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STUDENT PATENT

Project Title:Smart Cattle Farm Using Robotics and Artificial Intelligence

Group members:

Gudmalwar Mahesh P. (B150673035)

Kotkar Reshma B. (B150673039)

Project Guide: Prof. (Dr.) Prakash H. Patil

Project Coordinator: Dr. Nilesh P. Bhosale

H.O.D: Mr. S. S. Badhe

Abstract:

In day to day life demand of milk and dairy products is increasing with increase in population. To overcome this demand efficient cattle farming plays an important role. Traditionally, maintenance of cattle farm is done by appointing human caretaker for cleaning of dung, feeding and watering to cattle. But this approach is less efficient and costly because of improper timely maintenance of cattle farm by caretaker. In this work artificial intelligence based smart cattle farm system is proposed for maintenance of cattle farm. Maintenance tasks such as cleaning of dung, feeding and watering to cattle are automatically scheduled and perform using robot and raspberry pi single board computer. The proposed system is efficient because it can avoid human errors such as improper scheduled cleaning of dung, feeding and watering to cattle. It also consists of metal detector which can detect metal in the feed and can remove manually.

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Photograph:

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(43) Publication Date : 10/05/2019

(54) Title of the invention : SMART CATTLE FARM DEVELOPED USING ARTIFICIAL INTELLIGENCE AND ROBOTICS.

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(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
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(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
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2)KOTKAR RESHMA BABURAO
(72)**Name of Inventor :**
1)GUDMALWAR MAHESH PRABHAKAR
2)KOTKAR RESHMA BABURAO

(57) Abstract :
ABSTRACT OF THE INVENTION SMART CATTLE FARM DEVELOPED USING ARTIFICIAL INTELLIGENCE AND ROBOTICS In day to day life demand of milk and dairy products is increasing with increase in population. To overcome this demand efficient cattle farming plays an important role. Traditionally, maintenance of cattle farm is done by appointing human caretaker for cleaning of dung, feeding and watering to cattle. But this approach is less efficient and costly because of improper timely maintenance of cattle farm by caretaker. In this work artificial intelligence based smart cattle farm system is proposed for maintenance of cattle farm. Maintenance tasks such as cleaning of dung, feeding and watering to cattle are automatically scheduled and perform using robot and Raspberry Pi single board computer. The proposed system is efficient because it can avoid human errors such as improper scheduled cleaning of dung, feeding and watering to cattle. It also consists of metal detector which can detect metal in the feed and can removed manually.

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

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List of Patents

Patent Name	Principal Investigator	Application ID	Publication Details
SYSTEM FOR IDENTIFICATION OF INDIAN CLASSICAL MUSICAL INSTRUMENT SOUNDS USING AUDIO DESCRIPTORS	Mr.S.R. Gulhane	201921013814	5/4/2019
SYSTEM AND METHOD FOR SPEAKER IDENTIFICATION USINGGEOGRAPHICAL REGIONLANGUAGE	Mr. S. S. Badhe	201921013820	5/4/2019
ARDUINO BASED BOODSKAPEE SYSTEM FOR RELLENOCIBUS USING BIOMETRIC	Ms. Rajashri K. Patil	201821036205	26/09/2018
4	ENCLOSURE BARREL CASING FOR HOUSEHOLD BROOM	Ms. Jyoti J Jadhav	201821035557	21/09/2018
5	HANDHELD STAPLER WITH STAPLER HAMMER	Ms. Jyoti J Jadhav	201821027115	20/07/2018
6	A GREENHOUSE ENVIRONMENT CONTROL SYSTEM	Mr. N. A. Dawande	1475/MUM/2013 A	4/17/2015
7	IMF-SYSTEM: INTELLIGENT MOBILE FINDING SYSTEM	Mr. S.G.Nagpure	201921039854	10/2/2019
8	PRAP-SYSTEM: PREVENTING REAL TIME ACCIDENTIAL PROBABILITIES SYSTEM	Mr. S. G. Nagpure	201911040175	10/4/2019
9	ML-SYSTEM: MOBILE LOCKING SYSTEM FOR VEHICLE	Mr. S.G.Nagpure	201911040184	10/4/2019
10	I-ADAPTER: INTELLIGENT ADAPTER	Mr. S.G.Nagpure	201911040245	10/4/2019

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11	EVM- CONTROL : ELECTRIC VEHICLE CONTROLLING SYSTEM USING BEAGLE BONE BLACK REV C(4G)	Mr. S.G.Nagpure	201941040658	10/9/2019
12	VM- SYSTEM: IOT BASED VEHICLE MONITORING SYSTEM USING BEAGLE BONE KIT	Mr. S.G.Nagpure	201911040479	10/7/2019
13	W-SIM: WATER SIM (PER MEMBER WATER USE CONTROL AND MANAGEMENT SYSTEM)	Mr. S.G.Nagpure	201911041744	15/10/19
14	ITV –OPERATOR: INTELLIGENT TELEVISION OPERATOR	Mr. S.G.Nagpure	201911039519	30/09/19
15	VEHICLE MONITORING AND CONTROLLING BY USING INERTIAL NAVIGATION SYSTEM INTEGRATED WITH GLOBAL POSITIONNG SYSTEM.	Mrs. Vaishali V. Thorat	202021006912	28/02/2020
16	THE SAFETY BELT FOR INDUSTRIAL ROBOTS	Mr. Kartik N Argulwar	201921052300	20/12/2019
17	BATTERY OPERATED SMART TELEVISION	Mr. Kartik N Argulwar	201721034101 A	10/11/2017

2.A Patent was published by Prof.V.V.Thorat named "VEHICLE MONITORING AND CONTROLLING BY USING INERTIAL NAVIGATION SYSTEM INTEGRATED WITH GLOBAL POSITIONNG SYSTEM." On 28th Feb 2020

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते
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	202021006912
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	18/02/2020

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APPLICANT NAME	**1 . VAISHALI V. THORAT** **2 . CHETANA V. THORAT**
TITLE OF INVENTION	VEHICLE MONITORING AND CONTROLLING BY USING INERTIAL NAVIGATION SYSTEM INTEGRATED WITH GLOBAL POSITIONNG SYSTEM.
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	
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E-MAIL (UPDATED Online)	
PRIORITY DATE	NA
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	28/02/2020

Application Status	
APPLICATION STATUS	**Application Published**
	View Documents

3. **IMF-System: Intelligent Mobile Finding System (Application No. 201921039854) Patent was filed by Prof.S.G.Nagpure**

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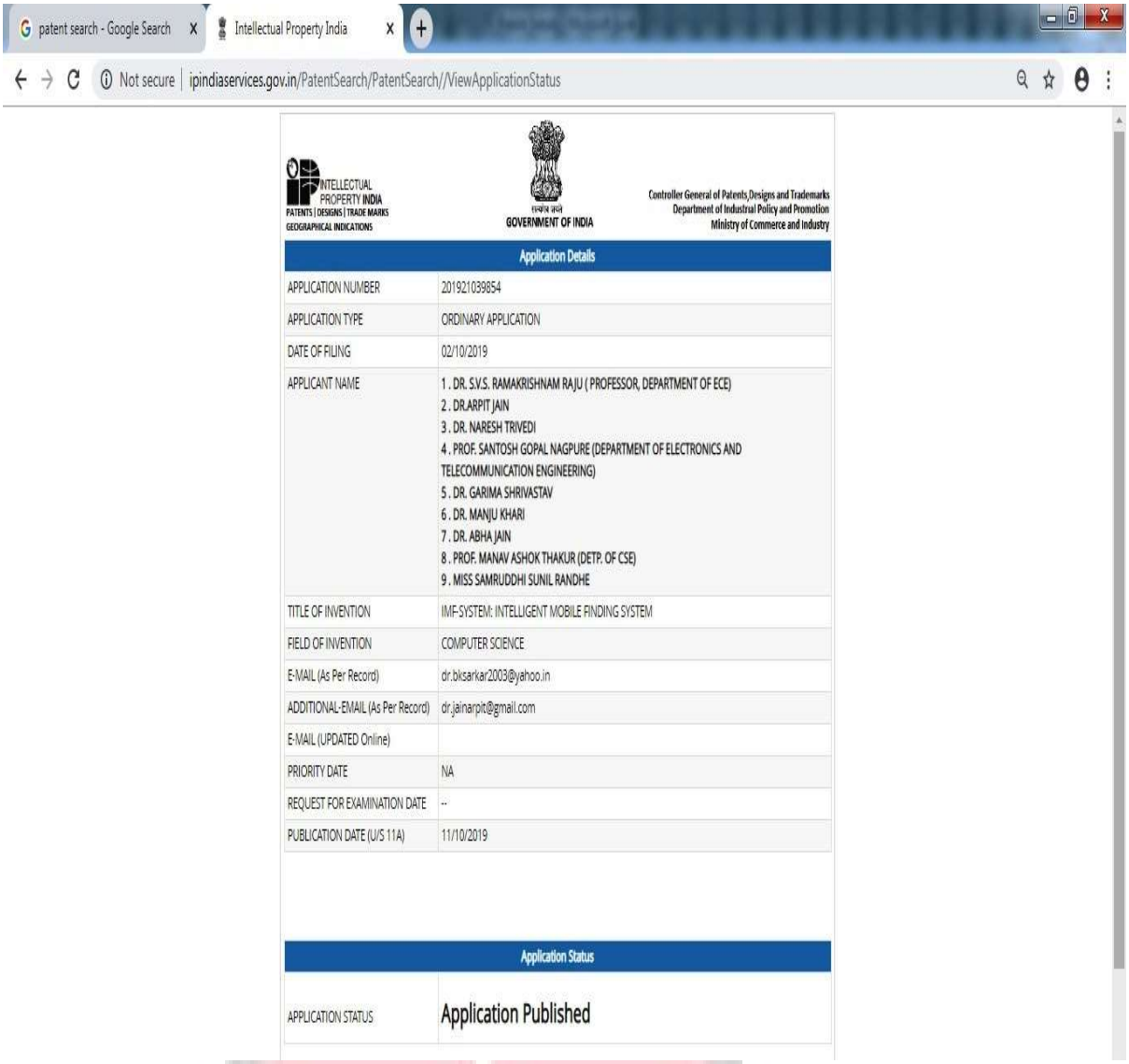

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4. **“THE SAFETY BELT FOR INDUSTRIAL ROBOTS” patent with Application No: 201921052300 published on 20/12/2019 was filed by by Prof.K.N.Argulwar**

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/12/2019

(21) Application No.201921052300 A
(43) Publication Date : 20/12/2019

(54) Title of the invention : THE SAFETY BELT FOR INDUSTRIAL ROBOTS

(51) International classification : B25J0013080000,B25J0009160000,G06N0003000000,B25J0019060000,B25J0019000000
(31) Priority Document No : NA
(32) Priority Date : NA
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(61) Patent of Addition to Application Number : NA Filing Date : NA
(62) Divisional to Application Number : NA Filing Date : NA

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3)Akash Anil Walde
4)Kartik N. Argulwar
5)Ajinkya Ravindra Kottawar
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(72)**Name of Inventor :**
1)Balu Patil
2)Ashish Gaikwad
3)Akash Anil Walde
4)Kartik N. Argulwar
5)Ajinkya Ravindra Kottawar
6)Chaitanya Gajbhiye

(57) Abstract :
Industrial robots are generally used worldwide in the automation industries for faster, accurate and repeated operations in relatively static environments for over 30 years. So now days, proxumity interaction between industrial robots and human operators is latest trends in research which encouraged many technological innovations to convert these robots for human robot platforms. This technique can be used to solve many industrial issues. One of them is accidents caused by Human- Robot interactions. In majority industries human and robots shares the same work environment which results chances of accidents between human and robots if robots are not equipped with proper protection. In this work, a new method is proposed to avoid collisions between human and robot in automation industries. Today many options are available in market which reduces human robot collisions but most of them are either costly or difficult to integrate with the system. In order to add safety feature in the industrial robots, either programming has to be changed or internal hardware. The widely used industrial robots don€™ accept such changes. So the present invention uses proximity IR sensors and microcontroller which are mounted on safety belt. The safety belt is applied on industrial robot. The proximity sensor is connected to the microcontroller in order to give the position of human in terms of electrical signals. The output signals from microcontroller are given to the robotic controller. According to the algorithm dumped in microcontroller and robotic controller, these controllers moves robotic arm in order to avoid human robot contact.

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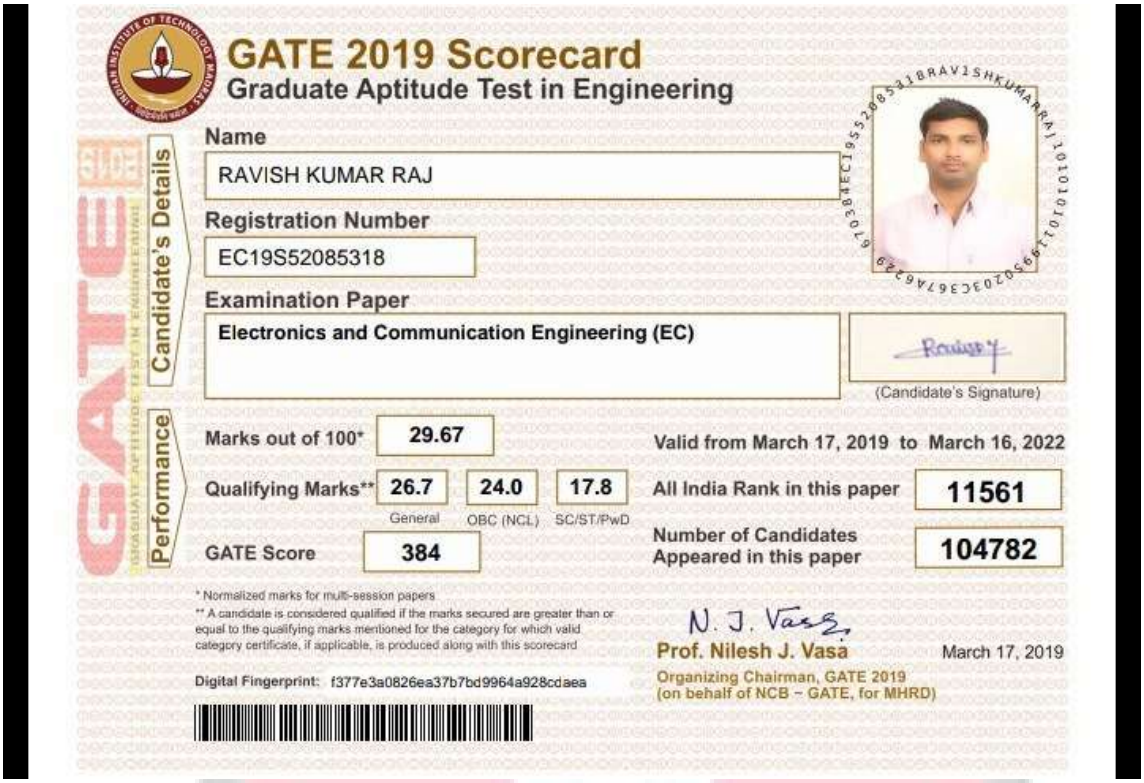
1. **Mr.Ravish Kumar Raj,PG Scholar in Signal Processing has qualified GATE-2019 & GATE-2020 exams for 2 consecutive times in a row**



GATE 2019 Scorecard
Graduate Aptitude Test in Engineering

Candidate's Details

Name
RAVISH KUMAR RAJ

Registration Number
EC19S52085318

Examination Paper
Electronics and Communication Engineering (EC)

(Candidate's Signature)

Performance

Marks out of 100* 29.67

Valid from March 17, 2019 to March 16, 2022

Qualifying Marks** 26.7 (General) 24.0 (OBC (NCL)) 17.8 (SC/ST/PwD)

All India Rank in this paper 11561

GATE Score 384

Number of Candidates Appeared in this paper 104782

* Normalized marks for multi-session papers
** A candidate is considered qualified if the marks secured are greater than or equal to the qualifying marks mentioned for the category for which valid category certificate, if applicable, is produced along with this scorecard

Prof. Nilesh J. Vasa
Organizing Chairman, GATE 2019
(on behalf of NCB – GATE, for MHRD)

March 17, 2019

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