAMOTHAN</b> Address of Applicant : RAM NAGARIYA RD. SHIVAM NAGAR, JAGATPURA, JAIPUR, RAJASTHAN 302017, INDIA Jaipur -----</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72) Name of Inventor : <b>1) Dr. Achin Srivastav</b> Address of Applicant : Swami Keshvanand Institute of Technology, Management &amp; Gramothan - Ram Nagariya Rd. Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017, INDIA Jaipur -----</p> <p><b>2) Rishabh Shrivastava</b> Address of Applicant : Swami Keshvanand Institute of Technology, Management &amp; Gramothan - Ram Nagariya Rd. Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017, INDIA Jaipur -----</p> <p><b>3) Rajan Sharma</b> Address of Applicant : Swami Keshvanand Institute of Technology, Management &amp; Gramothan - Ram Nagariya Rd. Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017, INDIA Jaipur -----</p> <p><b>4) Puneet Kumawat</b> Address of Applicant : Swami Keshvanand Institute of Technology, Management &amp; Gramothan - Ram Nagariya Rd. Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017, INDIA Jaipur -----</p> <p><b>5) Mannat Mehta</b> Address of Applicant : Swami Keshvanand Institute of Technology, Management &amp; Gramothan - Ram Nagariya Rd. Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017, INDIA Jaipur -----</p> <p><b>6) Naincy Kamthan</b> Address of Applicant : Swami Keshvanand Institute of Technology, Management &amp; Gramothan - Ram Nagariya Rd. Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017, INDIA Jaipur -----</p> <p><b>7) Pradyuman Chaudhary</b> Address of Applicant : Swami Keshvanand Institute of Technology, Management &amp; Gramothan - Ram Nagariya Rd. Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017, INDIA Jaipur -----</p>
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(57) Abstract :

The present invention relates to an automatic robotic sanitizer, comprising: a plurality of assembly components comprising of: a plurality of wheels of the said robotic sanitizer; a hex coupler with hexagonal socket at one side and hollow end at the other side of the said coupler; an ultrasonic humidifier piezoelectric transmitter module with an atomizing chip; a magnetic float sensor with a reed switch; a submersible motor pump with a pipe; a motor driver for controlling two brushed DC motors with high current; a wooden base with attached castor wheels; an upper sanitizing unit body of the said robot with a UV disinfecting chamber and a UV LED; a DC motor; a plurality of sets of batteries; a bi-colour LED cathode; a plurality of ultrasonic distance sensors; a microcontroller board; a spray unit with a mist maker; and an infra-red sensor for emitting and detecting infrared radiations.

No. of Pages : 21 No. of Claims : 18



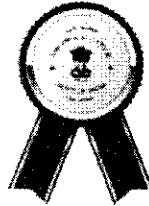
पेटेंट कार्यालय भारत सरकार | The Patent Office, Government Of India  
पेटेंट प्रमाण पत्र | Patent Certificate  
(पेटेंट नियमावली का नियम 74) (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 440954  
आवेदन सं. / Application No. : 201811020033  
फाइल करने की तारीख / Date of Filing : 29/05/2018  
पेटेंटी / Patentee : 1.Ashish Nayyar 2.Praveen Saraswat 3.Rajendra Singh  
Chundawat 4.Keshav Gupta

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकृतित *SYSTEM TO PROVIDE AUTOMATIC GEAR CHANGE AND THROTTLE COUPLED TO GEAR LEVER OF SPORTS VEHICLE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मई 2018 के उन्नीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *SYSTEM TO PROVIDE AUTOMATIC GEAR CHANGE AND THROTTLE COUPLED TO GEAR LEVER OF SPORTS VEHICLE* as disclosed in the above mentioned application for the term of 20 years from the 29<sup>th</sup> day of May 2018 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 27/07/2023  
Date of Grant :



  
Controller of Patents

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मई 2020 के उन्नीसवें दिन को और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 29<sup>th</sup> day of May 2020 and on the same day in every year thereafter.

\*यदि पेटेंटी व आविष्कारकों की संख्या अधिक है, पेटेंटी व आविष्कारकों के नाम पृष्ठ संख्या 2 पर जारी हैं।  
\*Since the Number of Patentees / Inventors is more, the name of Patentees / Inventors are continued on Page No. 2



पेटेंट कार्यालय, भारत सरकार | The Patent Office, Government Of India  
पेटेंट प्रमाण पत्र | Patent Certificate  
(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

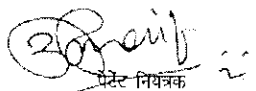
पेटेंट सं. / Patent No. : 451647  
आवेदन सं. / Application No. : 202011044179  
फाइल करने की तारीख / Date of Filing : 10/10/2020  
पेटेंटी / Patentee : 1.Amit Jhalani 2.Dr. Dilip Sharma 3.Dr. S.L. Soni

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *FORMULATION OF A NEWLY SYNTHESIZED GOMUTRA-IN-DIESEL EMULSION* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2020 के दसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *FORMULATION OF A NEWLY SYNTHESIZED GOMUTRA-IN-DIESEL EMULSION* as disclosed in the above mentioned application for the term of 20 years from the 10<sup>th</sup> day of October 2020 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 14/09/2023  
Date of Grant :



  
पेटेंट नियंत्रक  
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अक्टूबर 2022 के दसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10<sup>th</sup> day of October 2022 and on the same day in every year thereafter.

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202141006550 A

(19) INDIA

(22) Date of filing of Application :17/02/2021

(43) Publication Date : 26/02/2021

(54) Title of the invention : UTILIZATION OF BURR WASTES AS MICRO-REINFORCEMENTS IN CONCRETE TO OVERCOME DISPOSAL OF HAZARDOUS MATERIALS IN GLOBAL ENVIRONMENT

(51) International classification	:C04B0014020000. C04B0018140000. C08L0023020000. B28B0023020000. D07B0005000000	(71)Name of Applicant : 1)Dr.L.K.Rex Address of Applicant :30/34, Annai Theresa Street, Kamaraj Nagar Extn. Gorimedu Puducherry-605006, India Tamil Nadu India 2)Dr.V.S.Sethuraman 3)Mr.Akash Johari 4)Mr.Pankaj Gupta 5)Mr.Akshay.K.Uday 6)Dr.D.S.Vijayan 7)Mr.D.Antony Prabu 8)Dr.G.Vijayakumar 9)Dr.V.Manikandan 10)Dr.S.Sudhakar
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Dr.L.K.Rex 2)Dr.V.S.Sethuraman 3)Mr.Akash Johari 4)Mr.Pankaj Gupta 5)Mr.Akshay.K.Uday 6)Dr.D.S.Vijayan 7)Mr.D.Antony Prabu 8)Dr.G.Vijayakumar 9)Dr.V.Manikandan 10)Dr.S.Sudhakar
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(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	

(57) Abstract :

Concrete is the basic engineering material used in most civil constructions. It is extremely used because of the ability to possess high compressive strength and be molded into any desired shape. In order to overcome the poor tensile strength of concrete, fibers are introduced in the matrix. In this idea, burr wastes obtained from the CNC turning process in the lathe industry were disposed of as wastes in open lands in the industries' proximity, causing a hazard to the environment. Hence, these wastes were tested as fiber material in the form of micro-reinforcements in the concrete. Burr wastes were added to the concrete in volume fractions Vf=0%, 0.5%, 1.0%, 1.5% and 2.0% and tested for its compressive, split tensile and flexural strength. The experimental test results revealed that the compressive and flexural strength of burr waste concrete increased from 16.16% to 23.36% and 117% to 124%, respectively, for Vf = 0.5% to 2.0% at 28 days strength in comparison with concrete made without burr waste. The tensile strength of burr waste concrete increased up to 6.06% for Vf = 0.5% at 28 days strength when compared to conventional concrete. The experimental investigation observed that the addition of burr wastes as micro reinforcements in the concrete had significant improvement in concrete strength.

No. of Pages : 16 No. of Claims : 5



(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041026847 A

(19) INDIA

(22) Date of filing of Application :24/06/2020

(43) Publication Date : 10/07/2020

(54) Title of the invention : DURABILITY RESPONSE OF HIGH-PERFORMANCE CONCRETE WITH METAKAOLIN AND RICE HUSK ASH

(51) International classification :B01J  
29/08

(31) Priority Document No :NA

(32) Priority Date :NA

(33) Name of priority country :NA

(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

(71)Name of Applicant :

1)Dr.A.N.Swaminathan  
Address of Applicant :Professor & HEAD Department of Civil Engineering, Sree Sakthi Engineering College, Coimbatore-641104, Tamil Nadu, India Tamil Nadu India

2)Mr. Gourav Purohit

3)Dr.D.S.Vijayan

4)Mr.Sachin Sharma

5)Dr.V.S.Sethuraman

6)Dr.L.K.Rex

7)Dr.R.Vidya

8)Mr.P.Dinesh Kumar

9)Mr.S.Ramesh

10)Mr.Akash Johari

11)Dr.P.Rajaram

12)Dr.S.Sudhakar

(72)Name of Inventor :

1)Dr.A.N.Swaminathan

2)Mr. Gourav Purohit

3)Dr.D.S.Vijayan

4)Mr.Sachin Sharma

5)Dr.V.S.Sethuraman

6)Dr.L.K.Rex

7)Dr.R.Vidya

8)Mr.P.Dinesh Kumar

9)Mr.S.Ramesh

10)Mr.Akash Johari

11)Dr.P.Rajaram

12)Dr.S.Sudhakar

(57) Abstract :

Concrete is a widely used construction material in developing and developed countries in a structure. After several research results across different countries, the growth of concrete is eyed forward towards the growth of its performance. This high-performance concrete holds the different enhanced properties in it, such as durability by proving resistive to chemically varying atmosphere, reduction of CO2 by reducing the amount of cement, increased Ecology balance by balancing natural resources consumption. The vision of this invention extends towards the effect of mineral admixtures on the durability properties of high-performance concrete. To attend effective results such as low porosity, low water absorption, sorptivity, and proportioning of materials has always been the key parameters. M60 grade of concrete used in this experimental work. Curing is done to 3, 7, 14, 28, 56, and 90 days with 3 sample blocks for each curing period. This different mixture of concrete preferred upon further tests where the durability is determined cautiously. The durability properties of partially replaced cement are studied based on compressive strength, water absorption, porosity, and sorptivity. From the studies conducted, it observed that metakaolin and rice husk ash play a vital role in improving the durability of concrete at a later stage and improving the compressive strength at an early age.

No. of Pages : 18 No. of Claims : 4



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

(<http://ipindia.nic.in/index.htm>)



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GEOGRAPHICAL INDICATIONS

(<http://ipindia.nic.in/index.htm>)

### Application Details

APPLICATION NUMBER	202211056275
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	30/09/2022
APPLICANT NAME	1 . GATTANI, Dr. Manoj Kumar 2 . GATTANI, Suñita
TITLE OF INVENTION	CLEANING DEVICE FOR CLEANING KITCHEN UTENSILS
FIELD OF INVENTION	CHEMICAL
E-MAIL (As Per Record)	gipindia.ipr@gmail.com
ADDITIONAL-EMAIL (As Per Record)	kmalhotra1901@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	20/10/2022
PUBLICATION DATE (U/S 11A)	04/11/2022
FIRST EXAMINATION REPORT DATE	25/01/2023
Date Of Certificate Issue	20/10/2023
POST GRANT JOURNAL DATE	27/10/2023
REPLY TO FER DATE	24/07/2023

### Application Status



Australian Government

IP Australia

CERTIFICATE OF GRANT

INNOVATION PATENT

**Patent number:** 2021105548

The Commissioner of Patents has granted the above patent on 3 November 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Pooja Jain of Swami Keshvanand Institute of Technology, Management and Gramothan Jaipur Rajasthan India

Akash Saxena of Swami Keshvanand Institute of Technology, Management and Gramothan Jaipur Rajasthan India

Ankit Sharma of University of Engineering & Management Jaipur Rajasthan India

Bhanu Soni of University of Engineering & Management Jaipur Rajasthan India

Shalini Shekhawat of Swami Keshvanand Institute of Technology, Management and Gramothan Jaipur Rajasthan India

**Title of invention:**

Multi Agent Systems for Intelligent bidding price selection for profit accumulation.

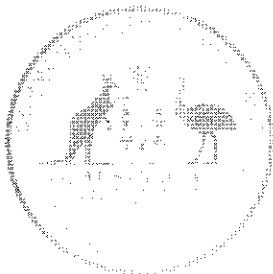
**Name of inventor(s):**

Jain, Pooja; Saxena, Akash; Sharma, Ankit; Soni, Bhanu and Shekhawat, Shalini

**Term of Patent:**

Eight years from 15 August 2021

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 3<sup>rd</sup> day of November 2021

Commissioner of Patents



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

(<http://ipindia.nic.in/index.htm>)




(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202211052282
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	13/09/2022
APPLICANT NAME	1 . Jitendra Kurmi 2 . Dr. Dilip Kumar Sharma 3 . M. K. Sharma 4 . Dr. Ajendra Sharma 5 . Dr. Sanjeev Kumar 6 . Nitesh Dhiman 7 . Dr. Omkar Suresh Vaidya 8 . Dr. Ruchi Gupta 9 . Dr. Subba Rao Polamuri 10 . Ankit Porwal 11 . Priyanka Sharma 12 . Ajay Bhardwaj
TITLE OF INVENTION	MACHINE LEARNING-BASED METHODOLOGY FOR DATABASE MIGRATION IN CLOUD COMPUTING ENVIRONMENT
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	thilaksayila@gmail.com
ADDITIONAL-EMAIL (As Per Record)	thilaksayila@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	16/09/2022

#### Application Status


 Office of the Controller General of Patents, Designs & Trade Marks  
 Department of Industrial Policy & Promotion,  
 Ministry of Commerce & Industry,  
 Government of India

(<http://ipindia.nic.in/index.htm>)



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GEOGRAPHICAL INDICATIONS

(<http://ipindia.nic.in/index.htm>)

**Application Details**

APPLICATION NUMBER	202311012501
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	23/02/2023
APPLICANT NAME	SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN
TITLE OF INVENTION	A SMART SYSTEM FOR AUTOMATIC SEGREGATION AND RECYCLING OF BIODEGRADABLE WASTE AND A METHOD OF THEREOF
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	patents@pna-ip.com
ADDITIONAL-EMAIL (As Per Record)	pnaipandtech@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	22/03/2023
PUBLICATION DATE (U/S 11A)	17/03/2023

**Application Status**

APPLICATION STATUS

**Application Awaiting Examination**

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Australian Government  
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# Register of Patents

Patents Act 1990

## Innovation Patent

Patent no: 2021104782

**Patentee(s):** Swami Keshvanand Institute of Technology, Management &  
Gramothan (SKIT) of Ramnagaria Jagatpura Jaipur Rajasthan 302017  
India

**Inventor(s):** Jain, Praveen Kumar  
Choudhary, Pooja  
Agarwal, Ankit  
Singh, Satendra  
Zafar, Rukhsar  
Arora, Swati  
Saharia, Ankur  
Janu, Neha  
Choudhary, Manju  
Jain, Pooja

**Title:** Internet of Things (IoT) sensors-based system for child monitoring &  
method thereof

**Term:** Eight years from 1 August 2021

**Date Granted:** 22 September 2021

**Date Certified:**

**Date of Patent:** 1 August 2021

**Status:** GRANTED

**Expiry Date:** 1 August 2029

**Date Ceased:**

**Date Revoked:**

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311030887 A

(19) INDIA

(22) Date of filing of Application :29/04/2023

(43) Publication Date : 19/05/2023

(54) Title of the invention : A SMART SYSTEM FOR CONTROLLING THE IGNITION SYSTEM AND LOCATING THE LOCATION OF A VEHICLE

(51) International classification :A61B 051500, A61B 173400, F02P 051500, F02P 090000, F24F 110000  
(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

(71)Name of Applicant :  
**1)SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN**  
Address of Applicant :RAMNAGARIA, JAGATPURA, JAIPUR – 302017, RAJASTHAN, INDIA Jaipur -----  
Name of Applicant : NA  
Address of Applicant : NA  
(72)Name of Inventor :  
**1)Sarfraz Nawaz**  
Address of Applicant :Associate Professor, Swami Keshvanand Institute of Technology, Management & Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  
-  
**2)Ankush Tandon**  
Address of Applicant :Associate Professor, Swami Keshvanand Institute of Technology, Management & Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  
-  
**3)Pooja Jain**  
Address of Applicant :Associate Professor, Swami Keshvanand Institute of Technology, Management & Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  
-  
**4)Shubhresh Sharma**  
Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management & Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  
**5)Sumit Saini**  
Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management & Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  
**6)Sweha Rajora**  
Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management & Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  
**7)Tanya Khundelwal**  
Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management & Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----

(57) Abstract :

The present invention provides a smart system for controlling the ignition system and locating the location of a vehicle comprises of: a cloud server; a GSM module shield; a power relay module; a GPS module; an electric circuit board; a microcontroller; a battery; a printed circuit board (PCB); connecting wires; and a user device comprises of a user interface wherein the said system does not allow any other person to start the vehicle without proper access to the vehicle and the said vehicle only starts when the user has proper access to it through the user interface. A process of controlling the ignition system of a vehicle using the said smart system is also provided.

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

37525

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311018334 A

(19) INDIA

(22) Date of filing of Application :17/03/2023

(43) Publication Date : 12/05/2023

(54) Title of the invention : A SECURED PASSWORD-BASED CIRCUIT BREAKER SYSTEM USING GSM TECHNOLOGY AND A METHOD THEREOF

<p>(51) International classification :C09K 089000, H04B 072600, H04L 090800, H04W 120600, H04W 840400</p> <p>(86) International Application No :PCT//</p> <p>Filing Date :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA</p> <p>Filing Date :NA</p> <p>(62) Divisional to Application Number :NA</p> <p>Filing Date :NA</p>	<p>(71)Name of Applicant :  <b>1)SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT &amp; GRAMOTHAN</b>  Address of Applicant :RAMNAGARIA, JAGATPURA, JAIPUR – 302017, RAJASTHAN, INDIA Jaipur -----  Name of Applicant : NA  Address of Applicant : NA</p> <p>(72)Name of Inventor :  <b>1)Ankush Tandon</b>  Address of Applicant :Associate Professor, Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  <b>2)Pooja Jain</b>  Address of Applicant :Associate Professor, Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  <b>3)Sarfaraz Nawaz</b>  Address of Applicant :Associate Professor, Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  <b>4)Anshuman</b>  Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  <b>5)Arun Prajapati</b>  Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  <b>6)Archana Jha</b>  Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----  <b>7)Anurag Singhal</b>  Address of Applicant :Student, Swami Keshvanand Institute of Technology, Management &amp; Gramothan, Ramnagaria, Jagatpura, Jaipur – 302017, Rajasthan, India Jaipur -----</p>
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(57) Abstract :  
The present invention provides a password-based circuit breaker system which comprises of a microcontroller for controlling the function of the said system; a GSM module for remote access to the said system; a relay driver for controlling the function of the relay; a password input device; a microcontroller board; electric bulbs module; an electric switch; a user device; and a power supply unit; wherein the said power supply unit provides the required voltage and current to the different electrical components of the said system. The system provides an efficient way for remotely controlling and monitoring the electrical power systems or equipment. The system also allows the user to remotely change the password of the electrical systems.

No. of Pages : 14 No. of Claims : 10





Australian Government

IP Australia

## CERTIFICATE OF GRANT

# INNOVATION PATENT

**Patent number:** 2021101516

The Commissioner of Patents has granted the above patent on 19 May 2021, and certifies that the below particulars have been registered in the Register of Patents.

**Name and address of patentee(s):**

Arun Kumar Rana of Assistant Professor, Panipat of Engineering and Technology, Samalkha Haryana 132102 India

Nirav Karelia of Assistant Professor, Department of Electrical Engineering, School of Technology Pandit Deendayal Petroleum University Gandhinagar, Gujrat 382007 India

Tarun Naruka of Associate Professor, Department of Electrical Engineering, SKIT Jaipur 302017 India

Vipin Chandra Pal of Assistant Professor, Department of, Electronics and Instrumentation, Engineering, National Institute of Technology, Silchar, Cachar Assam 788010 India

Souvik Ganguli of Assistant Professor, Department of, Electrical and Instrumentation, Engineering, Thapar Institute of Engineering and Technology Patiala, Punjab 147004 India

Anurag Sohane of Research Scholar, Department of, Electrical and Instrumentation, Engineering, Thapar Institute of Engineering and Technology Patiala, Punjab 147004 India

**Title of invention:**

A SYSTEM FOR MOVEMENT OF AUTONOMOUS VEHICLE AND A METHOD THEREOF

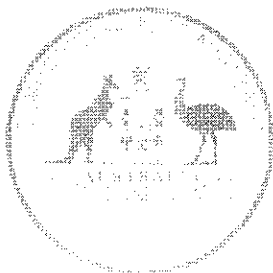
**Name of inventor(s):**

Rana, Arun Kumar; Karelia, Nirav; Naruka, Tarun; Pal, Vipin Chandra; Ganguli, Souvik and Sohane, Anurag

**Term of Patent:**

Eight years from 25 March 2021

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.



Dated this 19<sup>th</sup> day of May 2021

Commissioner of Patents



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. : 398232-001

तारीख / Date : 22/10/2023

पारस्परिकता तारीख / Reciprocity Date\*

देश / Country

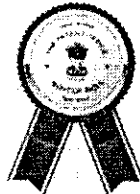
प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *DEVICE FOR IRRIGATION SYSTEM* से संबंधित है, का पंजीकरण, श्रेणी 15-03 में 1.Utkarsh Venaik 2. Dr Rajkamal Upadhyaya 3.Avinash Kumar Chauhan 4.Mr. Venkatesh Bharti 5.Dr Ona Ladiwal 6.Ankit Raj Singh के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

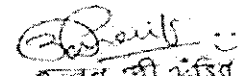
Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 15-03 in respect of the application of such design to *DEVICE FOR IRRIGATION SYSTEM* in the name of 1.Utkarsh Venaik 2. Dr Rajkamal Upadhyaya 3.Avinash Kumar Chauhan 4.Mr. Venkatesh Bharti 5.Dr Ona Ladiwal 6.Ankit Raj Singh.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अधीन 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 : 10/05/2024



  
कुमार जी अंबित  
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 स्वत्वधिकार 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 सकता है। 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.



ORIGINAL  
क्रम सं/ Serial No. : 172787



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. : 413302-001

तारीख / Date : 12/04/2024

पारस्परिकता तारीख / Reciprocity Date\* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *WASTE SORTING & RECYCLING STATION* से संबंधित है, का पंजीकरण, श्रेणी 07-05 में 1.Mr Venkatesh Bharti 2. Dr. Tapas Kumar 3.Kanika Rana 4.Arhita Uppal 5.Dr. Sonali P. Banerjee 6.Dr Ona Ladiwal 7.Ms Priyanka Sharma 8.Ankit Raj Singh 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 07-05 in respect of the application of such design to *WASTE SORTING & RECYCLING STATION* in the name of 1.Mr Venkatesh Bharti 2. Dr. Tapas Kumar 3.Kanika Rana 4.Arhita Uppal 5.Dr. Sonali P. Banerjee 6.Dr Ona Ladiwal 7.Ms Priyanka Sharma 8.Ankit Raj Singh.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन 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 : 13/06/2024



*[Signature]*  
इस्लाम की अखिरी

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.

(12) PATENT APPLICATION PUBLICATION

(21) Application No. 202411007082 A

(19) INDIA

(22) Date of filing of Application : 02/02/2024

(43) Publication Date : 09/02/2024

(54) Title of the invention : A SMART DECISION-MAKING SYSTEM FOR TRADE-OFF ANALYSIS AND OPPORTUNITY COST ASSESSMENT

(51) International classification : G06N002000000, G06Q0010060000, G16H0050200000, G06Q0050060000, G06Q0040080000

(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

(71) Name of Applicant :  
**1) Dr. Atul Gupta**  
 Address of Applicant : Swami Keshvanand Institute of Technology, Management & Gramothan, Rajasthan 302017 -----

**2) Tarun Sharma**  
**3) Dr. Ajay Verma**  
**4) Dr. Vedika Sharma**  
**5) Dr. Priyanka Sharma**  
 Name of Applicant : NA  
 Address of Applicant : NA

(72) Name of Inventor :  
**1) Dr. Atul Gupta**  
 Address of Applicant : Swami Keshvanand Institute of Technology, Management & Gramothan, Rajasthan 302017 -----

**2) Tarun Sharma**  
 Address of Applicant : Swami Keshvanand Institute of Technology, Management & Gramothan, Rajasthan 302017 -----

**3) Dr. Ajay Verma**  
 Address of Applicant : Swami Keshvanand Institute of Technology, Management & Gramothan, Rajasthan 302017 -----

**4) Dr. Vedika Sharma**  
 Address of Applicant : Sasmira's Institute of Management Studies and Research, Sasmira Rd, Worli, Mumbai, Maharashtra 400030

**5) Dr. Priyanka Sharma**  
 Address of Applicant : Sasmira's Institute of Management Studies and Research, Sasmira Rd, Worli, Mumbai, Maharashtra 400030

(57) Abstract :  
 ABSTRACT The present invention relates to a smart decision-making system (100) for trade-off analysis and opportunity cost assessment. The smart decision-making system (100) for trade-off analysis and opportunity cost assessment comprises a data integration module, a machine learning algorithms, an optimization of decision-making, a user-friendly interface and a real-time update features. The data integration module is configured to collate information from diverse sources, including historical performance metrics, market trends, and external factors. The machine learning algorithms are configured to analyze the integrated data, identify patterns, and predict outcomes related to trade-offs and opportunity costs associated with decision-making. The optimization of decision-making is configured to optimize decision-making by assessing the potential impact of various options and providing insights into the associated trade-offs and opportunity costs. The user-friendly interface is configured to facilitating seamless interaction with the system (100), allowing decision-makers to input preferences, view analyses, and navigate through the decision-making process.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311073544 A

(19) INDIA

(22) Date of filing of Application :28/10/2023

(43) Publication Date : 24/11/2023

(4) Title of the invention : AN ENHANCED DECISION-MAKING METHOD FOR STRATEGIC MANAGEMENT

(81) International classification : G06Q0010060000, G06N0005080000, G09B0007020000, G06K0009620000, G06Q0010100000

(71)Name of Applicant :

1)Dr. Savita

Address of Applicant :Associate Professor , Department of Management Studies, Swami Keshvanand Institute of Technology Management and Gramothan ,Ramnagaria, Jagatpura, Jaipur, 302017 -----

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

Name of Applicant : NA

Address of Applicant : NA

(87) International Publication No. : NA

(72)Name of Inventor :

1)Dr. Savita

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

Address of Applicant :Associate Professor , Department of Management Studies, Swami Keshvanand Institute of Technology Management and Gramothan ,Ramnagaria, Jagatpura, Jaipur, 302017 -----

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

(57) Abstract :

ABSTRACT The present invention relates to a method (100) for improving decision-making processes in strategic management. The method (100) involves conducting real-time data analytics, engaging stakeholders, and utilizing advanced tools for environmental analysis, decision criteria definition, and strategic alternative generation. The approach aims to enhance decision quality, reduce decision-making timelines, and foster a culture of continuous learning and improvement within organizations. The method (100) comprises the step of conducting regular reviews and assessments of decision outcomes to foster a culture of continuous learning and improvement. The enhanced decision-making method (100) for strategic management that can encourage creative thinking to generate a range of strategic alternatives.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311073233 A

(19) INDIA

(22) Date of filing of Application : 27/10/2023

(43) Publication Date : 24/11/2023

(54) Title of the invention : A METHOD FOR EMBRACING TRANSFORMATION AND DRIVING ORGANIZATIONAL SUCCESS IN THE DIGITAL AGE

(51) International classification G06Q0010060000, G06T0005000000, C12N0015820000, C07F0009650600, B25J0009160000

(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

(71) Name of Applicant :

1)Dr.Savita

Address of Applicant :Associate Professor , Department of Management Studies, Swami Keshvanand Institute of Technology Management and Gramothan ,Ramnagaria, Jagatpura, Jaipur, 302017 -----

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Dr.Savita

Address of Applicant :Associate Professor , Department of Management Studies, Swami Keshvanand Institute of Technology Management and Gramothan ,Ramnagaria, Jagatpura, Jaipur, 302017 -----

(57) Abstract :

TITLE: A METHOD FOR EMBRACING TRANSFORMATION AND DRIVING ORGANIZATIONAL SUCCESS IN THE DIGITAL AGE ABSTRACT The present invention relates to a method (100) for embracing transformation and driving organizational success in the digital age. The method (100) for embracing transformation and driving organizational success in the digital age comprises an assessment phase, strategic planning, cultural transformation, technology integration, monitoring and iteration. The method (100) for embracing transformation and driving organizational success in the digital age that can identify and address potential risks associated with the digital transformation process, implementing strategies to mitigate challenges and ensure a smooth transition. The method (100) for embracing transformation and driving organizational success in the digital age that can effectively integrate cutting-edge technologies into the organizational framework, ensuring that they enhance operational efficiency, innovation, and customer satisfaction.

No. of Pages : 13 No. of Claims : 6



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

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

### Application Details

APPLICATION NUMBER	202211053867
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	20/09/2022
APPLICANT NAME	1 . Dr. Richa Nangia 2 . Dr. Richa Arora 3 . Dr. Sachita Yadav 4 . Dr. Shubha Chandra 5 . Dr. Ona Ladiwal 6 . Dr. Sakshi Saxena
TITLE OF INVENTION	HUMAN RESOURCE DEVELOPMENT IN AUTOMOBILE INDUSTRY(A COMPARATIVE STUDY OF COMPANY X AND COMPANY Y)
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	chempatent1@gmail.com
ADDITIONAL-EMAIL (As Per Record)	richa.nangia16@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	--
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	23/09/2022

### Application Status

APPLICATION STATUS

**Awaiting Request for Examination**

[View Documents](#)



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

(<http://ipindia.nic.in/index.htm>)



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 PATENTS DESIGNS TRADE MARKS  
 GEOGRAPHICAL INDICATIONS

(<http://ipindia.nic.in/index.htm>)

### Application Details

APPLICATION NUMBER	202211025490
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	01/05/2022
APPLICANT NAME	1 . Dr. Richa Arora 2 . Dr. Richa Nangia 3 . Dr. Dimpy Sachar 4 . Dr. Nidhi Gupta 5 . Dr. Ona Ladiwal 6 . Nidhi
TITLE OF INVENTION	NOVEL ROADWAY TRANSPORT MANPOWER PLANNING AND OPTIMIZATION SYSTEM
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	latika.khanduja@iploea.com
ADDITIONAL-EMAIL (As Per Record)	jaspreet.singh@ipquad.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	02/05/2022
PUBLICATION DATE (U/S 11A)	06/05/2022

### Application Status

APPLICATION STATUS

**Abandoned U/s 21(1)**

[View Documents](#)





Office of the Controller General of Patents, Designs & Trade Marks  
Department of Industrial Policy & Promotion,  
Ministry of Commerce & Industry,  
Government of India

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

#### Application Details

APPLICATION NUMBER	202211052282
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	13/09/2022
APPLICANT NAME	1 . Jitendra Kurmi 2 . Dr. Dilip Kumar Sharma 3 . M. K. Sharma 4 . Dr. Ajendra Sharma 5 . Dr. Sanjeev Kumar — 6 . Nitesh Dhiman 7 . Dr. Omkar Suresh Vaidya 8 . Dr. Ruchi Gupta 9 . Dr. Subba Rao Polamuri 10 . Ankit Porwal 11 . Priyanka Sharma 12 . Ajay Bhardwaj —
TITLE OF INVENTION	MACHINE LEARNING-BASED METHODOLOGY FOR DATABASE MIGRATION IN CLOUD COMPUTING ENVIRONMENT
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	thilaksayila@gmail.com
ADDITIONAL-EMAIL (As Per Record)	thilaksayila@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	16/09/2022

#### Application Status