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### Application Details

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TITLE OF INVENTION	SOLAR BASED SMART IRRIGATION SYSTEM
FIELD OF INVENTION	MECHANICAL ENGINEERING
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### Application Status

APPLICATION STATUS	<b>Application Published</b>
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**FORM 1****(FOR OFFICE USE ONLY)****THE PATENTS ACT, 1970****(39 of 1970)****&****THE PATENTS RULES, 2003****APPLICATION FOR GRANT OF PATENT****[See sections 7,54 & 135 and rule 20(1)]****Application No.:** .....**Filing Date:** .....**Amount of Fee Paid:** .....**CBR No.:** .....**Signature:** .....**1. APPLICANT(S):**

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### 3. TITLE OF THE INVENTION: SOLAR BASED SMART IRRIGATION SYSTEM

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Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Titile of the Invention
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### 6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

### 7. PARTICULARS FOR FILING DIVISIONAL APPLICATION

Original (first) Application Number	Date of Filing of Original (first) Application
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### 8. PARTICULARS FOR FILING PATENT OF ADDITION:

Main Application / Patent Number:	Date of Filing of Main Application
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### 9. DECLARATIONS:

#### (i) Declaration by the inventor(s)

I/We ,Dr. S. Karthikumar,Dr. M. Karthikeyan,Dr. M. Palanisamy,Dr. P. Gopi Krishnan,Dr. K. Umapathi,Mr. S. Perumal,Mr. S. Om Prakash,Mr. M. Natrayan,Mr. R. Dineshkumar,Mr. A. R. Sivanesh,Mr. B. S. Manoj Prabhakar,Mr. D. Nijesh,Mr. J. Baskaran,Mr. D. Winston Paul,Mr. S. Balamurugan, is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.



(a) Date: -----

(b) Signature(s) of the inventor(s): .....

(c) Name(s): Dr. S. Karthikumar,Dr. M. Karthikeyan,Dr. M. Palanisamy,Dr. P. Gopi Krishnan,Dr. K. Umapathi,Mr. S. Perumal,Mr. S. Om Prakash,Mr. M. Natrayan,Mr. R. Dineshkumar,Mr. A. R. Sivanesh,Mr. B. S. Manoj Prabhakar,Mr. D. Nijesh,Mr. J. Baskaran,Mr. D. Winston Paul,Mr. S. Balamurugan

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

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

(a) Date: -----

(b) Signature(s) : .....

(c) Name(s) of the singnatory: Dr. S. Karthikumar,Dr. M. Karthikeyan,Dr. M. Palanisamy,Dr. P. Gopi Krishnan,Dr. K. Umapathi,Mr. S. Perumal,Mr. S. Om Prakash,Mr. M. Natrayan,Mr. R. Dineshkumar,Mr. A. R. Sivanesh,Mr. B. S. Manoj Prabhakar,Mr. D. Nijesh,Mr. J. Baskaran,Mr. D. Winston Paul,Mr. S. Balamurugan

**(iii) Declaration by the applicant(s)**

- **The Complete specification relating to the invention is filed with this application.**
- **I am/We are, in the possession of the above mentioned invention.**
- **There is no lawful ground of objection to the grant of the Patent to me/us.**

**10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:**

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

Dated this(Final Payment Date): -----

Signature: .....

Name: Mr.S. Balamurugan

To The Controller of Patents  
The Patent office at CHENNAI

**This form is electronically generated.**

## **SOLAR BASED SMART IRRIGATION SYSTEM**

### **FIELD OF INVENTION**

The present investigation is based on the solar based smart irrigation system.

### **BACKGROUND OF THE PRESENT INVENTION**

Solar energy has a very high potential around all parts in India. For this motivation, the irrigation of numerous crops in these areas with photovoltaic (PV) energy systems is steadily gaining more interest. Agriculture has been backbone of India since it provides livelihood for many people in rural areas. India positioned first for producing millet, rice and paddy crops and this country also produces large amount of wheat. Vegetables like dry bean, chickpea, pulses, lettuce and chicory, lentil, onion, cabbage, green pea, cauliflowers and broccoli, potato, ginger, pumpkin, rapeseed, sugar cane, sesame, okra are largely produced in India. Most of the crops need water for healthy growth and high yield. Water for irrigation purpose is mainly taken from the groundwater based well since India has the world's largest groundwater well equipped irrigation system. Irrigation pump sets are used for irrigation purpose which mainly uses the power supply grid. This irrigation pump sets accounts nearly 40 % of the states power consumption. Continuous usage of power leads to depletion of resources which accountable for frequent power cuts. Major threat for agriculture is interrupted power supply which tends to damage or lower the crop production rate or yield. The photovoltaic based power generation for the irrigation purpose has gained interest among the researchers and scientist. Solar energy based pumping system for irrigation rapidly developed over the last decade, due to low cost of PV module and expansion of new electronic solutions for power monitoring. Initially DC motors were used with the PV system to pump the water. Proposed invention is that water is pumped directly into the irrigation system with the help of photovoltaic energy that offers electricity for powering a variable speed pump. New mathematical model also developed to simulate the irrigation performance of this PV irrigation system.

- US20130087640A1 discloses an irrigation system includes a central pivot; a main section pivotally connected to the central pivot; and at least one solar panel supported on the main section. A control system positions the main section relative to the central pivot so that the solar panel faces the sun.
- WO2016174576A1 discloses a system which allows the fertilization and irrigation of agricultural lands, supplied with photovoltaic solar energy, in particular of the stand

alone type, particularly adapted for use in predominantly not electrified areas, thus allowing the cultivation in rural areas as well.

- US8517289B2 discloses an apparatus and method of moving a mobile tower using solar power are disclosed for use with an irrigation system. The disclosed improvement includes a solar panel with a collecting surface to convert light energy to electrical energy, an electrical charge source in communication with the solar panel to receive electrical energy, and a motor to drive a ground-engaging wheel in communication with the electrical charge source. The improvement also includes a direction control system for regulating rotation of the solar panel and a tilt assembly for adjusting the angle of the solar panel to maintain the disposition of the collecting surface in alignment with the direction of incoming sunlight. The method of moving the mobile tower includes collecting light energy with a solar panel, converting the light energy into electrical energy, and driving a wheel of the mobile tower with a motor powered by the converted electrical energy.
- US20060032938A1 discloses a system including an irrigation system and a solar power assembly coupled to the irrigation system. Solar energy is received. The solar energy is utilized to charge at least one battery. The battery then provides power from the at least one battery to an irrigation controller.
- US20110087379A1 discloses an efficient solar powered irrigation controller system is disclosed with methods for implementing and operating the system. In a solar powered irrigation system, an irrigation controller is configured to deliver a predetermined alternating current voltage to a plurality of solenoid valves for activating the valves. A photovoltaic system is electrically coupled to the irrigation controller and supplies the predetermined alternating current voltage, rather than 110 VAC line voltages, thereby eliminating the necessity for step-down transformer in the controller. The scheduling of the watering duration in the irrigation cycles is predicated on the amount of solar radiation received at the site, in conjunction with the solar cells in the photovoltaic system, thereby lowering the power consumption of the controller and the plurality of solenoid valves corresponding with solar radiation received at the solar cells. A photovoltaic system is selected for the irrigation system, by matching the power generation capacity of the solar cells to the lowered power demand of the irrigation controller by biasing irrigation zone activation durations with solar radiation.

- CN104285763A discloses a precision solar irrigation system based on the internet of things. The system comprises a soil moisture data acquisition module, a solar energy power supply module, an irrigation execution module, a video monitoring module, a 3G network module and a remote control terminal. Data of the modules are transmitted to the 3G network module, and the 3G network module is connected to the internet and transmits the received data to the internet; the remote control terminal is connected to the internet to acquire the data of the modules transmitted by the 3G network module and transmits an irrigation execution command to the internet; the 3G network module receives the irrigation execution command through the internet and transmits to the irrigation execution module, and the irrigation execution module executes irrigation according to the irrigation execution command; the irrigation execution module comprises a programmable logic controller and an executing solenoid valve; the solar energy power supply module supplies power for the soil moisture data acquisition module, the 3G network module and the executing solenoid valve. The system has small installation workload, high adaptation and high control precision, reliability and responding speed.

## **OBJECT OF THE INVENTION**

The objective of the invention is to provide a low-cost solar based smart irrigation system.

## **DETAILED DESCRIPTION OF THE INVENTION**

The schematic flow diagram of solar based smart irrigation system is shown in the Figure. 1. This diagram provides general information about how the circuit is connected from solar grid to field. The irrigation distribution system consists of a centrifugal pumping mechanism that supplies water directly into the irrigation distribution circuit. In this invention, the power to drive pumping motor is directly taken from the solar grid. This could be possible by integrating variable speed pump integrated with the asynchronous electric motor as shown in the Figure. 1. Non-compensating emitters also used in this system to run the variable pump with the help of varying water inlet pressure. The very basic equation is used to calculate operating point of the pumping system by considering pump head and discharge section. The operation starts from the solar grid by providing power to entire irrigation system. The sensor network system measures moisture, humidity, and temperature and soil minerals like nitrogen, phosphorus and potassium. The measure values of soil properties could be seen in

LCD display. GSM module connected with microcontroller transfers information about the system and field to user via sms. The microcontroller converts analog signals received from the different sensors to digital signal as per coded values. The coded value consists of upper threshold and lower threshold. This code generates the signal to turn motor on or off. For the safety feature manual on and off are provided with this invention.

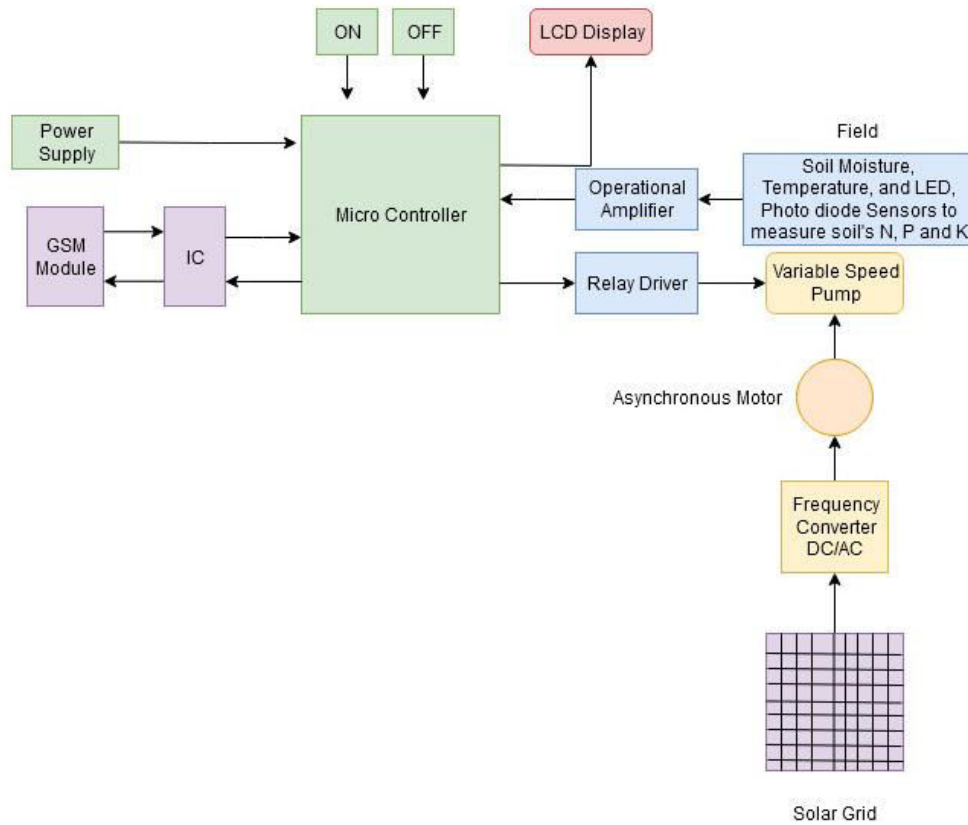


Figure. 1. Schematic view of solar based smart irrigation system

## WE CLAIM

The solar based smart irrigation system

1. This invention consists of solar grid, frequency converter, variable speed motor, soil moisture sensor, humidity sensor, temperature sensor, NPK sensor unit along with GSM module.
2. This irrigation system designed to work under variable water pressure Non-compensating emitters.
3. Claim in claim 1, YL 69 soil moisture sensor, DHT 11 humidity sensor, LM 35 temperature sensors are used.

4. The GSM module is integrated with this irrigation system to make it as wireless system.
5. Claim in claim 4, SIM 900 D with nano sim slot are used.

## **ABSTRACT**

Solar energy has very high potential around all parts in India. For this motivation, the irrigation of numerous crops in these areas with photovoltaic (PV) energy systems is steadily gaining more interest. Agriculture has been backbone of India since it provides livelihood for many people in rural areas. The aim of the present innovation is to provide smart solution to the farmer who solely depends on agriculture. This innovation brings smart solution to all level of agriculture land including small, medium and large along with the automated irrigation system. This smart irrigation system constructed through the support of different sensors including soil moisture sensor, humidity sensor, and temperature sensor along with nitrogen, phosphorus and potassium measuring units. The GSM module integrated with this irrigation system makes this system as wireless system and feeds information about the particular field every time through sms alert. The solar grid acts best section in this system which provides power supply to entire circuits in this irrigation system. This innovation increases livelihood of farmers because it provides solution to the interrupted power supply which tends to damage or lower the crop production rate or yield.

FORM 2  
**THE PATENT ACT 1970 &**  
The Patents Rules, 2003  
**COMPLETE SPECIFICATION**  
(See section 10 and rule 13)

1. TITLE OF THE INVENTION:

**IOT BASED SURFACE DUST FINDING AND CLEANING MACHINE**

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**REAMBLE TO THE DESCRIPTION**

<b>PROVISIONAL</b>	<b>COMPLETE</b>
The following specification describes the	the following specification Invention. Particularly describes the invention and the manner in which it is to be performed.



## **FIELD OF THE INVENTION**

This invention “**IOT BASED SURFACE DUST FINDING AND CLEANING MACHINE**” is relates to surface cleaning machine with the help of dirtiness level determining method which can provide a diversity of cleaning surface conditions to the user.

## **BACKGROUND OF THE INVENTION**

The present invention is in the technical field of floor cleaning devices. More particularly, the present invention is in the technical field of safety features for automated floor cleaners. Conventional automated self-propelled cleaning robots offer many advantages over human operated machines, such as lower ongoing operating costs and the ability to clean large floor surfaces with minimal human interaction. Examples of existing automation systems for self-propelled cleaning robots are disclosed in commonly assigned U.S. Pat. Nos. 9,028,617, 8,532,860, 6,667,592, and 6,124,694, the contents of which are expressly incorporated by reference. Unfortunately, self-propelled cleaning robots may create a slightly elevated risk of damage to the robot or surrounding obstacles in the event the robot inadvertently collides or makes contact with surrounding obstacles. Further, damage to the robot or surrounding areas might also occur in the unlikely event that an unexpected fault occurs within the robot creating hazards such as fire, or risks of electrical shock. Therefore, it is desirable to improve or add safety measures to existing automated self-propelled cleaning robots. Further, a surface clean machine becomes more and more popular in recent years. However, a conventional surface clean machine only can clean a cleaning surface but cannot show the dirtiness level or related information of a cleaning surface.

## **PRIOR ART STATEMENT**

US6148476A discloses a floor scrubber (10) is disclosed including a drive lug (62) for removably connecting a scrubbing member (64) to a drive (60) and having a trough for receipt and catching of solution for passage to the surface. The mount (58) for the drive (60) is biased by a spring (67) to pivot relative to a linkage plate (46) in turn pivotably mounted to the chassis (12) at an acute angle to the forward movement direction. The vacuum assembly (92) is sandwiched in a socket (100) formed in the bottom wall of a recovery tank (90) by a mount (106) to deaden the sound generated thereby and to allow air communication inside of the socket (100) but generally preventing entry of solution therein. The squeegee assembly (152) is biased by a gas spring (150) to engage the surface at a constant force independent of the pivotal position of the squeegee mount (148). The batteries (68, 70) can be easily

electrically connected and disconnected to each other in series and to the scrubber (10) by polarity type connectors (80, 82, 84, 86) for ease of removal, replacement, and interchange of the batteries (68, 70) in the scrubber (10) without requiring the use of tools. The bumper wheels (30) are secured to a first plate (32) of a pocket (28) by a pin connector (36) passing there through and through the legs of a U-shaped bracket (42) having a central portion flushly abutting with a second plate (38) of the pocket (28) for transferring forces thereto.

US20060236494A1 discloses a floor cleaner configured to perform both hard and soft floor cleaning operations includes a mobile body, a motorized cleaning head, a cleaning liquid dispenser, a vacuum, a first vacuum extractor tool and a vacuum squeegee connected to the mobile body. The mobile body is configured to travel over a surface. The motorized cleaning head is connected to the mobile body and includes a cleaning tool. The cleaning liquid dispenser is configured to apply a cleaning liquid to the surface or the cleaning tool. The first vacuum extractor tool is configured for vacuum communication with the vacuum through a first vacuum path.

US4167799A discloses a combination foam and steam carpet cleaning machine incorporating separate storage compartments for the hot water and the foaming liquid, automatic control of vacuum wands positioned ahead and to the rear of the steam jets to permit forward and reverse motion during the steam cleaning operation, individual height adjustments for the cleaning brush and the vacuum wand and spring loading of the vacuum wand to insure adequate pressure of the wand against the carpet for maximum vacuuming efficiency. The machine is self-propelled in both forward and reverse directions.

EP0173393A2 discloses a floor cleaning machine comprising a speed control and steering member which operates under operator-applied deformation thereof. The invention provides improved consumer convenience at steering and speed control.

US5044043A discloses a drive control for a vehicle such as a floor scrubber, a floor sweeper, a pallet truck or the like, operated by a person walking or riding on a sulky behind it, includes first and second drive motors each arranged to drive a vehicle wheel. Manual means are provided whereby an operator by manipulation of a control may determine vehicle speed; forward and reverse direction; and turning right or left. A variable voltage is responsive to the operator's movements for providing an electrical signal representative of the desired speed in either the forward or reverse direction. Other movements by the operator of the control provide turning in the right or left direction. The means for detecting a turning control signal

from the operator is effective to reduce the motor drive signal to the motor on the inside of the desired turn, from the level representative of the existing speed toward a no-speed level at a programmed rate. The control further includes a proximity reverse sensing means effective to stop reverse movement of the vehicle upon sensing the presence of an operator closely adjacent the rear of the vehicle and for providing a short burst of forward movement of the vehicle upon such detection. The control further can provide signals to control operative functions of the controlled vehicle which may be affected by speed or direction of the vehicle.

### **SUMMARY OF THE INVENTION**

The present invention discloses a dirtiness level determining system of a surface cleaning machine, comprising: an optical information generating circuit, configured to generate optical information; a feature level determining circuit, configured to determine an optical feature level of the optical information; and a reminding message generating circuit, configured to generate at least one dirtiness level reminding message according to a relation between the optical feature level and a feature threshold level when light from the surface cleaning machine can reach the cleaning surface and the optical information can be generated based on the light from the surface cleaning machine; wherein the dirtiness level reminding message is adapted to indicate a cleaning status of the cleaning surface, and the cleaning status includes at least one parameter of: a dirtiness level of the cleaning surface, a dirtiness location of the cleaning surface, and an air quality of a room where the cleaning surface locates in. Many methods can be applied to compute image quality of sensing images. In one embodiment, a number for decreasing or increasing for grey levels of neighboring pixels in each row of a sensing image is computed, and such result is multiplied by a weighting value to acquire an image quality parameter IP. The higher the image quality parameter IP, the better the image quality is. The reason for why the image quality can be determined by this way is: the image is clear if the image has a better image quality, thus variation for the grey levels of neighboring pixels is more obvious. On the opposite, the image is blurred if the image has a poor image quality, thus variation for the grey levels of neighboring pixels is non-obvious.

### **DESCRIPTION OF THE INVENTION**

Figure.1. is a block diagram illustrating an optical movement quality determining system according to one embodiment of the present invention. The optical movement quality determining system 100 comprises a location determining module 101, an optical information

generating module 103, an information quality determining module 105 and a movement quality reminding message generating module 107. The optical information generating module 103 is provided in an optical movement detecting apparatus, configured to generate optical information OI. The location determining module 101 determines a relative location between an object and the optical movement detecting apparatus according to the optical information OI. The information quality determining module 105 is configured to determine information quality IQ of the optical information OI. The movement quality reminding message generating module 107 is configured to generate at least one movement quality reminding message according to a relation between the information quality IQ and a quality threshold value. The movement quality reminding message can be light, a voice, or images, such that the user can acquire a movement quality of the optical movement detecting apparatus. The above-mentioned optical information generating module 103 is an image sensor, and the optical information OI is a sensing image captured by the optical information generating module 103. In such example, the information quality IQ is image quality for sensing images. Also, the optical movement detecting apparatus can be an optical navigating apparatus (ex. an optical mouse) or an optical touch control apparatus. Besides, the above-mentioned object can be a finger or a surface, such as a desk surface that the optical mouse is provided on. Related contents will be described for more detail below. In this embodiment, since the relative location between the object and the optical movement detecting apparatus is based on the sensing images, the quality for sensing images is directly proportional to the movement quality of the optical movement detecting apparatus. However, the image quality may be affected by various kinds of factors. For example, a dirty condition for the surface that the optical movement detecting apparatus is put on, or a dirty condition for a lens which the image sensor applies to capture sensing images. The sensing image is firstly processed by a filter to filter noise in the sensing image. After that, each of the pixel grey levels for the sensing image is compared with a predetermined value, which has a larger value (i.e. brighter, such as 180). If the pixel greys level is lower than the predetermined value, a counting value of the counter increases by 1. The lower the counting value, the better the image quality is. The reason for why the image quality can be determined by this way is: a sensing image having better image quality always has a dark region image, rather than the whole sensing image is bright. Oppositely, if almost the whole sensing image is bright, it means the image is blurred and has a poor image quality. The dirtiness level determining system 700 comprises an optical information generating circuit 701 a feature level determining circuit 703, a reminding message generating device 705 and a control circuit

707. The optical information generating circuit 701 senses optical information OI generated according to light L, which is from a light source 709. The cleaning surface CS can be any kind of surface, such as a ground or a surface of furniture. The feature level determining circuit 703 is configured to determine an optical feature level FL of the optical information OI. In one embodiment, the optical information generating circuit 701 is an image sensor, the optical information OI is an image, and the feature level determining circuit 703 determines the image features to generate the optical feature level FL, but not limited. The image feature can be, for example, at least one pixel having higher or lower pixel values, or an image part having a specific shape. In one embodiment, a high optical feature level means the image feature is obvious. On the opposite, a low optical feature level means the image feature is non-obvious. The reminding message generating device 705 is configured to generate at least one dirtiness level reminding message RM according to a relation between the optical feature level FL and a feature threshold level. The dirtiness level reminding message RM can be light, a voice, or an image, or any combination thereof. The dirtiness level reminding message RM can be directly shown on the surface *cleaning machine*, or be transmitted to an electronic device can communicate with the surface *cleaning machine* (e.g. a mobile phone or a tablet computer). The dirtiness level reminding message RM is adapted to indicate a cleaning status of the cleaning surface, and the cleaning status includes at least one parameter of: a dirtiness level of the cleaning surface CS, a dirtiness location of the cleaning surface CS, and an air quality of a room where the cleaning surface CS locates in. The dirtiness level of the cleaning surface CS means how dirty the cleaning surface is. For example, the more the hair or the dust on the cleaning surface CS, the higher the dirtiness level is. Also, the dirtiness location means a location of a fixed dirty area exists on the cleaning surface CS, and the air quality means the air quality determined according to the optical information OI.

## **WE CLAIMS**

1. The IoT based surface dust finding and cleaning machine, comprising: an optical information generating circuit, configured to generate optical information; a feature level determining circuit, configured to determine an optical feature level of the optical information; and a reminding message generating circuit, configured to generate at least one dirtiness level reminding message according to a relation between the optical feature level and a feature threshold level when light from the surface cleaning machine can reach a cleaning surface outside the surface cleaning machine and the optical information can be generated based on the light reaching the

cleaning surface; wherein the dirtiness level reminding message is adapted to indicate a cleaning status of the cleaning surface, and the cleaning status includes at least one parameter of: a dirtiness level of the cleaning surface, a dirtiness location of the cleaning surface, and an air quality of a room where the cleaning surface locates in.

2. The Iot based surface dust finding and cleaning machine of claim 1, wherein the reminding message generating circuit creates the dirtiness level reminding message indicating a fixed dirty area exists on the cleaning surface, if a control circuit of the surface cleaning machine determines the fixed dirty area still exists according to the optical information after the surface cleaning machine cleans the fixed dirty area.
3. The control circuit controls the reminding message generating circuit to generate the dirtiness level reminding message RM with a parameter of "a dirtiness location of the cleaning surface" to inform the user that a dirty region which could not be cleaned by the surface cleaning machine exists.
4. If the dirtiness level is high, the image IM\_E1 generated according to the light from an LED has obvious image features due the dust, such as the image features.

# **IOT BASED SURFACE DUST FINDING AND CLEANING MACHINE**

## **ABSTRACT**

The invention “**IOT BASED SURFACE DUST FINDING AND CLEANING MACHINE**” is a device comprising of an optical information generating circuit, which is designed to generate optical information, self cleaning circuit, and a reminding message generating circuit to send information about the floor status. The dirtiness in the floor prediction system uses optical information is generated based on light from a first light source in the surface dust finding machine. Based on the dirtiness parameters given to the system, generates the dirtiness level reminding message to inform the user that a dirty region which could not be cleaned by the machine.

**FORM 1**  
**THE PATENTS ACT, 1970**  
**(39 of 1970)**  
**&**  
**THE PATENTS RULES, 2003**  
**APPLICATION FOR GRANT OF PATENT**  
**[See sections 7,54 & 135 and rule 20(1)]**

**(FOR OFFICE USE ONLY)**

**Application No.:** .....

**Filing Date:** .....

**Amount of Fee Paid:** .....

**CBR No.:** .....

**Signature:** .....

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### 3. TITLE OF THE INVENTION: IOT BASED SURFACE DUST FINDING AND CLEANING MACHINE

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Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Titile of the Invention
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#### 6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

#### 7. PARTICULARS FOR FILING DIVISIONAL APPLICATION

Original (first) Application Number	Date of Filing of Original (first) Application
-------------------------------------	--

#### 8. PARTICULARS FOR FILING PATENT OF ADDITION:

Main Application / Patent Number:	Date of Filing of Main Application
-----------------------------------	------------------------------------

#### 9. DECLARATIONS:

##### (i) Declaration by the inventor(s)

I/We ,Dr.Lijo Jacob Varghese,Dr.Suma Sira Jacob,Dr.P.Tharcis,M.Sivaramkrishnan,Dr.M.Siva Ramkumar,S. Narasimman,Umapriya R,Tamil Selvi S,Dr.D.Ganeshaperumal,Dr.S.Kaliappan,P Jeyabharathi,Dr.N.Prakash,Dr.R.Saravanan,Bibhu Prasad Ganthia, is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: -----

(b) Signature(s) of the inventor(s): .....

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

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

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**(iii) Declaration by the applicant(s)**

- **The Complete specification relationg to the invention is filed with this application.**
- **I am/We are, in the possession of the above mentioned invention.**
- **There is no lawful ground of objection to the grant of the Patent to me/us.**

10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:

Sr.	Document Description	FileName
-----	----------------------	----------

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

Dated this(Final Payment Date): -----

Signature: .....

Name: Mr.S. Balamurugan

To The Controller of Patents

The Patent office at CHENNAI

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(12) PATENT APPLICATION PUBLICATION

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(22) Date of filing of Application :11/09/2020

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A47L0015420000,  
G05D0001020000,  
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Filing Date :NA

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(57) Abstract :

The invention IOT BASED SURFACE DUST FINDING AND CLEANING MACHINE• is a device comprising of an optical information generating circuit, which is designed to generate optical information, self cleaning circuit, and a reminding message generating circuit to send information about the floor status. The dirtiness in the floor prediction system uses optical information is generated based on light from a first light source in the surface dust finding machine. Based on the dirtiness parameters given to the system, generates the dirtiness level reminding message to inform the user that a dirty region which could not be cleaned by the machine.

No. of Pages : 13 No. of Claims : 4



### Application Details

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APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	12/10/2020
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TITLE OF INVENTION	ARTIFICIAL INTELLIGENCE BASED GARBAGE CLEARING SYSTEM BASED ON INTERNET OF THINGS
FIELD OF INVENTION	MECHANICAL ENGINEERING
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ADDITIONAL-EMAIL (As Per Record)	balapk1971@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	16/10/2020

### Application Status



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THE GAZETTEE OF INDIA – EXTRAORDINARY [PART II—Sec 3(ii)]

FORM 2  
THE PATENT ACT 1970  
(39 of 1970)  
&  
The Patents Rules, 2003  
PROVISIONAL/COMPLETE SPECIFICATION  
(See Section 10 and Rule 13)

COMPLETE

ARTIFICIAL INTELLIGENCE BASED GARBAGE CLEARING SYSTEM  
BASED ON INTERNET OF THINGS

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12-Oct-2020/89193/202041044302/Form 2(Title Page)



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The following specification particularly describes the invention  
and the manner in which it is to be performed

**FORM 9**  
**THE PATENT ACT, 1970**  
 (39 of 1970)  
 &  
**The Patents Rules, 2003**  
**REQUEST FOR PUBLICATION**  
 [See Section 11A[2]; rule 24A]

CBR : 34198  
 DATE : 12/10/2020  
 AMT : 2750/-  
 P.V.  
 12/10/20

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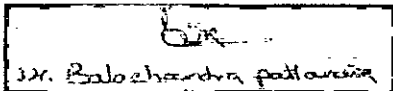
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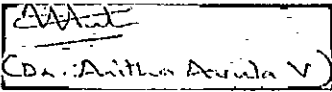
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hereby request for early publication of our  
application for Patent No.....dated  
..... under section 11A(2) of the Act.  
Dated this .....day of .....20.

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Note:- For Fee: See First Schedule

12-Oct-2020/89193/202041044302/Form 9

### Application Details

APPLICATION NUMBER	202031041836
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	25/09/2020
APPLICANT NAME	1 . Mr. Bibhu Prasad Ganthia 2 . Monalisa Mohanty 3 . Mr. Subash Ranjan Kabat 4 . Mr.B.Karthikeyan 5 . Dr. Anita Christaline. J. 6 . Mr.SRIRAM MANISH KUMAR E 7 . Mrs.P Jeyabharathi 8 . Dr. Md. Musthak 9 . Dr. G. SARAVANAKUMAR 10 . Dr. J. SATHEESH KUMAR 11 . Mr. G.Veeramalai 12 . Dr.R.Saravanan
TITLE OF INVENTION	ARTIFICIAL INTELLIGENCE BASED FIRE FIGHTING ROBOT WITH SMART SENSORS
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	jb.bibhu@gmail.com
ADDITIONAL-EMAIL (As Per Record)	jb.bibhu@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	16/10/2020

**FORM 1**  
**THE PATENTS ACT, 1970**  
**(39 of 1970)**  
**&**  
**THE PATENTS RULES, 2003**  
**APPLICATION FOR GRANT OF PATENT**  
**[See sections 7,54 & 135 and rule 20(1)]**

**(FOR OFFICE USE ONLY)**

**Application No.:** .....

**Filing Date:** .....

**Amount of Fee Paid:** .....

**CBR No.:** .....

**Signature:** .....

**1. APPLICANT(S):**

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3	Mr. Subash Ranjan Kabat	India	PhD Research Scholar, School of Electrical Engineering, Kalinga Institute of Industrial Technology, KIIT Road, Patia, Bhubaneswar, Odisha	India	Orissa
4	Mr.B.Karthikeyan	India	Research Scholar, PSNA College of Engineering and Technology,Dindigul, Tamilnadu-	India	Tamil Nadu
5	Dr. Anita Christaline. J.	India	Assistant Professor, Department of ECE, SRM Institute of Science and Technology, No.1, JN Salai, Vadapalani, Chennai.	India	Tamil Nadu
6	Mr.SRIRAM MANISH KUMAR E	India	LECTURER , EEE , ANNAMALAI POLYTECHNIC COLLEGE , CHETTINAD	India	Tamil Nadu
7	Mrs.P Jeyabharathi	India	"Assistant Professor, Department Electronics and Communication Engineering ,Sri Ranganathar Institute of Engineering and Technology Athiapalayam Coimbatore.	India	Tamil Nadu
8	Dr. Md. Musthak	India		India	Karnataka

			Associate Professor, Department of Mechanical Engineering, Deccan College of Engineering and Technology, Dar-us-salam, Hyderabad.		
9	Dr. G. SARAVANAKUMAR	India	"Assistant Professor, Department of Mathematics, M.Kumarasamy College of Engineering(Autonomous), Thalavapalyam, Karur-639113.	India	Tamil Nadu
10	Dr. J. SATHEESH KUMAR	India	"Assistant Professor, Department of ECE, Hindusthan College of Engineering and Technology, Coimbatore - 641032.	India	Tamil Nadu
11	Mr. G.Veeramalai	India	"Assistant Professor, Department of Mathematics, M.Kumarasamy College of Engineering(Autonomous), Thalavapalyam, Karur-639113.	India	Tamil Nadu
12	Dr.R.Saravanan	India	Associate Professor, Balaji Institute of Technology and Science,Laknepally,Narasampet, Warangal (D.t),Telangana State	India	Telangana

## 2. INVENTOR(S):

Sr.No.	Name	Nationality	Address	Country	State
1	Mr. Bibhu Prasad Ganthia	India	Assistant Professor, Department of Electrical Engineering, Indira Gandhi Institute of Technology, Sarang, Dhenkanal, Odisha, India,	India	Orissa
2	Monalisa Mohanty	India	Teaching Associate, Department of Electrical & Electronics Engineering, ITER, SIKsha 'O' Anusandhan Deemed to be University, Jagamara, Khandagiri, Bhubaneswar, Odisha	India	Orissa
3	Mr. Subash Ranjan Kabat	India	PhD Research Scholar, School of Electrical Engineering, Kalinga Institute of Industrial Technology, KIIT Road, Patia, Bhubaneswar, Odisha	India	Orissa
4	Mr.B.Karthikeyan	India	Research Scholar, PSNA College of Engineering and Technology,Dindigul, Tamilnadu-	India	Tamil Nadu
5	Dr. Anita Christaline. J.	India	Assistant Professor, Department of ECE, SRM Institute of	India	Tamil Nadu

			Science and Technology, No.1, JN Salai, Vadapalani, Chennai.		
6	Mr.SRIRAM MANISH KUMAR E	India	LECTURER , EEE , ANNAMALAI POLYTECHNIC COLLEGE , CHETTINAD	India	Tamil Nadu
7	Mrs.P Jeyabharathi	India	"Assistant Professor, Department Electronics and Communication Engineering ,Sri Ranganathar Institute of Engineering and Technology Athiapalayam Coimbatore.	India	Tamil Nadu
8	Dr. Md. Musthak	India	Associate Professor, Department of Mechanical Engineering, Deccan College of Engineering and Technology, Dar-us-salam, Hyderabad.	India	Karnataka
9	Dr. G. SARAVANAKUMAR	India	"Assistant Professor, Department of Mathematics, M.Kumarasamy College of Engineering(Autonomous), Thalavapalyam, Karur-639113.	India	Tamil Nadu
10	Dr. J. SATHEESH KUMAR	India	"Assistant Professor, Department of ECE, Hindusthan College of Engineering and Technology, Coimbatore - 641032.	India	Tamil Nadu
11	Mr. G.Veeramalai	India	"Assistant Professor, Department of Mathematics, M.Kumarasamy College of Engineering(Autonomous), Thalavapalyam, Karur-639113.	India	Tamil Nadu
12	Dr.R.Saravanan	India	Associate Professor, Balaji Institute of Technology and Science,Laknepally,Narasampet, Warangal (D.t),Telangana State	India	Telangana

**3. TITLE OF THE INVENTION: ARTIFICIAL INTELLIGENCE BASED FIRE FIGHTING ROBOT WITH SMART SENSORS**

**4. ADDRESS FOR CORRESPONDENCE OF APPLICANT /  
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**5. PRIORITY PARTICULARS OF THE APPLICATION(S) FILED IN CONVENTION COUNTRY:**

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Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Title of the Invention
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**6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:**

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

**7. PARTICULARS FOR FILING DIVISIONAL APPLICATION**

Original (first) Application Number	Date of Filing of Original (first) Application
-------------------------------------	--

**8. PARTICULARS FOR FILING PATENT OF ADDITION:**

Main Application / Patent Number:	Date of Filing of Main Application
-----------------------------------	------------------------------------

**9. DECLARATIONS:**

**(i) Declaration by the inventor(s)**

I/We ,Mr. Bibhu Prasad Ganthia,Monalisa Mohanty,Mr. Subash Ranjan Kabat,Mr.B.Karthikeyan,Dr. Anita Christaline. J.,Mr.SRIRAM MANISH KUMAR E,Mrs.P Jeyabharathi,Dr. Md. Musthak,Dr. G. SARAVANAKUMAR,Dr. J. SATHEESH KUMAR,Mr. G.Veeramalai,Dr.R.Saravanan, is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: -----

(b) Signature(s) of the inventor(s): .....

(c) Name(s): Mr. Bibhu Prasad Ganthia,Monalisa Mohanty,Mr. Subash Ranjan Kabat,Mr.B.Karthikeyan,Dr. Anita Christaline. J.,Mr.SRIRAM MANISH KUMAR E,Mrs.P Jeyabharathi,Dr. Md. Musthak,Dr. G. SARAVANAKUMAR,Dr. J. SATHEESH KUMAR,Mr. G.Veeramalai,Dr.R.Saravanan

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

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

(a) Date: -----

(b) Signature(s) : .....

(c) Name(s) of the singnatory: Mr. Bibhu Prasad Ganthia,Monalisa Mohanty,Mr. Subash Ranjan Kabat,Mr.B.Karthikeyan,Dr. Anita Christaline. J.,Mr.SRIRAM MANISH KUMAR E,Mrs.P Jeyabharathi,Dr. Md. Musthak,Dr. G. SARAVANAKUMAR,Dr. J. SATHEESH KUMAR,Mr. G.Veeramalai,Dr.R.Saravanan

**(iii) Declaration by the applicant(s)**

- **The Complete specification relating to the invention is filed with this application.**
- **I am/We are, in the possession of the above mentioned invention.**
- **There is no lawful ground of objection to the grant of the Patent to me/us.**

10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:

<b>Sr.</b>	<b>Document Description</b>	<b>FileName</b>
1	SEQUENCE LISTING(PDF)	Sequence LISTING of Patent Work-AI based robot-sep-2020.pdf
2	DRAWINGS	FIGURES AI based robot Work sep 2020 - Copy.pdf
3	PRIORITY DOCUMENTS	PRIORITY of Patent Work-AI based robot-sep-2020.pdf

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

Dated this(Final Payment Date): -----

Signature: .....

Name: N.Ramachandran

To The Controller of Patents

The Patent office at KOLKATA

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### Application Details

APPLICATION NUMBER	202041044312
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	12/10/2020
APPLICANT NAME	<b>1 . Dr.BALACHANDRA PATTANAİK</b> <b>2 . Dr.JAIPRAKASH NARAIN DWIVEDI</b> <b>3 . Dr.YAGNAM NAGESH</b> <b>4 . Dr.B.BARANI SUNDARAM</b> <b>5 . Mr.BALAM SURESH KUMAR</b> <b>6 . Dr.ANITHA AVULA V</b> <b>7 . Mr.VINAY KUMAR ENUGALA</b> <b>8 . Dr.V.SRAVANKUMAR</b> <b>9 . Mr.JANGA VIJAKUMAR</b> <b>10 . Dr.MANJULA PATTNAİK</b>
TITLE OF INVENTION	BASED ON INTERNET OF THINGS RESIDENTIAL ROBBERY COLLUDING METHOD ADOPTING MACHINE LEARNING SYSTEM
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	balapk1971@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	23/10/2020

### Application Status



THE GAZETTEE OF INDIA – EXTRAORDINARY [PART II—Sec 3(ii)]

FORM 2  
THE PATENT ACT 1970  
(39 of 1970)  
&  
The Patents Rules, 2003  
PROVISIONAL/COMPLETE SPECIFICATION  
(See Section 10 and Rule 13)  
COMPLETE

**BASED ON INTERNET OF THINGS RESIDENTIAL ROBBERY  
COLLUDING METHOD ADOPTING MACHINE LEARNING SYSTEM.**

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(c) ADDRESS: Princess Noura Bint AbdulRehman University, Associate Professor, Department of Accounting, College of Business Administration, Riyadh, Post Box No. 84428, Kingdom of Saudi Arabia

The following specification particularly describes the invention  
and the manner in which it is to be performed

पेटेंट कार्यालय  
शासकीय जर्नल

**OFFICIAL JOURNAL  
OF  
THE PATENT OFFICE**

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निर्गमन सं. 51/2020  
ISSUE NO. 51/2020

शुक्रवार  
FRIDAY

दिनांक: 18/12/2020  
DATE: 18/12/2020

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पेटेंट कार्यालय का एक प्रकाशन  
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041053475 A

(19) INDIA

(22) Date of filing of Application :08/12/2020

(43) Publication Date : 18/12/2020

(54) Title of the invention : A FLEXIBLE EXTENSION SWITCH BOX ALONG WITH SHOCK PROOF TECHNIQUES

(51) International classification

:H01H  
9/04

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(86) International Application No

:NA

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(87) International Publication No

:NA

(61) Patent of Addition to Application Number

:NA

Filing Date

:NA

(62) Divisional to Application Number

:NA

Filing Date

:NA

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**2)Mrs. B. Sridevi**

**3)Mr. B. Ranjith Kumar**

**4)Mrs. A. Leela Sravanthi**

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**6)Ms. K.Jayasree**

**7)Mr. K.Ramakanth**

**8)Mrs. P.Shalini**

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**4)Mrs. A. Leela Sravanthi**

**5)Mr. P.Rajesh**

**6)Ms. K.Jayasree**

**7)Mr. K.Ramakanth**

**8)Mrs. P.Shalini**

(57) Abstract :

ABSTRACT A FLEXIBLE EXTENSION SWITCH BOX ALONG WITH SHOCK PROOF TECHNIQUES A flexible extension switch box along with shock proof techniques aims at providing a flexible and compact switch box that can be folded along the line of fold. The line of fold can be used to fold the switch box and make it look compact and easy to carry around. The shock proof is achieved along with cutoff mechanism that is the switch box will have threshold voltage preset and the gate will cut off the passing of electricity when there is short circuit or abrupt voltage variation. The entire body of the switch box is made by using an insulating material and thus claiming to be shock proof as well.

No. of Pages : 17 No. of Claims : 6

**FORM 1**  
**THE PATENTS ACT, 1970**  
**(39 of 1970)**  
**&**  
**THE PATENTS RULES, 2003**  
**APPLICATION FOR GRANT OF PATENT**  
**[See sections 7,54 & 135 and rule 20(1)]**

**(FOR OFFICE USE ONLY)**

**Application No.:** .....

**Filing Date:** .....

**Amount of Fee Paid:** .....

**CBR No.:** .....

**Signature:** .....

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5	Mr. P. Rajesh	India	17-10-364, Ursu, Subhash Nagar, Warangal Urban, Telangana, India	India	Telangana
6	Ms. K. Jayasree	India	1-9-856, Postal Colony, 8th Cross, Subedari, Hanamkonda, Warangal Urban, Telangana, India	India	Telangana
7	Mr. K. Ramakanth	India	24-4-8/1, 100 feet Darga Road, Darga, Kazipet, Warangal Urban, Telangana, India	India	Telangana
8	Mrs. P. Shalini	India	Maturi Venkata Subba Rao Engineering College, Nadergul, Badangpet - 501510	India	Telangana

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4	Mrs. A. Leela Sraavanthi	India	25-4-438/1, Vishnupuri, Kazipet, Telangana, India	India	Telangana
5	Mr. P. Rajesh	India	17-10-364, Ursu, Subhash Nagar, Warangal Urban, Telangana, India	India	Telangana
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			Telangana,India		
7	Mr. K.Ramakanth	India	24-4-8/1,100 feet Darga Road,Darga, Kazipet, Warangal Urban, Telangana,India	India	Telangana
8	Mrs. P.Shalini	India	Maturi Venkata Subba Rao Engineering College, Nadergul, Badangpet - 501510	India	Telangana

### 3. TITLE OF THE INVENTION: A FLEXIBLE EXTENSION SWITCH BOX ALONG WITH SHOCK PROOF TECHNIQUES

#### 4. ADDRESS FOR CORRESPONDENCE OF APPLICANT / Telephone No.:

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Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Titlte of the Invention
--------	---------	--------------------	-------------	-----------------------	-------------------------

#### 6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

#### 7. PARTICULARS FOR FILING DIVISIONAL APPLICATION

Original (first) Application Number	Date of Filing of Original (first) Application
-------------------------------------	--

#### 8. PARTICULARS FOR FILING PATENT OF ADDITION:

Main Application / Patent Number:	Date of Filing of Main Application
-----------------------------------	------------------------------------

#### 9. DECLARATIONS:

##### (i) Declaration by the inventor(s)

I/We ,Mr. P. Nagaraju,Mrs. B. Sridevi,Mr. B. Ranjith Kumar,Mrs. A. Leela Sravanthi,Mr. P.Rajesh,Ms. K.Jayasree,Mr. K.Ramakanth,Mrs. P.Shalini, is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: -----

(b) Signature(s) of the inventor(s): .....

(c) Name(s): Mr. P. Nagaraju,Mrs. B. Sridevi,Mr. B. Ranjith Kumar,Mrs. A. Leela Sravanthi,Mr. P.Rajesh,Ms. K.Jayasree,Mr. K.Ramakanth,Mrs. P.Shalini

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

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

(a) Date: -----

(b) Signature(s) : .....

(c) Name(s) of the singnatory: Mr. P. Nagaraju, Mrs. B. Sridevi, Mr. B. Ranjith Kumar, Mrs. A. Leela Sravanthi, Mr. P. Rajesh, Ms. K. Jayasree, Mr. K. Ramakanth, Mrs. P. Shalini

**(iii) Declaration by the applicant(s)**

- **The Complete specification relating to the invention is filed with this application.**
- **I am/We are, in the possession of the above mentioned invention.**
- **There is no lawful ground of objection to the grant of the Patent to me/us.**

10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:

Sr.	Document Description	FileName
-----	----------------------	----------

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

Dated this(Final Payment Date): -----

Signature: .....

Name: Gowthami S

To The Controller of Patents

The Patent office at CHENNAI

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**FORM 2**  
THE PATENTS ACT,  
1970 (39 OF 1970)  
  
AND  
  
THE PATENT RULES,  
2003

**COMPLETE SPECIFICATION**

(See section 10 and rule  
13)

**TITLE OF INVENTION**

**“A FLEXIBLE EXTENSION SWITCH BOX ALONG WITH SHOCK PROOF  
TECHNIQUES”**

<b>NAME OF APPLICANT</b>	<b>NATIONALITY</b>	<b>ADDRESS</b>
<b>MR. P. NAGARAJU</b>	<b>INDIAN</b>	<b>H.NO.: 11-23-2048, TEACHER’S COLONY, DESHAIPET ROAD, WARANGAL URBAN, TELANGANA, INDIA</b>
<b>MRS. B. SRIDEVI</b>	<b>INDIAN</b>	<b>H.NO. 4-5/3A, PAKHAL ROAD, AMBEDKAR CENTRE, NARSAMPET, WARANGAL RURAL, TELANGANA, INDIA</b>
<b>MR. B. RANJITH KUMAR</b>	<b>INDIAN</b>	<b>H.NO.: 11-25-235, KOTHAWADA, WARANGAL URBAN, TELANGANA, INDIA</b>

<b>MRS. A. LEELA SRAVANTHI</b>	<b>INDIAN</b>	<b>25-4-438/1, VISHNUPURI, KAZIPET, TELANGANA, INDIA</b>
<b>MR. P. RAJESH</b>	<b>INDIAN</b>	<b>17-10-364, URSU, SUBHASH NAGAR, WARANGAL URBAN, TELANGANA, INDIA</b>
<b>MS. K. JAYASREE</b>	<b>INDIAN</b>	<b>1-9-856, POSTAL COLONY, 8TH CROSS, SUBEDARI, HANAMKONDA, WARANGAL URBAN, TELANGANA, INDIA</b>
<b>MR. K. RAMAKANTH</b>	<b>INDIAN</b>	<b>24-4-8/1, 100 FEET DARGA ROAD, DARGA, KAZIPET, WARANGAL URBAN, TELANGANA, INDIA</b>
<b>MRS. P. SHALINI</b>	<b>INDIAN</b>	<b>MATURI VENKATA SUBBA RAO ENGINEERING COLLEGE, NADERGUL, BADANGPET - 501510</b>

The following specification describes the invention and the manner in which it is to be performed.

## **FIELD OF INVENTION**

The present invention relates to the field of designing and implementing a switch box that can be easily extended up to desired distance without many difficulties. The invention aims at implementing a shock proof extension wire that is flexible enough, the sockets are so user friendly that can be even used by a child. The invention will also include a cutoff logic gate that will resist fire accidents.

## **BACKGROUND OF INVENTION**

**[0001]** Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

**[0002]** Though the buildings are constructed by placing plugins along with switches that are mounted on walls those plugins will not be enough nor can be extended as per the flexibility of the user. There arises a need to implement and design a flexible and extensible switch box that is compact enough and used at the point where the user is comfortable with.

**[0003]** The main disadvantage of the existing switch boxes is that they are prone to electric shocks and short circuits quite often. Thus, people feel that it is not safe to use extension boxes especially when they have children or babies at home. The proposed invention aims at addressing the disadvantages of the existing extensible switch proof and provide a smarter and compact shock proof extensible box.

**[0004]** The proposed invention is a flexible and extensible switch box that can be folded along the line of fold and make it compact when extra plugins that are not needed. The wires can be easily folded along with the box and thus occupies less shelf space. The box is made to be water proof. The main objective of the proposed invention is that the switch board can be used for appliances with varying power consumption since they have a threshold voltage cutoff unit avoiding disasters and fire accidents. The insulating material is made to cover the outer layer of the switch box.

**[0005]** A number of different types of switch boxes especially extensible switch boxes are known in the prior art. None of the prior art document discloses the proposed invention and the proposed invention is unique in the manner it is performed.

**[0006]** The above information is presented as background information only to assist with an understanding of the present disclosure. No determination has been made, no assertion is made, and as to whether any of the above might be applicable as prior art with regard to the present invention.

**[0007]** In the view of the foregoing disadvantages inherent in the known types extension plugin boxes or switch boxes now present in the prior art, the present invention provides an improved system. As such, the general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new and improved flexible and extensible switch box that is shock proof, Internet of things based and also designed to be compact by folding it along the line of fold as per the requirement of the user that has all the advantages of the prior art and none of the disadvantages.

## **SUMMARY OF INVENTION**

**[0008]** In the view of the foregoing disadvantages inherent in the known types of extension switch boxes now present in the prior art, the present invention provides an improved and extensible shock proof switch box along with triple

protection techniques. As such, the general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new and improved flexible and extensible switch box that is compact and can be folded along the line of fold to make the switch box comfortable and suit the available space which has all the advantages of the prior art and none of the disadvantages.

**[0009]** The main objective of the proposed invention is to provide a flexible extension switch box along with shock proof techniques so that the switch box can be folded to occupy less space when there is need for lesser number of plugins. The proposed invention is claimed to be compact and safe to be used even when the babies or children are around.

**[0010]** Yet another object of the proposed invention is that the said invention encloses a time sensor and an alert sensor. The time sensor facilitates the usage of the switch box for a specified time interval and the switch box will automatically get a cut off when there the specified time duration is complete. Thus, this feature acts as a child lock mechanism. The alert sensor will alert the user when there is huge variation in the voltage along with indicating the threshold unit to cutoff the passage of current.



**[0011]** Yet another important object of the proposed invention is that the proposed flexible switch box can be operated using the mobile phone or laptop of the user. The switch box encloses a Bluetooth to facilitate the communication of the switch box with the mobile phone or laptop of the user.

**[0012]** Another important aspect of the proposed witch box is that it is insulated using an insulating material and provides a shock proof and a safe environment thus avoiding fire accidents or disasters.

**[0013]** In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

**[0014]** These together with other objects of the invention, along with the

various features of novelty which characterize the invention, are pointed out with particularity in the disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

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

[0015] The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

Figure 1 illustrates the Front view of the flexible extensible switch box along with shock proof techniques, according to an embodiment herein.

Figure 2 illustrates the Rear view of the flexible extensible switch box along with shock proof techniques, according to an embodiment herein.

### **DETAILED DESCRIPTION OF INVENTION**

[0016] In the following detailed description, reference is made to the

accompanying drawings which form a part hereof, and in which is shown by way of illustration specific embodiments in which the invention may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the invention, and it is to be understood that the embodiments may be combined, or that other embodiments may be utilized and that structural and logical changes may be made without departing from the spirit and scope of the present invention. The following detailed description is, therefore, not to be taken in a limiting sense, and the scope of the present invention is defined by the appended claims and their equivalents.

[0017] While the present invention is described herein by way of example using several embodiments and illustrative drawings, those skilled in the art will recognize that the invention is neither intended to be limited to the embodiments of drawing or drawings described, nor intended to represent the scale of the various components. Further, some components that may form a part of the invention may not be illustrated in certain figures, for ease of illustration, and such omissions do not limit the embodiments outlined in any way. It should be understood that the drawings and detailed description thereto are not intended to limit the invention to the particular form disclosed, but on the contrary, the invention covers all modification/s, equivalents and

alternatives falling within the spirit and scope of the present invention as defined by the appended claims. The headings are used for organizational purposes only and are not meant to limit the scope of the description or the claims. As used throughout this description, the word "may" be used in a permissive sense (i.e. meaning having the potential to), rather than the mandatory sense (i.e. meaning must). Further, the words "a" or "an" mean "at least one" and the word "plurality" means one or more, unless otherwise mentioned. Furthermore, the terminology and phraseology used herein is solely used for descriptive purposes and should not be construed as limiting in scope. Language such as "including," "comprising," "having," "containing," or "involving," and variations thereof, is intended to be broad and encompass the subject matter listed thereafter, equivalents, and any additional subject matter not recited, and is not intended to exclude any other additives, components, integers or steps. Likewise, the term "comprising" is considered synonymous with the terms "including" or "containing" for applicable legal purposes. Any discussion of documents, acts, materials, devices, articles and the like are included in the specification solely for the purpose of providing a context for the present invention.

**[0018]** In this disclosure, whenever an element or a group of elements is

preceded with the transitional phrase "comprising", it is understood that we also contemplate the same element or group of elements with transitional phrases "consisting essentially of", "consisting", "selected from the group consisting of", "including", or "is" preceding the recitation of the element or group of elements and vice versa.

**[0019]** The proposed invention is a flexible and extensible switch box that can be used without a fear even when the babies are around and also designed to be safe even when there are voltage fluctuations. The present invention includes a logic gate to cutoff the passage of electricity when there is a high voltage current since the threshold of the logic gate is set and the circuit will cutoff the passage of electricity when there is variation in the voltage.

**[0020]** The proposed flexible and extensible switch box is covered using an insulating top cover that acts as shock proof when babies or children touch it with wet hands unknowingly and thus avoiding the disaster. The switch box can be folded along the line of control and thus making the proposed invention to be compact and space effective. The switch box includes a Bluetooth inside its communicating unit to facilitate the operation of the switch box from the distance using the mobile phone or laptop of the user. The invention aims at

avoiding the fire accidents or disasters that results because of electrocutions due to voltage variations. The proposed switch box is compact and be folded by adjusting it to the space they want it the switch board to be placed on.

**[0021]** Reference will now be made in detail to the exemplary embodiment of the present disclosure. Before describing the detailed embodiments that are in accordance with the present disclosure, it should be observed that the embodiment resides primarily in combinations arrangement of the system according to an embodiment herein and as exemplified in FIG. 1

**[0022]** Figure 1 illustrates the Front view of the flexible extensible switch box along with shock proof techniques. The flexible and compact switch board 100 includes a shock proof unit 101 that in turn encloses a logic gate 104 that will cut off the passages of electricity when there is variation in the voltage. The shock proof unit 101 is preset to a specific threshold using a cut off mechanism 102. The flexible and extensible switch box 100 can be folded along the line of fold. The flexible switch box 100 also communicates with the cloud server 103 and thus the entire activities of switch box such as its usage time are recorded on the cloud server 103. The communication unit 106 includes a Bluetooth to facilitate the operation of the flexible switch box 100 from a

distance such as the user can communicate with the switch box using his/her mobile phone or laptop. The plurality of sensors 105aa and 105b for the purpose of alerting the user in case of any abrupt variations in the voltage and the sensor to set the time of usage of switch box 100 respectively are the uses of the said sensors.

**[0023]** Figure 2 illustrates the Rear view of the flexible extensible switch box along with shock proof techniques, according to an embodiment herein. The flexible box 100 is insulated using a shock proof material to justify the title that it's a shock proof flexible switch box.

**[0024]** Any embodiment described herein is not necessarily to be construed as preferred or advantageous over another embodiment. All of the embodiment described in this detailed description are illustrative, and provided to enable persons skilled in the art to make or use the disclosure and not to limit the scope of the disclosure, which is defined by the claims.

**[0025]** It will be apparent to those skilled in the art that various modifications and variations can be made to the present embodiment without departing from the spirit and scope of the invention. Thus, it is intended that the present

embodiment and disclosure cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

**[0026]** In the following description, for the purpose of explanation, numerous specific details are set forth in order to provide a thorough understanding of the arrangement of the system according to an embodiment herein. It will be apparent, however, to one skilled in the art that the present embodiment can be practiced without these specific details. In other instances, structures are shown in block diagram form only in order to avoid obscuring the present invention.

Gowthami S

Patent Agent

INPA 3797

On Behalf of Applicant

Digitally signed



## WE CLAIM

1. A flexible extension switch box along with shock proof techniques comprises of  
  
a foldable clip,  
  
a threshold logic gate,  
  
an insulating top cover,  
  
a Bluetooth  
  
and plurality of sensors.
2. The said invention, as claimed in claim 1 includes a foldable clip wherein the foldable clip can be folded along the line of control to make the switch box look and feel compact. The switch can be easily carried out since it can be folded to make the extension switch box smaller.
3. A flexible extension switch box as claimed in claim 1 includes a logic gate wherein the logic gate is used to control the voltage when it crosses the normal range and thus avoiding the short circuits.
4. A flexible extension switch box includes a insulating top cover, wherein the insulating top cover acts as a shock proof material and thus making it safe even when the babies are children are around.

5. The said invention as claimed in claim 1, includes a Bluetooth wherein the user of the flexible switch box can communicate with the switch box using his/her mobile phone itself.
  
6. The flexible switch box as claimed in claim 1 includes plurality of sensors wherein the sensors are used for alerting the user in case of abrupt variation in the volage of electricity. The time sensor enclosed in the switch box will allow the user to use the extensible switch box for specified time interval and control its operation using their mobile phone itself.

Gowthami S

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Digitally signed

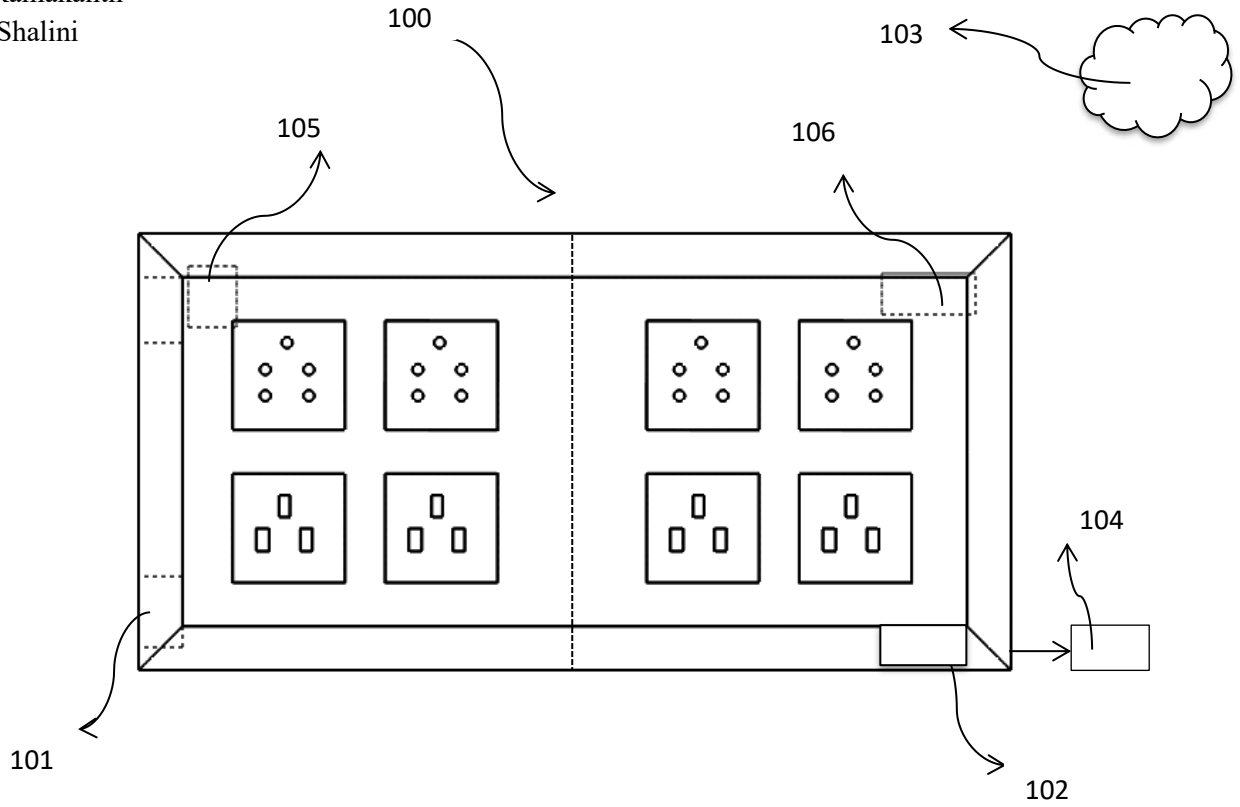
**DATE:8/12/2020**

## **ABSTRACT**

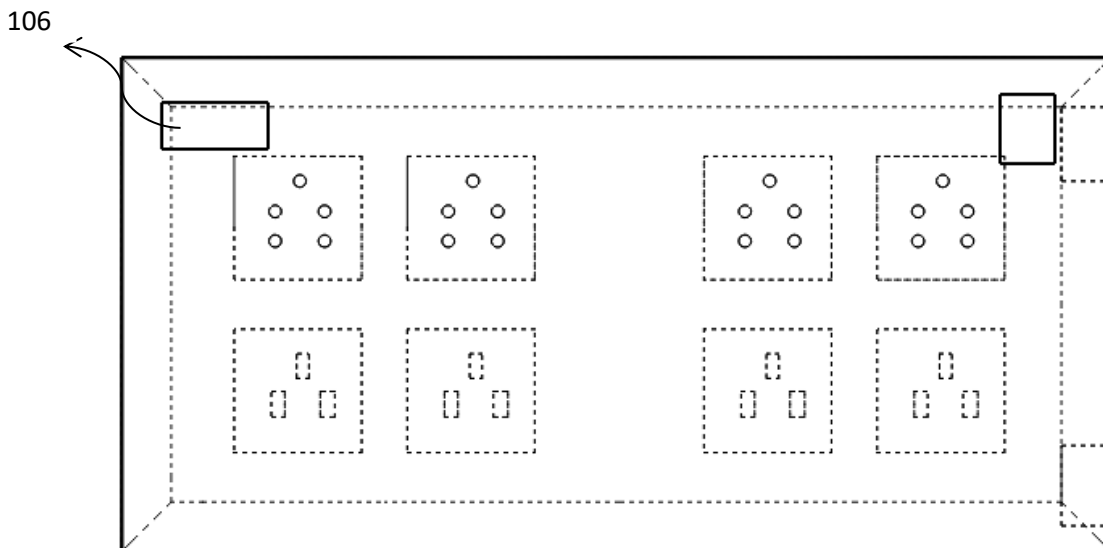
### **A FLEXIBLE EXTENSION SWITCH BOX ALONG WITH SHOCK PROOF TECHNIQUES**

A flexible extension switch box along with shock proof techniques aims at providing a flexible and compact switch box that can be folded along the line of fold. The line of fold can be used to fold the switch box and make it look compact and easy to carry around. The shock proof is achieved along with cutoff mechanism that is the switch box will have threshold voltage preset and the gate will cut off the passing of electricity when there is short circuit or abrupt voltage variation. The entire body of the switch box is made by using an insulating material and thus claiming to be shock proof as well.

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Mr. P.Rajesh  
Ms. K.Jayasree  
Mr. K.Ramakanth  
Mrs. P.Shalini



**Fig 1: FRONT VIEW**



**Fig 2: REAR VIEW**

DATE: 8/12/2020

Gowthami S

INPA 3797

On behalf of Applicant

Digitally Signed



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

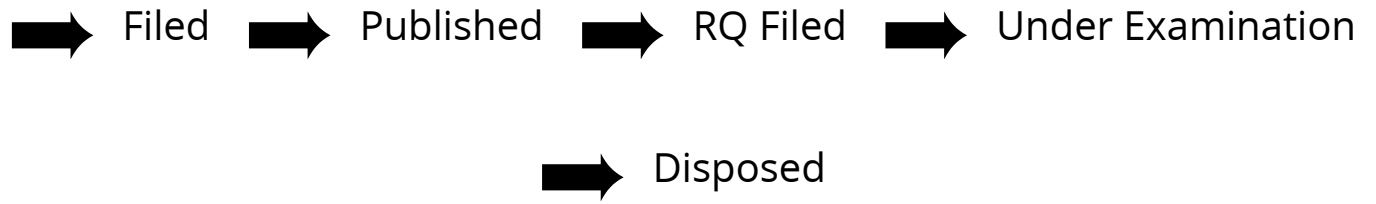
### Application Details

APPLICATION NUMBER	202041053285
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	08/12/2020
APPLICANT NAME	1 . Dr. RAKESH NAYAK (Professor) 2 . Mr. ASHISH LADDA (Assistant Professor) 3 . Dr. O SRI NAGESH (Assistant Professor) 4 . Dr. JITESH RAMDAS SHINDE (Assistant Professor) 5 . Dr. Biswa Mohan Acharya (Assistant Professor) 6 . Mr. S DEVANAM PRIYA (Associate Professor)
TITLE OF INVENTION	DSD-PREDICT GENDER, AGE, COUNTRY AND MEANING: DETECT SOUND AND THEIR GENDER, AGE, COUNTRY AND MEANING USING DEEP LERNING.
FIELD OF INVENTION	FOOD
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E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	25/12/2020

### Application Status

APPLICATION STATUS	<b>Awaiting Request for Examination</b>
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[View Documents](#)



पेटेंट कार्यालय  
शासकीय जर्नल

**OFFICIAL JOURNAL  
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शुक्रवार  
FRIDAY

दिनांक: 25/12/2020  
DATE: 25/12/2020

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पेटेंट कार्यालय का एक प्रकाशन  
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041053285 A

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(54) Title of the invention : DSD-PREDICT GENDER, AGE, COUNTRY AND MEANING: DETECT SOUND AND THEIR GENDER, AGE, COUNTRY AND MEANING USING DEEP LERNING.

(51) International classification	:A23L33/19	(71)Name of Applicant : <b>1)Dr. RAKESH NAYAK (Professor)</b> Address of Applicant :Department of Computer Science and Engineering, Vaagdevi Engineering College, Warangal, Telangana 506 005, India. E-mail: nayakrakesh8@gmailcom Telangana India
(31) Priority Document No	:NA	<b>2)Mr. ASHISH LADDA (Assistant Professor)</b>
(32) Priority Date	:NA	<b>3)Dr. O SRI NAGESH (Assistant Professor)</b>
(33) Name of priority country	:NA	<b>4)Dr. JITESH RAMDAS SHINDE (Assistant Professor)</b>
(86) International Application No	:NA	<b>5)Dr. Biswa Mohan Acharya (Assistant Professor)</b>
Filing Date	:NA	<b>6)Mr. S DEVANAM PRIYA (Associate Professor)</b>
(87) International Publication No	: NA	(72)Name of Inventor :
(61) Patent of Addition to Application Number	:NA	<b>1)Dr. RAKESH NAYAK (Professor)</b>
Filing Date	:NA	<b>2)Mr. ASHISH LADDA (Assistant Professor)</b>
(62) Divisional to Application Number	:NA	<b>3)Dr. O SRI NAGESH (Assistant Professor)</b>
Filing Date	:NA	<b>4)Dr. JITESH RAMDAS SHINDE (Assistant Professor)</b>
		<b>5)Dr. Biswa Mohan Acharya (Assistant Professor)</b>
		<b>6)Mr. S DEVANAM PRIYA (Associate Professor)</b>

(57) Abstract :

ABSTRACT Our Invention DSD- Predict Gender, Age, Country, meaning• is an apparatus for wireless communications includes a processing system and the processing system is configured to receive an input sound stream of a user, split the input sound stream into a plurality of frames. The invented technology also classifies each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, determine a pitch of each of the frames in a subset of the speech frames, and identify a gender, age and country of the user from the determined pitch. The invented technology also determines the pitch, the processing system is configured to filter the speech frames to compute an error signal, compute an autocorrelation of the error signal, find a maximum autocorrelation value using deep learning programming and set the pitch to an index of the maximum autocorrelation value. The invented technology also maintains a table comprising a male score for each pitch and a female score for each pitch the male scores being determined by computing a pitch of each of a number of male frames counting a number of the frames with each particular pitch. The invented technology also setting the male score for each pitch to a function of the number of the frames with the pitch divided by the number of male frames the female scores being determined by computing a pitch of each of a number of female frames counting a number of the frames with each particular pitch, and setting the female score for each pitch to a function of the number of the frames with the pitch divided by the number of female frames.

No. of Pages : 26 No. of Claims : 7



<b>FORM 1</b> THE PATENTS ACT 1970(39 of 1970) & The Patents Rules, 2003 APPLICATION FOR GRANT OF PATENT (See sections 7, 54 & 135 and rule 20(1))	<b><u>(FOR OFFICE USE ONLY)</u></b> Application No: Filing Date Amount of Fees Paid: CBR NO: Signature:
1. APPLICANTS REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)	

**2. TYPE OF APPLICATION [Please tick (✓) at the appropriate category]**

<b>Ordinary (✓)</b>		Convention ( )		PCT-NP ( )	
Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )

**3A. APPLICANT(S):**

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<b>Mr. S DEVANAM PRIYA</b> (Associate Professor)	INDIA	AN INDIAN NATIONAL	Department of Computer Science and Engineering, Kakinada Institute of Engineering and Technology for Women, Korangi, Tallarevumandal, East Godavari District, Andhra Pradesh, India. <b>E-mail:sdpriya1982@gmail.com</b>
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**3B. CATEGORY OF APPLICANT [Please tick ( ✓ ) at the appropriate category]**

<b>Natural Person ( ✓ )</b>	Other than Natural Person ( )		
	Small Entity ( )	Startup ( )	Others ( )

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

<b>Are all the inventor(s) same as the applicant(s) named above?</b>	<b>Yes ( ✓ )</b>	<b>No ( )</b>
--	------------------	---------------

If "No", furnish the details of the inventor(s) **N.A**

Name	Nationality	Country of Residence	Address
NA	NA	NA	NA

**5. TITLE OF THE INVENTION:**

**DSD-Predict Gender, Age, Country and Meaning:** DETECT SOUND AND THEIR GENDER, AGE, COUNTRY AND MEANING USING DEEP LERNING.

<b>6. AUTHORISED REGISTERED PATENT AGENT(S)</b>	NA
<b>ADDITIONAL PATENT AGENTS</b>	NA

<b>7. ADDRESS FOR SERVICE OF APPLICANT/ PATENT AGENT(S) IN INDIA</b> Dr. RAKESH NAYAK (Professor) Address: Department of Computer Science and Engineering, Vaagdevi Engineering College, Warangal, Telangana - 506 005, India. <b>E-mail: nayakrakesh8@gmailcom</b>	<b>E-mail:</b> <b>nayakrakesh8@gmailcom</b>
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**8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION COUNTRY, PARTICULARS OF CONVENTION APPLICATION: N.A**

Country	App. Number	Filing Date	Name of the Applicant	Title of the Invention	IPC (as classified in the convention country)

NA	NA	NA	NA	NA	NA
----	----	----	----	----	----

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

International application number	International filing date as allotted by the receiving office.
NA	NA

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

Original (first) application number	Date of filing of Original (first) application
N.A.	N.A.

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

Main application / patent Number	Date of filing of main application
N.A.	N.A.

**12. DECLARATIONS:**

**(i) Declaration by the Inventor:**

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

We, the above named inventor is the true & first inventor for this invention and declare that the applicant herein is my assignee or legal representative:

**NA**

**(ii) Declaration by the applicant/s in the convention country:**

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

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

**(iii) Declaration by the applicants:**

We, the applicants hereby declare that: -

1. We are in possession of the above-mentioned invention.
2. The **Complete Specification** relating to the invention is filed with this application.

3. The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by us before the grant of patent to us: **N.A.**
4. There is no lawful ground of objection to the grant of the patent to me/ us.
5. We are the assignees or legal representatives of true and first inventors:
6. The application or each of the applications, particulars of which are given in Para – 8 was the first application in convention country/countries in respect of our invention: **N.A.**
7. We claim the priority from the above mentioned application filed in convention country/countries and state that no application for protection in respect of the invention had been made in a convention country before that date by us or by any person from which we derive the title: **YES**
8. Our application in India is based on international application under Patent Cooperation Treaty (PCT) as mentioned in Para-9: **N.A.**
9. The application is divided out of our application particulars of which is given in Para-10 and prays that this application may be treated as deemed to have been filed on N.A. Under sec.16 of the Act: **N.A.**
10. The said invention is an improvement in or modification of the invention particulars of which are given in Para-11: **N.A.**

**FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION**

**(a) Form 2**

Item	Details	Fee	Remarks
Complete specification) #	No. of pages:		
Claim(s)	No. of claims: No. of pages:		
Abstract	No. of pages:		
Drawing(s)	No. of drawings: No. of pages:		

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

1. Complete specification (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies) **N.A**
2. Sequence listing in electronic form **N.A**
3. Drawings (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies) **N.A**

4. Form 1, 2, 26-1750Rs.
5. Statement and Undertaking on Form-3
6. Declaration of Inventor ship on Form-5
7. Request for Publication Form9 -2750.Rs
8. Form18 Examination Request, 4400.Rs
9. Other Form according to need: 880,1600,2500,4000, ...
10. Power of Authority
11. Other from 4 to 31 According to needed can fill.

Total fee Rs ..... /- **in ~~Cash~~/ Banker's Cheque /Bank Draft bearing No.....**

**Date.....on..... Bank.**

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

Date:8/12/2020

Dr. RAKESH NAYAK ((Professor)

Mr ASHISH LADDA (Assistant Professor)

Dr. O SRI NAGESH (Assistant Professor)

Dr. JITESH RAMDAS SHINDE (Assistant Professor)

Dr. BISWA MOHAN ACHARYA (Assistant Professor)

Mr. S DEVANAM PRIYA (Associate Professor)

To,  
The Controller of Patent,  
The Patent Office, at .....

**FORM 2**  
**THE PATENT ACT 1970 &**  
The Patents Rules, 2003  
**COMPLETE SPECIFICATION**  
(See section 10 and rule 13)

**TITLE OF THE INVENTION:**

**DSD-Predict Gender, Age, Country and Meaning:** DETECT SOUND AND THEIR GENDER, AGE, COUNTRY AND MEANING USING DEEP LEARNING.

Name	Nationality	Address
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**REAMBLE TO THE DESCRIPTION**

PROVISIONAL	COMPLETE
The following specification describes the	The following specification Invention. Particularly describes the invention and the manner in which it is to be performed.

## **FIELD OF THE INVENTION**

Our Invention “**DSD-Predict Gender, Age, Country and Meaning**” is related to detect sound and their gender, age, country and meaning using deep learning.

## **BACKGROUND OF THE INVENTION**

A target market is the market segment to which a particular product is marketed. The market segment is often defined by age, socio-economic grouping, or by gender. In order to provide targeted marketing on mobile phones to a gender defined market segment without specifically asking for information, a gender detection algorithm may be used to determine gender from voice input to the mobile phones. Existing gender detection algorithms are not sufficiently accurate. As such, there is a need for an improved gender detection algorithm for use in mobile phones.

HUD (Head Up Display), is generally use flight supplementary instrument on aircraft. What come back is meant that pilot need not bow just it can be seen that his important information of needing Because the convenience of HUD and can improve flight safety, airliner also follows up installation one after another。 HUD is the principle utilizing optical reflection, important flight relevant information is incident upon above a sheet glass This what passenger cabin front end, sheet glass position, highly substantially becomes level with the eyes of pilot, and the word of projection and image adjustment, on the distance of focal length infinity, time pilot sees toward front through HUD, will not hamper the running of eyes, and maintenance clearly indicates.

The basic framework of HUD comprises two parts: data processing unit and image display Data processing unit is the Hou of the data conformity process by system each on aircraft, and the patten transformation according to selecting becomes symbol set in advance, figure or the kenel with word or numeral to export Signal is processed and is divided into two devices with image output by some product, but is generally all similar working method Image display is just mounted in passenger cabin front, between pilot and canopy spatially Image display receives the information from data processing device, is incident upon above glass Display device and with control panel, it is possible to reconcile or change the image of output.

The HUD of a new generation improvement in image display includes adopting full figure photography (Holographic) display mode, expand the scope of show image, especially the field-of-view angle in increase level, reduce the thickness of support to the restriction in the what visual field and impact, strengthen different luminosity and the display adjustment under external environment, the definition of strengthening image, with coordinating that other optical images export, for example can the aircraft forward image that infrared image camera produces be projected directly on HUD, show with other data fusion, coordinate the use of night vision goggles and adopt chromatic image display data.

Improvement on data processing unit includes speed and the efficiency that raising processes, and image is incident upon on the fixing device in passenger cabin front

by HUD, and when pilot's rotation head time, these images will his field range away from keyboards. The HUD of a new generation is more suitable for being used on automobile widely.

In the intrinsic notion of people, driving that what should focus on is safety naturally, but universal along with smart mobile phone, cellphone subscribers are independent of facility that mobile phone brings and quick all the time Phone, note, WeChat real-time communication, multimedia use, digital map navigation instrument etc. these, but in " race of bowing " increasing today, mobile phone brings the safety that our facility but strong influence is driven.

The vehicle accident of various ways is all owing to car owner causes due to use mobile phone in driving procedure Automobile vendors come to realise the importance of middle control screen, add vehicle as maximum terminal unit, more allow this block " screen " on car become place contested by all strategists But the existence of vehicle-mounted middle control screen really to allow driving variable obtain safer, but in real experiences, still have the every drawback on vehicle-mounted middle control screen and inconvenient, still can allow driver distraction.

Current interactive system for vehicle-mounted voice is all use preset voice and intonation and driver to interact, and rules of interaction is inflexible, it is impossible to carry out personalized customization according to the sex/emotion of driver, it is impossible to meet the demand of user individual.

Social networking service providers facilitate creating, distributing, and exchanging social media between users in virtual communities called social networks. Service providers include, for example, Facebook and Twitter. These service providers offer interactive online portals that are accessible through client devices such as personal computers, tablets and smartphones. Depending on the social network, a user can register with a service provider, create a profile, add other users to their social networks, exchange social media, and receive notifications from the service provider. A user may join different social networks to share social media of common interest to a single user or an entire group of users in a particular social network.

There are many types of service providers. Some are focused on facilitating building personal networks based on friendships or social interests, such as FACEBOOK and TWITTER. Others are more focused on building professional relationships by connecting users with similar career interests, and allow users to market themselves in social networks, such as LinkedIn. Other social networks, such as YOUTUBE and FLICKR, are more directed to facilitating the sharing of multimedia, such as pictures, audio and video. However, the differences between social networks are becoming fewer as service providers continue to add additional functionality.

User profiles are provided by some social media service providers, and include fields for users to input limited demographic information, such as a name and



location. However, many service providers fail to request or store any demographic information about their users.

Thus, most profiles linked to social media include limited, or fail to include any, fields for users to input demographic information. Moreover, user-provided demographics available by social networking service providers are limited and unreliable because users may not disclose demographic information or may disclose incorrect demographic information. Consequently, there is no reliable way to determine or predict user demographics about authors of social media.

### **PRIOR ART SEARCH**

S4653098A \*1982-02-151987-03-24Hitachi, Ltd .Method and apparatus for extracting speech pitch.

US5103481A \*1989-04-101992-04-07Fujitsu Limited Voice detection apparatus.

US5127053A1990-12-241992-06-30General Electric Company Low-complexity method for improving the performance of autocorrelation-based pitch detectors.

US5233660A \*1991-09-101993-08-03At&T Bell Laboratories Method and apparatus for low-delay celp speech coding and decoding.

US5749065A \*1994-08-301998-05-05Sony Corporation Speech encoding method, speech decoding method and speech encoding/decoding method.

US5950155A \*1994-12-211999-09-07Sony Corporation Apparatus and method for speech encoding based on short-term prediction valves.

US6366108B2 \*1998-12-012002-04-02Agilent Technologies, Inc. System and method for detecting defects within an electrical circuit by analyzing quiescent current.

### **OBJECTIVES OF THE INVENTION**

1. The objective of the invention is to the apparatus for wireless communications includes a processing system and the processing system is configured to receive an input sound stream of a user split the input sound stream into a plurality of frames?
2. The other objective of the invention is to the frames as one selected from the group consisting of a non-speech frame and a speech frame, determine a pitch of each of the frames in a subset of the speech frames and identify a gender age and country of the user from the determined pitch.
3. The other objective of the invention is to the pitch the processing system is configured to filter the speech frames to compute an error signal, compute an autocorrelation of the error signal, find a maximum autocorrelation value using deep learning programming and set the pitch to an index of the maximum autocorrelation value.
4. The other objective of the invention is to the maintains a table comprising a male score for each pitch and a female score for each pitch the male scores being determined by computing a pitch of each of a number of male frames counting a number of the frames with each particular pitch.

5. The other objective of the invention is to the setting the male score for each pitch to a function of the number of the frames with the pitch divided by the number of male frames the female scores being determined by computing a pitch of each of a number of female frames counting a number of the frames with each particular pitch.
6. The other objective of the invention is to the setting the female score for each pitch to a function of the number of the frames with the pitch divided by the number of female frames.

### **SUMMARY OF THE INVENTION**

The apparatus for wireless communications includes a processing system. The processing system is configured to receive an input sound stream of a user, split the input sound stream into a plurality of frames, classify each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, determine a pitch of each of the frames in a subset of the speech frames, and identify a gender of the user from the determined pitch. To determine the pitch, the processing system is configured to filter the speech frames to compute an error signal, compute an autocorrelation of the error signal, find a maximum autocorrelation value, and set the pitch to an index of the maximum autocorrelation value.

A method for wireless communications includes receiving an input sound stream of a user, splitting the input sound stream into a plurality of frames, classifying each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, determining a pitch of each of the frames in a subset of the speech frames, and identifying a gender of the user from the determined pitch. Determining the pitch includes filtering the speech frames to compute an error signal, computing an autocorrelation of the error signal, finding a maximum autocorrelation value, and setting the pitch to an index of the maximum autocorrelation value.

An apparatus for wireless communications includes means for receiving an input sound stream of a user, means for splitting the input sound stream into a plurality of frames, means for classifying each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, means for determining a pitch of each of the frames in a subset of the speech frames, and means for identifying a gender of the user from the determined pitch.

The means for determining the pitch includes means for filtering the speech frames to compute an error signal, means for computing an autocorrelation of the error signal, means for finding a maximum autocorrelation value, and means for setting the pitch to an index of the maximum autocorrelation value.

The disclosure, a computer program product includes a computer-readable medium. The computer-readable medium includes code for receiving an input sound stream of a user, code for splitting the input sound stream into a plurality of

frames, code for classifying each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, code for determining a pitch of each of the frames in a subset of the speech frames, and code for identifying a gender of the user from the determined pitch. The code for determining the pitch includes code for filtering the speech frames to compute an error signal, code for computing an autocorrelation of the error signal, code for finding a maximum autocorrelation value, and code for setting the pitch to an index of the maximum autocorrelation value.

The technical problem to be solved in the present invention is, according to emotion and sex, it is provided that personalized intelligent sound interactive function, promotes driving experience. Solve above-mentioned technical problem, the invention provides view-based access control model and the intelligent sex of voice, Emotion identification detection system, including.

Based on emotion and the gender identification module of image, in order to carry out the Emotion identification of occupant according to facial image, and carry out the sex identification of occupant according to face. Voice-based emotion and gender identification module, carry out the Emotion identification of occupant, and carry out the sex identification of occupant according to voice in order to the voice according to people.

Fusion Module, in order to carry out mating and being sent to individualized intelligent voice interactive system, and in order to be undertaken merging and be sent to individualized intelligent voice interactive system by the result of described Emotion identification by the result of described sex identification. Individualized intelligent voice interactive system, carries out interactive voice according to the matching result received and fusion results.

View-based access control model and the intelligent sex of voice, Emotion identification detection system, also include acquisition module, including image collecting device and voice collection device, described image collecting device in order to, real-time image signal in collecting vehicle, and by described picture signal according to video stream to base on the emotion of image and gender identification module, described voice collection device in order to, real-time audio signal in collecting vehicle, and described acoustical signal is sent to voice-based emotion and gender identification module.

Described individualized intelligent voice interactive system also includes, message elements, communication unit, music unit, navigation elements, CAN interface, Described message elements, in order to push vehicle maintenance, car rent message, Described communication unit, in order to carry out bluetooth with external equipment or WI-FI is connected, Described music unit, in order to provide local or online music, Described navigation elements, in order to provide map access service, Described CAN interface, in order to provide the CAN communication being connected with locomotive.

The described emotion based on image and gender identification module are additionally operable to, carry out the off-line training of face and the on-line operation of face, described off-line training uses face database training of human face detector, simultaneously calibration marks point on face, labelling point matching device is trained according to described face labelling point, and, emotion and gender sorter is trained by the relation of face labelling point and emotion and sex. The on-line operation of described face, by detecting face in the picture, the then labelling point on matching face, and sex and the emotion of current driver's is judged according to face labelling point, finally provide corresponding classification confidence.

Described voice-based emotion and gender identification module are additionally operable to, carry out the off-line training of voice and the on-line operation of voice, the off-line training of described voice, use speech database training of human sound detector, training speech feature vector extraction model for extracting the sound of characteristic vector from voice simultaneously, adopt training set training sex and the emotion grader of speech feature vector and sex and the emotion demarcated, the on-line operation of described voice, by detection voice data in the sound stream of input, and from voice extracting data speech feature vector, grader is finally used to differentiate sex and the emotion of current driver's from speech feature vector, and provide the confidence level of speech recognition.

Described individualized intelligent voice interactive system, also in order to according to described based on the sex of image, Emotion identification result and confidence level thereof with voice-based sex, Emotion identification result and confidence level thereof, the sex of comprehensive decision current driver's and emotion, and select the pattern arranged to carry out interactive voice according to the emotion of current driver's.

Described individualized intelligent voice interactive system also includes individualized intelligent interactive voice data base, for store voice interactive mode information. Present invention also offers a kind of view-based access control model and the intelligent sex of voice, Emotion identification detection method, including. Carry out the Emotion identification of occupant according to facial image, and carry out the sex identification of occupant according to face.

Voice according to people carries out the Emotion identification of occupant, and carries out the sex identification of occupant according to voice. In order to the result of described sex identification to carry out mating and being sent to individualized intelligent voice interactive system, and in order to be undertaken merging and be sent to individualized intelligent voice interactive system by the result of described Emotion Identification Interactive voice is carried out according to the matching result received and fusion results.

Described occupant at least includes a driver. It is other that described matching result includes man, women, and fusion results includes being sick of, joyful, surprised, angry, painful, tired, normal.

**Beneficial effects of the present invention:**

1) owing to base on the emotion of image and gender identification module, in order to carry out the Emotion identification of occupant according to facial image, and carrying out the sex identification of occupant according to face ; Voice-based emotion and gender identification module, carry out the Emotion identification of occupant, and carry out the sex identification of occupant according to voice in order to the voice according to people, it is possible to detection driver's sex/emotion automatically.

2) due to Fusion Module, in order to be undertaken mating and be sent to individualized intelligent voice interactive system by the result of described sex identification, and in order to be undertaken merging and be sent to individualized intelligent voice interactive system by the result of described Emotion identification, adopt Fusion Module can the recognition result of fusion image and voice, promote the precision of sex/Emotion identification.

3) due to individualized intelligent voice interactive system, carry out interactive voice according to the matching result received and fusion results, it is provided that individualized intelligent interactive voice, too increase the enjoyment of mobile unit use and the accurate of information service.

Described herein are systems and methods for predicting demographics about authors of social media. The predictions are relatively transparent to users, agnostic to language, and can adapt to changing content in social media.

Employing such systems and methods allows companies to tailor their advertisements to a particular demographic or, conversely, learn about how a particular demographic feels about a subject or product. For example, a sentiment analysis can be conducted on a dataset of social media to understand how people in a particular demographic group feel about a product, service, policy, person, or the like. In a broader sense, the described systems and methods increase the value of social media by providing service providers and third parties with more information about users without asking probing questions, and allow users to experience social networks that are customized based on demographic information.

A method for creating a dataset that relates features in social media messages to demographic information includes extracting features from social media messages that are authored by users of a social media service. A processor is used for retrieving demographics about the users that authored the social media messages and for correlating the features from the social media messages with the demographics. The correlation is stored in memory.

The social media messages authored by users are retrieved from a first social media service, and demographics for the users that authored the social media messages are retrieved from a second social media service. In some embodiments, the first social media service is TWITTER and the second social media service is FACEBOOK. In some embodiments, social media messages are associated with profiles for users that authored social media messages. In some embodiments, the profiles include links to the second social media service. In some embodiments, demographics include gender and at least one of age, location, and marital status. In some embodiments, the features include an n-gram of words and an n-gram of characters.

A method for creating a dataset for predicting demographics of users that author social media messages includes designating tracks of fields in a dataset of social media messages stored in memory. Features are extracted from social media messages based on the designated fields. Demographics that include alternative demographic values and that are associated with the features are retrieved. A processor is used for generating adjustable weights associated with the alternative demographic values from two or more of the features. Demographics are predicted of users that author social media messages based on the adjustable weights associated with the alternative demographic values from the two or more of the features.

The tracks include an n-gram of words, an n-gram of characters, or both. In some embodiments, the demographics include gender, age, or location. A method for predicting a demographic about an author of a social media message includes extracting features from a social media message stored in memory. A processor is used for determining weights associated with the extracted features and for predicting a demographic value about an author of the social media message based on a sum of the weights associated with the extracted features.

The weights associated with an extracted feature correspond to different alternative values for a particular demographic about the author of the social media message. In some embodiments, a confidence level is output for a predicted demographic that corresponds to a difference between a sum of weights associated with the predicted value and a sum of weights associated with another demographic value. The sum of the other demographic value is lower than the sum of the predicted demographic value. In some embodiments, the confidence level corresponds to an accuracy that the predicted demographic value corresponds to an actual demographic value of an author of the social media message.

The predicted demographic value is output when the confidence level exceeds a threshold. In some embodiments, at least one of the weights is updated when the confidence level is below the threshold even though the prediction is correct. In some embodiments, the predicted demographic includes a marital status. In some embodiments, a system for creating a dataset that relates features in social media messages to demographic information includes a memory that stores features from social media messages that are authored by users of a social media service. A

processor retrieves demographics for the users that authored the social media messages and correlates the features with the demographics.

A system for predicting a demographic about an author of a social media message includes a memory that stores a social media message. A processor extracts features from the social media message, determines weights associated with extracted features, and predicts a demographic value about an author of the social media message based on a sum of the weights associated with the extracted features. In some embodiments, the processor outputs a confidence level for the predicted demographic that corresponds to a difference between the sum of the weights associated with the predicted value and a sum of the weights associated with another demographic value.

The systems and methods described herein predict demographics about authors of social media based on the content of their social media, without asking users probing questions about demographic information. The systems and methods create and utilize a dataset that associates content of social media with known demographics for predicting unknown demographics about authors of other social media. A prediction model is derived from the dataset, and the dataset may comprise a subset of social media messages, profile information and metadata, or combinations thereof.

The prediction model is applied to formatted social media from authors of unknown demographics. Features are extracted from the social media and used by the prediction model to determine which features indicate that the author belongs to a particular demographic. The social media and known demographics used to build the dataset may be retrieved from the same or different service providers. The accuracy of predicting any demographic varies based on the volume and types of features analyzed. The disclosed prediction systems can significantly outperform existing systems and methods by using a variety of types and large quantity of features to predict demographics, rather than just relying on limited user-supplied demographic information in user profiles.

The systems and methods described herein generate a prediction model comprising social media associated with known user demographics, and then apply the prediction model to social media of users with unknown demographics to predict their demographics. Methods for creating the prediction model include correlating features from a set of social media with known user demographics. The social media may include messages authored by users of service providers. Features from the social media are extracted and stored in the prediction model. Known demographics about authors of the social media are extracted and also stored in the prediction model.

The extracted features and known demographics may be correlated by using weights. The weights are adjusted depending on how features contribute towards making a prediction about a demographic of an author. The prediction model is then used to predict unknown demographics about authors of social media.

The systems and methods described herein may be implemented as a prediction system that compiles social media, extracts feature, compiles user demographic information, learns to correlate the extracted features and demographic information, and outputs predictions about demographics of authors of unknown demographics.

The described systems and methods can be utilized in substantially any social media systems or electronic messaging systems to predict demographics about authors of messages. In some embodiments, the systems and methods work across social media services by predicting demographics of users with a dataset that is built from data from different social media networks in different services. In some embodiments, the systems and methods work using a dataset that is built from data from the same social media network that is being analyzed. The described systems and methods can be readily embodied as a stand-alone software program or integrated in another program as an Application Programming Interface (API).

The program may, for example, reside at a server or client computer, or combinations thereof. Different software program modules may reside at a client, server or across multiple computing resources in a network. Nevertheless, to simplify the following discussion and facilitate reader understanding, the description will discuss the prediction system in the context of use within a software program that executes on a server to predict demographic information about authors of social media messages.

#### **Computing Environment:**

The described systems and methods may be embodied as part of a computing system that includes a software program stored on a non-transitory computer readable medium. The software program can be executed by a CPU on a server configured to execute the program. This server may be the same or different from servers operated by a social networking service provider, such as FACEBOOK or TWITTER. Accordingly, the service provider may analyze its social media to predict demographics about its users.

The program resides in a remote server from the service provider. In these embodiments, a third-party may pay for services on demand to predict demographics about authors of social media. In some embodiments, the system may be connected to a plurality of service providers to facilitate predicting demographics about users on a number of different social networking services.

Social media may be transmitted between users registered to a social networking service over a communications network, such as the Internet. Other communications technology for transmitting social media may include, but are not limited to, any combination of wired or wireless digital or analog communications channels, such as instant messaging (IM), short message service (SMS), multimedia messaging service (MMS) or a phone system (e.g., cellular, landline, or IP-based).



These communications technologies can include Wi-Fi, BLUETOOTH and other wireless radio technologies.

Social media may be transmitted to a server operated by or for a social networking service provider. The social media may then be transmitted to recipient users in a social network associated with a user sending the social media. The social media may be sent between client devices without passing through an intermediate server. In some embodiments, a client device can access output from the described system by using a portal that is accessible over the Internet via a web browser.

### **BRIEF DESCRIPTION OF THE DIAGRAM**

FIG. 1 is a conceptual block diagram illustrating a hardware configuration for an exemplary apparatus.

FIG. 2: is a flow chart for training to produce scores related to pitch for known genders.

FIG. 3: is a flow chart for determining gender of a speaker.

FIG. 4: is a flow chart for classifying a frame as solid voiced, voiced, and unvoiced.

FIG. 5: is a modular diagram of an exemplary apparatus.

FIG. 6: is a modular diagram for computing a pitch of a signal in an exemplary apparatus.

### **DESCRIPTION OF THE INVENTION**

Various aspects of the novel systems, apparatus and methods are described more fully hereinafter with reference to the accompanying drawings. The teachings disclosure may, however, be embodied in many different forms and should not be construed as limited to any specific structure or function presented throughout this disclosure. Rather, these aspects are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the disclosure to those skilled in the art.

Based on the teachings herein one skilled in the art should appreciate that that the scope of disclosure is intended to cover any aspect of the novel systems, apparatus and methods disclosed herein, whether implemented independently of or combined with any other aspect of the invention. For example, an apparatus may be implemented or a method may be practiced using any number of the aspects set forth herein. In addition, the scope of the invention is intended to cover such an apparatus or method which is practiced using other structure, functionality, or structure and functionality in addition to or other than the various aspects of the invention set forth herein. It should be understood that any aspect disclosed herein may be embodied by one or more elements of a claim.

Examples of apparatuses suitable for incorporating various aspects of the invention include, but are not limited to, a mobile phone capable of operating in a wireless network. A mobile phone may be referred to as a user terminal, a mobile station, a mobile device, a subscriber station, a wireless device, a terminal, an access terminal, a node, or some other suitable terminology. The various concepts described

throughout this disclosure are intended to apply to all suitable apparatuses regardless of their specific nomenclature.

Various aspects of an apparatus will now be presented with reference to FIG. 1. FIG. 1 is a conceptual block diagram illustrating a hardware configuration for an apparatus. The apparatus 100 may include a wireless interface 102, a processing system 104, and a vocoder 106. The wireless interface 102 may include a transceiver having a transmitter and receiver function to support two-way communications over the wireless medium. Alternatively, the wireless interface 102 may be configured as a transmitter or receiver to support one-way communications. The wireless interface 102 is shown as a separate entity. However, as those skilled in the art will readily appreciate, the wireless interface 102, or any portion thereof, may be integrated into the processing system 104, or distributed across multiple entities within the apparatus 100.

The processing system 104 includes a vocoder 106. The vocoder 106 provides a signed 16-bit integer data stream that is monophonic and sampled at a data rate of 8 kHz. The vocoder 106 assumes that at least 14 of the 16 bits are utilized. The processing system 104 may include one or more processors. The one or more processors may be implemented with any combination of general-purpose microprocessors, microcontrollers, a Digital Signal Processors (DSP), Field Programmable Gate Arrays (FPGA), Programmable Logic Devices (PLD), controllers, state machines, gated logic, discrete hardware components, or any other suitable entities that can perform calculations or other manipulations of information.

The processing system 104 may also include machine-readable media for storing software. Software shall be construed broadly to mean any type of instructions, whether referred to as software, firmware, middleware, microcode, hardware description language, or otherwise. Instructions may include code (e.g., in source code format, binary code format, executable code format, or any other suitable format of code). The instructions, when executed by the one or more processors, cause the processing system 102 to perform the various functions described below, as well as other protocol processing functions.

Machine-readable media may include storage integrated into one or more of the processors. Machine-readable media may also include storage external to the one or more processor, such as a Random Access Memory (RAM), a flash memory, a Read Only Memory (ROM), a Programmable Read-Only Memory (PROM), an Erasable PROM (EPROM), registers, a hard disk, a removable disk, a CD-ROM, a DVD, or any other suitable storage device. In addition, machine-readable media may include a transmission line or a carrier wave that encodes a data signal. Those skilled in the art will recognize how best to implement the described functionality for the processing system.

FIG. 2: is a flow chart 200 for training to produce scores related to pitch for known genders. As shown in FIG. 2, the voice data is sampled (step 202) by the

vocoder 106 at a data rate of 8 kHz to provide a signed 16-bit integer data stream that is monophonic. The sampled voice data is passed through a high-pass filter to remove the DC component. After the sampled voice data is passed through a high-pass filter, the filtered data is assembled into frames (step 204). In one configuration, each frame is 20 ms and includes 160 voice samples. The frames may be overlapping or non-overlapping.

Next, each frame is classified as a speech frame or a non-speech frame (i.e., a frame without speech), and if the frame is a speech frame, the frame is classified as solid voice, voiced, or unvoiced. Voiced speech is defined as the pronunciation of sounds when the larynx vibrates and unvoiced speech is defined as the pronunciation of sounds when the larynx does not vibrate. Solid voiced speech is speech that is clearly voiced. FIG. 4, to be discussed infra, provides one example of how to classify a frame as a non-speech frame, a solid voiced speech frame, a voiced speech frame, or an unvoiced speech frame. That is, the flow chart 400 of FIG. 4 is an expansion of the step 206 of FIG. 2.

In step 208, the frame is determined as being appropriate for analysis. In one configuration, all speech frames are analyzed. In another configuration, only voiced and solid voiced speech frames are analyzed. In yet another configuration, only solid voiced speech frames are analyzed. In step 210, the pitch is computed for the frames provided from step 208. The pitch may be represented as an integer between 10 and 59, inclusive. A count is maintained for each pitch detected (step 212). In addition, a count is maintained of the total number of frames (step 212). This process proceeds (step 214) until there is no more sample voice data. A score for each pitch (steps 216-222) is a function of the count for each pitch divided by the number of frames (i.e.,  $\text{score}[p]=f(\text{count}[p]/\text{frames})$ ) and may be calculated as follows:

$$\text{score}[p]=10*\log_{10}(\text{count}[p]/\text{frames}).$$

The training to produce scores related to pitch for known genders stops (step 224) after scores are determined for the provided known male and known female sample voice data. Separate scores are determined for known male and known female sample voice data, as the steps in the flow chart 200 are performed independently for known male and known female sample voice data.

FIG. 3 is a flow chart 300 for determining gender of a speaker. The voice data is sampled (step 302); split into frames (step 304); classified as a non-speech frame, an unvoiced speech frame, a voiced speech frame, or a solid voiced speech frame (step 306); and the pitch is determined (step 310) for the frames deemed appropriate (step 308). The steps 302-308 proceed similarly to steps 202-210 of FIG. 2 as described supra.

As such, in step 308, in one configuration, all speech frames are deemed appropriate for analysis. In another configuration, only voiced speech frames and solid voiced speech frames are deemed appropriate for analysis. In yet another

configuration, only solid voiced speech frames are deemed appropriate for analysis. After the pitch is determined in step 310, the male and female scores for the determined pitch are added to a running sum of the male scores and a running sum of the female scores, respectively (step 312). If the male count is greater than the female count (step 314), the voice data is classified as male (step 316), otherwise the voice data is classified as female (step 318).

FIG. 4: is a flow chart 400 for classifying a frame as a non-speech frame, an unvoiced speech frame, a voiced speech frame, and a solid voiced speech frame. The flow chart 400 is an expansion of step 206 of FIG. 2 and of step 306 of FIG. 3. To classify the frame, a Linear Predictive Coding (LPC) module receives the frame data and computes the LPC predictor for the frame (step 402). The first step in computing the LPC predictor is to compute the autocorrelation function of the frame for lags (i.e., shifts) 0 through 16. If a preprocessed frame number  $n$  is identified as having samples  $s_k$ ,  $0 \leq k < 160$ , then

Given the autocorrelation function, LPC coefficients are computed using a Levinson-Durbin recursion. Assuming  $E^1$  for  $0 \leq i < 11$  is the error energy in the linear predictor of order  $i$ , and  $a_j^i$  for  $0 \leq j < i < 11$  is the coefficient  $j$  of the order  $i$  predictor, these values are calculated recursively, starting with  $a_0^0 = 0$  and  $E^0 = R_0$ . With  $1 \leq i < 11$ , a weighting factor is calculated for the order  $i$  predictor:

The error energy and the coefficients for order  $i$  are then updated as follows:

$$\begin{aligned} \alpha_i^i \{n\} &= k_i \{n\} \\ \alpha_j^i \{n\} &= \alpha_j^{i-1} \{n\} - k_i \{n\} \alpha_{i-j}^{i-1} \{n\} \\ E^i \{n\} &= (1 - k_i \{n\}^2) E^{i-1} \{n\} \end{aligned}$$

The LPC order  $i$  predictor is where  $\alpha_j \{n\} = \alpha_j^{10} \{n\}$ . The prediction error filter transfer function is given by

After the LPC predictor is calculated in step 402, the prediction gains  $P_g \{n\}$  is computed (step 404). The prediction gains  $P_g \{n\}$  is calculated using the frame autocorrelation function and the LPC predictor:

After the prediction gain is determined, the band energy is computed (step 408). The speech signal is divided into a low frequency band and a high frequency band by a pair of filters. In the following description, the low frequency band is represented by index 0 and the high frequency band is represented by index 1. Metrics that are computed include the band identification as a superscript. In step 408, the energy contained in each band is computed. The band energy may be computed by using a filtered version of the autocorrelation function. Table 1 shows the coefficients for the low pass and the high pass filters. In step 412, the zero crossings ( $ZC \{n\}$ ) are counted. To calculate the zero crossings, the mean of the samples within a frame is calculated and the calculated mean is subtracted from the frame samples. Any time two adjacent frame samples have different signs, a count of the zero crossings is incremented. As such, crossings are determined each time the signal in the samples crosses the mean.

In step 414, the signal to noise ratio ( $SNR\{n\}$ ) is computed. To compute  $SNR\{n\}$ , a signal estimate and a background noise estimate are calculated. If the  $NACF\{n\}$  is greater than 0.5 for 5 consecutive frames, the signal estimate  $S^i\{n\}=\max\{0.97S^i\{n-1\}, Esm^i\{n\}\}$  for as long as  $NACF$  is greater than 0.5. Otherwise,  $S^i\{n\}=\max\{S^i\{n-1\}, Esm^i\{n\}\}$ . The background noise estimate  $B^i$  is determined by one of two algorithms chosen depending on the value of  $NACF$ . If  $NACF$  is less than 0.38 for more than 8 consecutive frames, then  $B^i\{n\}=\min\{Esm^i\{n\}, \max\{1.03B^i\{n-1\}, B^i\{n-1\} +1\}\}$ . Otherwise, if  $SNR>3$ , then  $B^i\{n\}=\min\{Esm^i\{n\}, \max\{1.00547B^i\{n-1\}, B^i\{n-1\} +1\}\}$ , and if  $SNR\leq 3$ , then  $B^i\{n\}=\min\{Esm^i\{n\}, B^i\{n-1\}\}$ . After determining the background noise estimate,  $B^0\{n\}$  is limited to be between 10 and 5059644 and  $B^1\{n\}$  is limited to be between 5 and 5059644.

**To compute  $SNR\{n\}$ ,  $QSNRU^i\{n\}$  is calculated as:** In step 416, rate decision thresholds are calculated. The thresholds used for the rate decisions are based on the  $SNR$  of the previous frame. The threshold for the lower band is  $T^0\{n\}$  and the threshold for the upper band is  $T^1\{n\}$ . The thresholds  $T^0\{n\}$  and  $T^1\{n\}$  are determined as follows:

In step 418, if  $BE^0\{n\}>T^0\{n\}$  or  $BE^1\{n\}>T^1\{n\}$ , the process moves to step 420, otherwise the frame is determined to be a non-speech frame (step 428). In step 420, if  $NACF\{n\}>0.5$  and  $ZC\{n\}<60$ , then the frame is determined to be a solid voiced speech frame (step 422). Otherwise, if  $NACF\{n\}>0.5$  and  $ZC\{n\}<80$  or  $NACF\{n\}<0.25$  and  $ZC\{n\}<45$  or  $Pg\{n\}>15$  or  $5.190283*NACF\{n\}-0.092413*ZC\{n\}+3.091836<0$  (step 424), then the frame is determined to be a voiced speech frame (step 426). Otherwise, the frame is determined to be an unvoiced speech frame (step 438).

FIG. 5: is a modular diagram 500 of an exemplary apparatus 104. The exemplary apparatus 104 includes a module 502 to receive an input sound stream of a user. The exemplary apparatus 104 further includes a module 504 to split the input sound stream into a plurality of frames.

A frame may be referred to as a packet, a slot, a time slot, or otherwise, some data defined by a time period. The exemplary apparatus 104 further includes a module 506 to classify each of the frames as a non-speech frame or a speech frame, a module 508 to determine a pitch of each of the frames in a subset of the speech frames, and a module 510 to identify the gender of the user from the determined pitch. The subset of the speech frames may include only solid voiced speech frames. Alternatively, the subset of the speech frames includes both solid voiced speech frames and voiced speech frames. In another configuration, the subset of the speech frames includes all speech frames, and therefore further includes unvoiced speech frames.

FIG. 6: is a modular diagram 600 for computing a pitch of a signal in an exemplary apparatus 104. The modular diagram 600 expands module 508 of FIG. 5. As shown in FIG. 6, the pitch is computed with five modules that follow the first five steps defined for determining the  $NACF$ . In module 602, an error signal is computed by

filtering the original frame data by  $A(z)\{n\}$  to produce  $e_k\{n\}$ . In module 604, the error signal is low pass filtered using the filter with the filter coefficients defined in Table 2. In module 606, the error signal is decimated by a factor of 2 to produce

An apparatus for wireless communications includes means for receiving an input sound stream of a user, means for splitting the input sound stream into a plurality of frames, means for classifying each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, means for determining a pitch of each of the frames in a subset of the speech frames, and means for identifying a gender of the user from the determined pitch. The means for determining the pitch includes means for filtering the speech frames to compute an error signal, means for filtering the error signal with a low pass filter, means for decimating the filtered error signal, means for computing an autocorrelation of the decimated error signal, means for finding a maximum autocorrelation value, and means for setting the pitch to an index of the maximum autocorrelation value. The aforementioned means is the processing system 104 configured to perform the function identified in each of the aforementioned means.

The previous description is provided to enable any person skilled in the art to fully understand the full scope of the disclosure. Modifications to the various configurations disclosed herein will be readily apparent to those skilled in the art. Thus, the claims are not intended to be limited to the various aspects of the disclosure described herein, but is to be accorded the full scope consistent with the language of claims, wherein reference to an element in the singular is not intended to mean "one and only one" unless specifically so stated, but rather "one or more." Unless specifically stated otherwise, the term "some" refers to one or more.

All structural and functional equivalents to the elements of the various aspects described throughout this disclosure that are known or later come to be known to those of ordinary skill in the art are expressly incorporated herein by reference and are intended to be encompassed by the claims. Moreover, nothing disclosed herein is intended to be dedicated to the public regardless of whether such disclosure is explicitly recited in the claims. No claim element is to be construed under the provisions of 35 U.S.C. 112, sixth paragraph, unless the element is expressly recited using the phrase "means for" or, in the case of a method claim, the element is recited using the phrase "step for."

## WE CLAIMS

- 1) Our Invention **“DSD- Predict Gender, Age, Country, meaning”** is an apparatus for wireless communications includes a processing system and the processing system is configured to receive an input sound stream of a user, split the input sound stream into a plurality of frames. The invented technology also classifies each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, determine a pitch of each of the frames in a subset of the speech frames, and identify a gender, age and country of the user from the determined pitch. The invented technology also determines the pitch, the processing system is configured to filter the speech frames to compute an error signal, compute an autocorrelation of the error signal, find a maximum autocorrelation value using deep learning programming and set the pitch to an index of the maximum autocorrelation value. The invented technology also maintains a table comprising a male score for each pitch and a female score for each pitch the male scores being determined by computing a pitch of each of a number of male frames counting a number of the frames with each particular pitch. The invented technology also setting the male score for each pitch to a function of the number of the frames with the pitch divided by the number of male frames the female scores being determined by computing a pitch of each of a number of female frames counting a number of the frames with each particular pitch, and setting the female score for each pitch to a function of the number of the frames with the pitch divided by the number of female frames.
- 2) According to claim1# the invention is to is an apparatus for wireless communications includes a processing system and the processing system is configured to receive an input sound stream of a user, split the input sound stream into a plurality of frames?
- 3) According to claim1,2# the invention is to frames as one selected from the group consisting of a non-speech frame and a speech frame determine a pitch of each of the frames in a subset of the speech frames, and identify a gender, age and country of the user from the determined pitch.
- 4) According to claim1,2,3# the invention is to pitch, the processing system is configured to filter the speech frames to compute an error signal compute an autocorrelation of the error signal finds a maximum autocorrelation value using deep learning programming and set the pitch to an index of the maximum autocorrelation value.
- 5) According to claim1,2,3# the invention is to maintains a table comprising a male score for each pitch and a female score for each pitch the male scores

being determined by computing a pitch of each of a number of male frames counting a number of the frames with each particular pitch.

- 6) According to claim 1, 2, 4# the invention is to setting the male score for each pitch to a function of the number of the frames with the pitch divided by the number of male frames the female scores being determined by computing a pitch of each of a number of female frames counting a number of the frames with each particular pitch.
- 7) According to claim 1, 2, 4, 5# the invention is to setting the female score for each pitch to a function of the number of the frames with the pitch divided by the number of female frames.

Date: 8/12/2020

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Mr ASHISH LADDA (Assistant Professor)

Dr. O SRI NAGESH (Assistant Professor)

Dr. JITESH RAMDAS SHINDE (Assistant Professor)

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Mr. S DEVANAM PRIYA (Associate Professor)



Patent Title: **DSD- Predict Gender, Age, Country, meaning:** Detect Sound and Predict their Gender, Age, Country and Meaning Using Deep Learning Programming.(Urban Sound Dataset)

### **ABSTRACT**

Our Invention “**DSD- Predict Gender, Age, Country, meaning**” is an apparatus for wireless communications includes a processing system and the processing system is configured to receive an input sound stream of a user, split the input sound stream into a plurality of frames. The invented technology also classifies each of the frames as one selected from the group consisting of a non-speech frame and a speech frame, determine a pitch of each of the frames in a subset of the speech frames, and identify a gender, age and country of the user from the determined pitch. The invented technology also determines the pitch, the processing system is configured to filter the speech frames to compute an error signal, compute an autocorrelation of the error signal, find a maximum autocorrelation value using deep learning programming and set the pitch to an index of the maximum autocorrelation value. The invented technology also maintains a table comprising a male score for each pitch and a female score for each pitch the male scores being determined by computing a pitch of each of a number of male frames counting a number of the frames with each particular pitch. The invented technology also setting the male score for each pitch to a function of the number of the frames with the pitch divided by the number of male frames the female scores being determined by computing a pitch of each of a number of female frames counting a number of the frames with each particular pitch, and setting the female score for each pitch to a function of the number of the frames with the pitch divided by the number of female frames.

FOR  
Dr. RAKESH NAYAK ((Professor)  
Dr. O SRI NAGESH (Assistant Professor)  
Dr. BISWA MOHAN ACHARYA (Assistant Professor)  
TOTAL NO OF SHEET: 06

Mr. ASHISH LADDA (Assistant Professor)  
Dr. JITESH RAMDAS SHINDE (Assistant Professor)  
Mr. S DEVANAM PRIYA (Associate Professor)

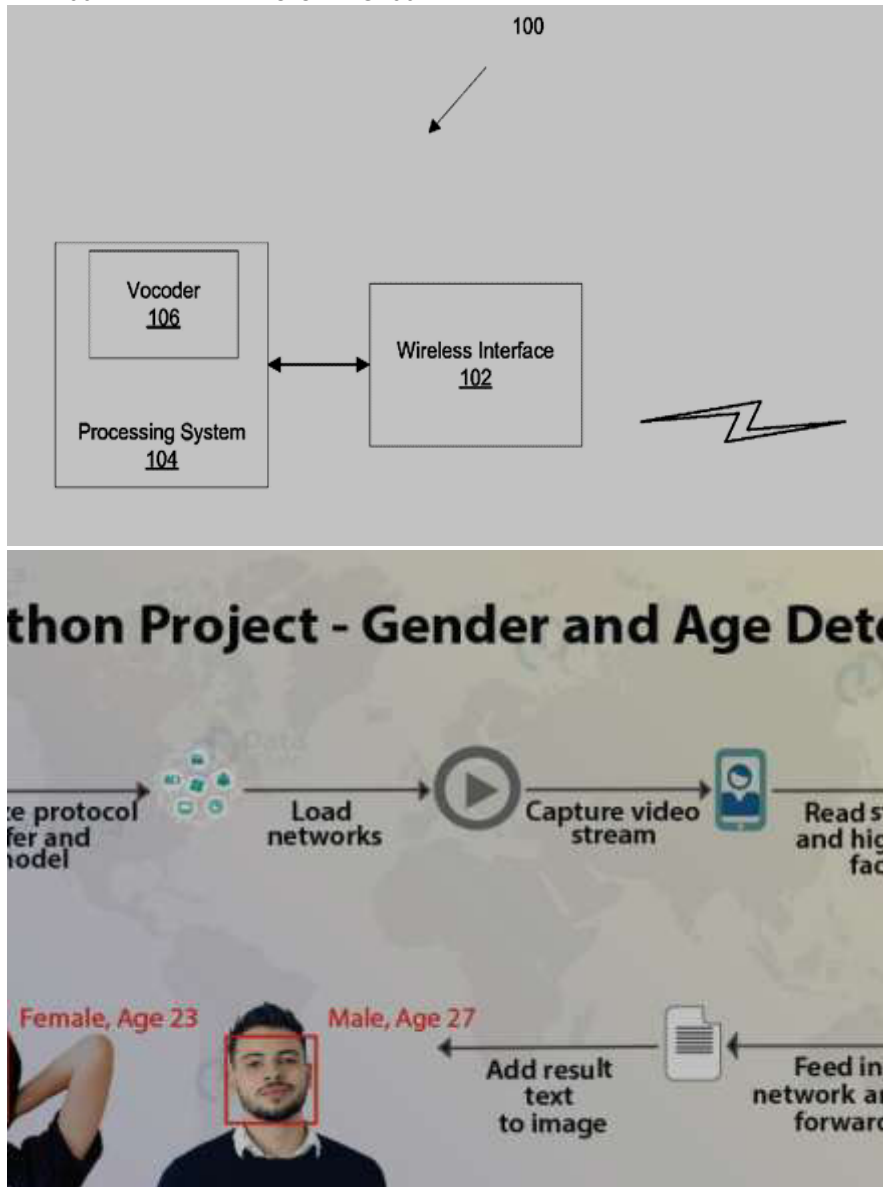


FIG. 1: IS A CONCEPTUAL BLOCK DIAGRAM ILLUSTRATING A HARDWARE CONFIGURATION FOR AN EXEMPLARY APPARATUS.

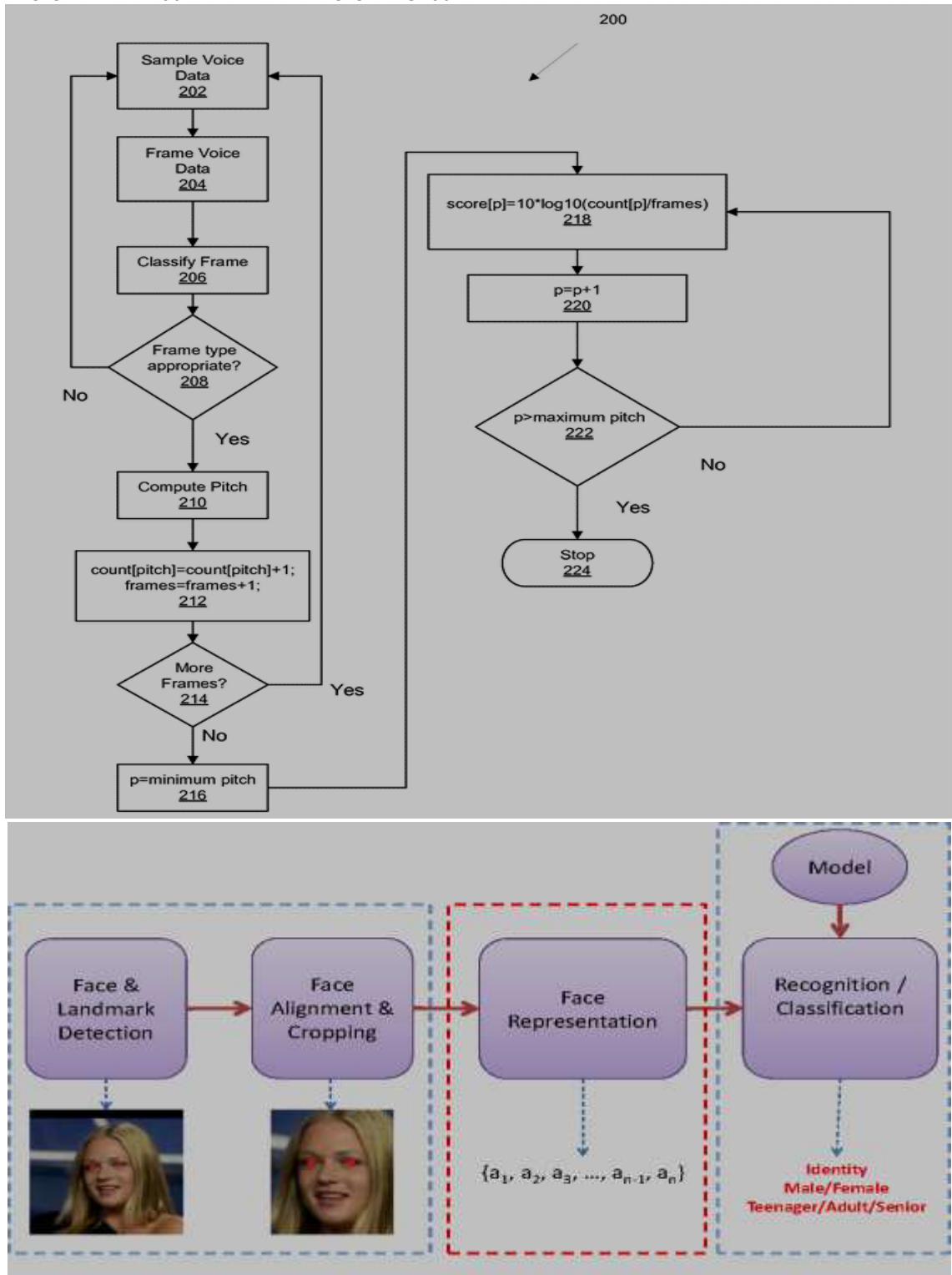


FIG. 2: IS A FLOW CHART FOR TRAINING TO PRODUCE SCORES RELATED TO PITCH FOR KNOWN GENDERS.

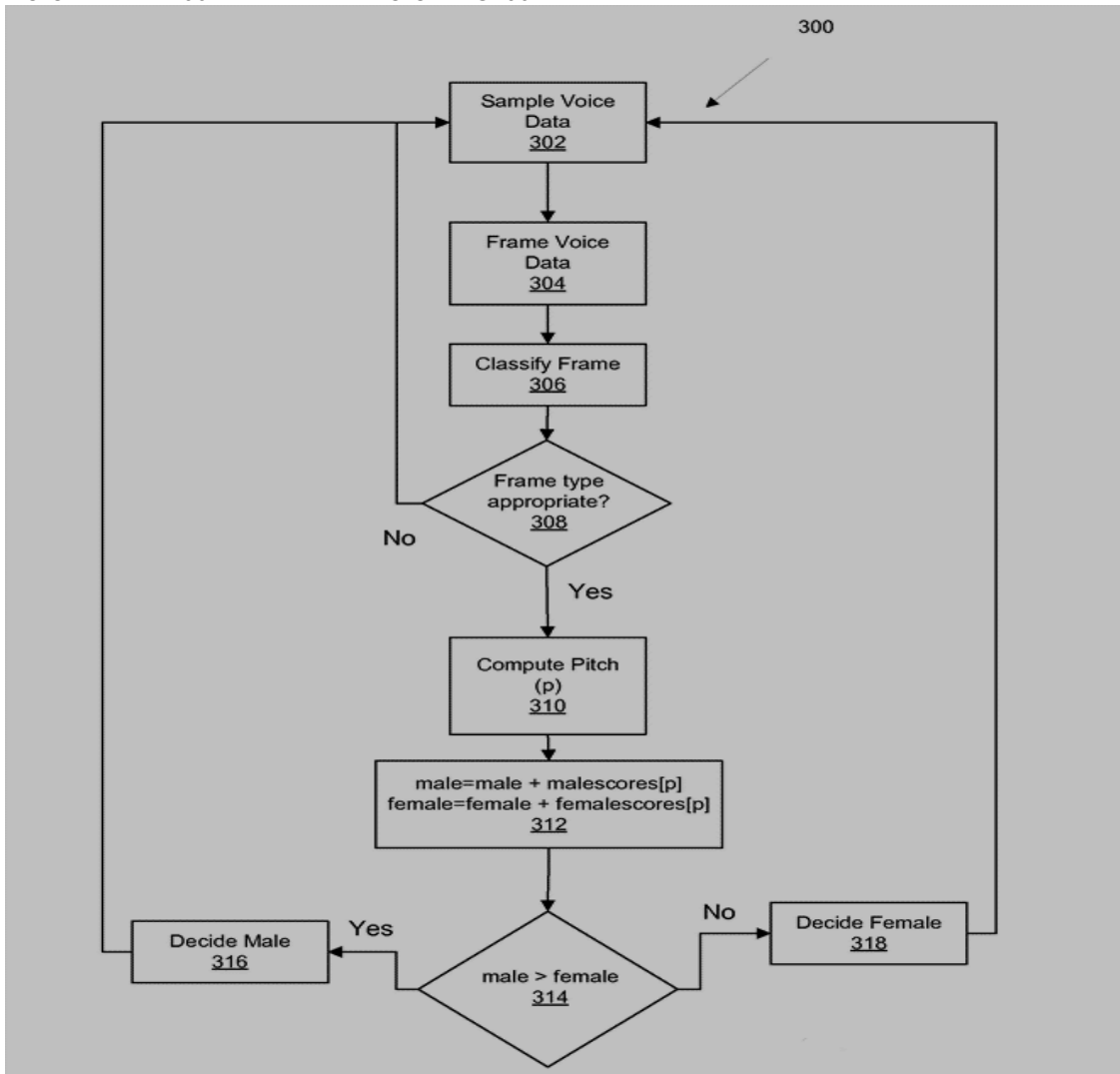





IMAGE INPUT	RESULT
	Female, 18.97
	Male, 26.52
	Male, 33.41

FIG. 3: IS A FLOW CHART FOR DETERMINING GENDER OF A SPEAKER.

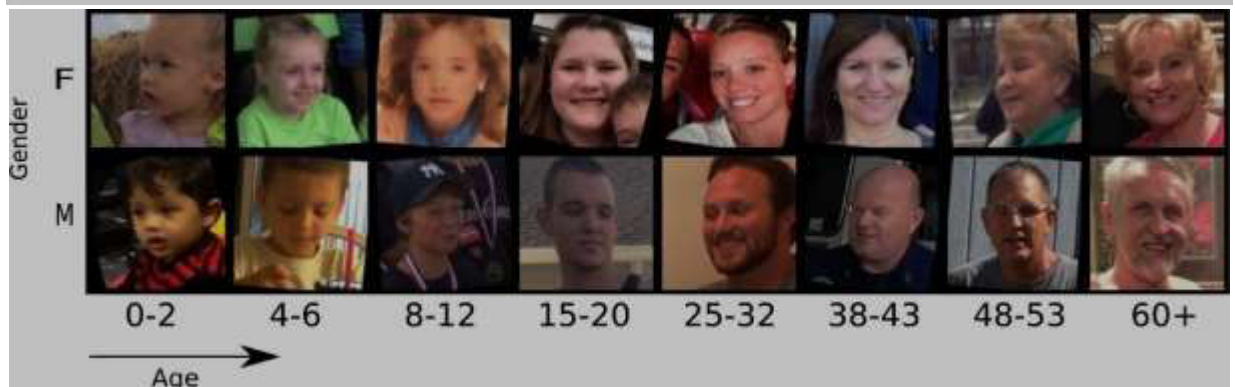
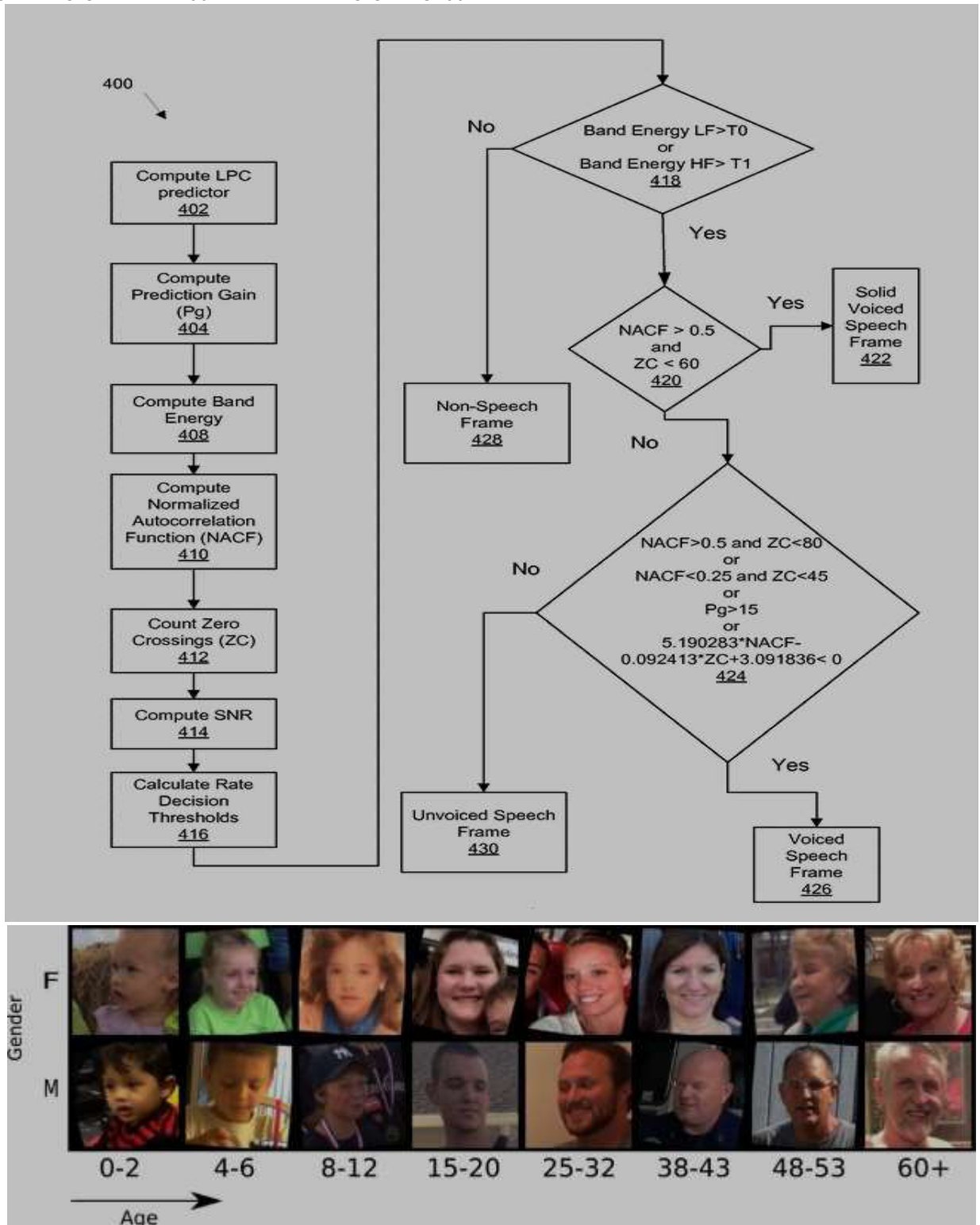


FIG. 4: IS A FLOW CHART FOR CLASSIFYING A FRAME AS SOLID VOICED, VOICED, AND UNVOICED.

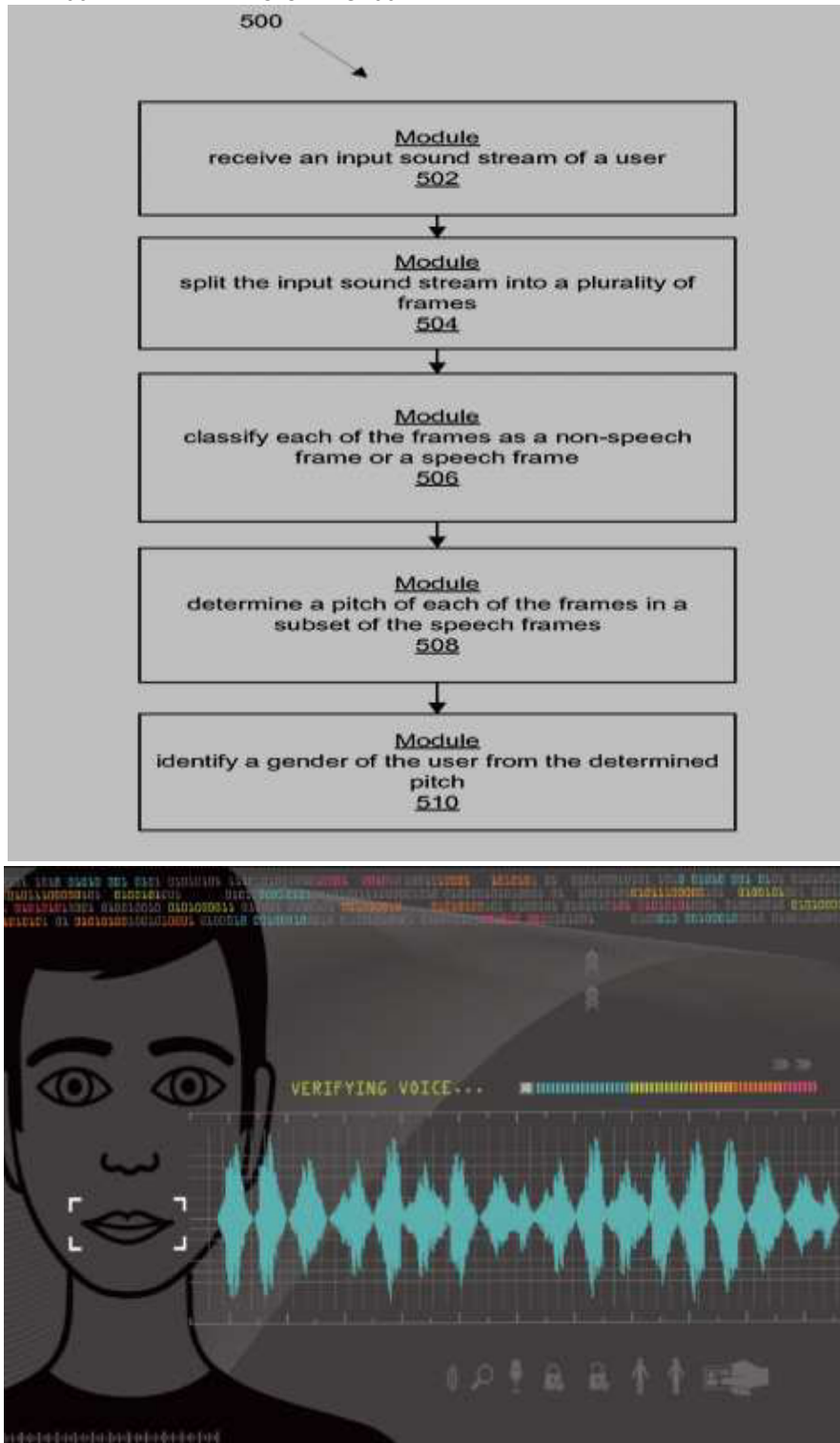


FIG. 5: IS A MODULAR DIAGRAM OF AN EXEMPLARY APPARATUS.

FOR

Dr. RAKESH NAYAK ((Professor)

Dr. O SRI NAGESH (Assistant Professor)

Dr. BISWA MOHAN ACHARYA (Assistant Professor)

TOTAL NO OF SHEET: 06

Mr. ASHISH LADDA (Assistant Professor)

Dr. JITESH RAMDAS SHINDE (Assistant Professor)

Mr. S DEVANAM PRIYA (Associate Professor)

NO OF FIG: 06

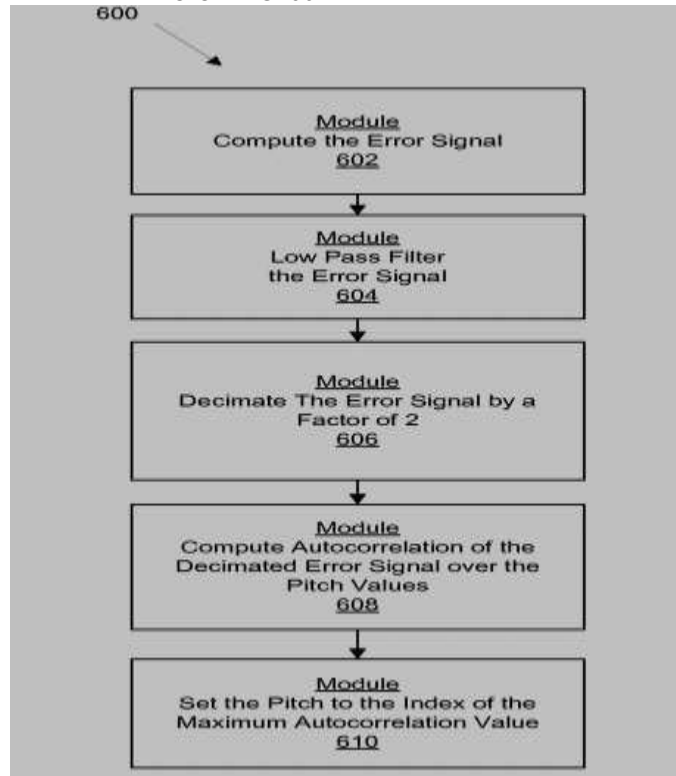


FIG. 6: IS A MODULAR DIAGRAM FOR COMPUTING A PITCH OF A SIGNAL IN AN EXEMPLARY APPARATUS.



### Application Details

APPLICATION NUMBER	202041010682
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	12/03/2020
APPLICANT NAME	<b>1 . Mr. S.Prasad Jones Christydass</b> <b>2 . Mr. A.Beno</b> <b>3 . Dr.C. Peter Devadoss</b> <b>4 . Dr. I. Jerin Leno</b> <b>5 . Dr. Glorindal Selvam</b> <b>6 . Ms. M.Poonguzhali</b> <b>7 . Dr.R.Mohandas</b>
TITLE OF INVENTION	PENTAGONAL RING SLOT ANTENNA WITH SRR FOR TRI-BAND APPLICATION
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	sambalamurugan@gmail.com
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E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	20/03/2020

### Application Status



<b>FORM 1</b> <b>THE PATENTS ACT, 1970</b> <b>(39 of 1970)</b> <b>&amp;</b> <b>THE PATENTS RULES, 2003</b> <b>APPLICATION FOR GRANT OF PATENT</b> <b>[See sections 7,54 &amp; 135 and rule 20(1)]</b>	<b>(FOR OFFICE USE ONLY)</b>  Application No.: ..... Filing Date: ..... Amount of Fee Paid: ..... CBR No.: ..... Signature: .....
---	---

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f 5

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**3. TITLE OF THE INVENTION: PENTAGONAL RING SLOT ANTENNA WITH SRR FOR TRI-BAND APPLICATION**

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**5. PRIORITY PARTICULARS OF THE APPLICATION(S) FILED IN CONVENTION COUNTRY:**

Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Title of the Invention
--------	---------	--------------------	-------------	-----------------------	------------------------

**6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:**

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

**7. PARTICULARS FOR FILING DIVISIONAL APPLICATION**

Original (first) Application Number	Date of Filing of Original (first) Application
-------------------------------------	--

**8. PARTICULARS FOR FILING PATENT OF ADDITION:**

Main Application / Patent Number:	Date of Filing of Main Application
-----------------------------------	------------------------------------

**9. DECLARATIONS:**

**(i) Declaration by the inventor(s)**

I/We, Mr. S.Prasad Jones Christydass, Mr. A. Ben, Dr. C. Peter Devadoss, Dr. I. Jerin Leno, Dr. Glorindal Selvam, Ms. M. Poonguzhali, Dr. R. Mohandas, is/are the true and first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: 12.03.20

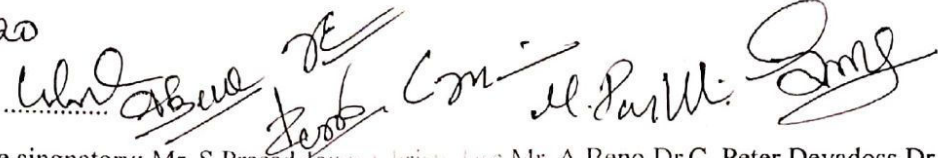
(b) Signature(s) of the inventor(s):

(c) Name(s): Mr. S.Prasad Jones Christydass, Mr. A. Ben, Dr. C. Peter Devadoss, Dr. I. Jerin Leno, Dr. Glorindal Selvam, Ms. M. Poonguzhali, Dr. R. Mohandas

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

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

(a) Date: 12.02.20

(b) Signature(s) : 

(c) Name(s) of the singnatory: Mr. S.Prasad Jones, Christy Juss, Mr. A.Beno, Dr.C. Peter Devadoss, Dr. I. Jerin Leno, Dr. Glorindal Selvam, Ms. M.Poonguzhali, Dr.R. ...

(iii) Declaration by the applicant(s)

- The Complete specification relating to the invention is filed with this application.
- I am/We are, in the possession of the above mentioned invention.
- There is no lawful ground of objection to the grant of the Patent to me/us.


10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:

Sr.	Document Description	FileName
-----	----------------------	----------

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

Dated this(Final Payment Date): 12.02.20



Signature: 

Name: Mr.S. Balamurugan

To The Controller of Patents

The Patent office at CHENNAI

This form is electronically generated.

**FORM 5**  
**THE PATENTS ACT, 1970**  
(39 of 1970)

&  
**The Patents Rules, 2003**  
**DECLARATION AS TO INVENTORSHIP**  
[See section 10(6) and rule 13(6)]

1. NAME OF APPLICANT

**Dr. MD. ZIA UR RAHMAN**

hereby declare that the true and first inventor of the invention disclosed in the complete specification is

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**Nationality** : Indian.

Dated this November 19, 2019

Authorized Patent Agent Signature:



Authorized Patent Agent Name: **PUTTA GANESH**  
(IN/PA/2933)

3. DECLARATION TO BE GIVEN WHEN THE APPLICATION IN INDIA IS FILED BY  
THE APPLICANT (S) IN THE CONVENTION COUNTRY:-

-NA-

4. STATEMENT(to be signed by the additional inventor(s) not mentioned in the application form)

-NA-

To,  
The Controller of Patents,  
The Patent Office, at Chennai

**FORM 1**  
**THE PATENTS ACT, 1970**  
**(39 of 1970)**  
**&**  
**THE PATENTS RULES, 2003**  
**APPLICATION FOR GRANT OF PATENT**  
[See sections 7,54 & 135 and rule 20(1)]

**(FOR OFFICE USE ONLY)**

Application No.: .....  
Filing Date: .....  
Amount of Fee Paid: .....  
CBR No.: .....  
Signature: .....

**1. APPLICANT(S):**

Sr.No.	Name	Nationality	Address	Country	State
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**2. INVENTOR(S):**

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			Fields, Vaddeswaram- 522502, Guntur, Andhra Pradesh, India		
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5	SHAFI SHAHSAVAR MIRZA	India	Dept. of E.C.E., Eswar College of Engineering, Narasaraopeta- 522601, Andhra Pradesh.	India	Andhra Pradesh

**3. TITLE OF THE INVENTION: SYSTEM AND METHOD FOR ELIMINATING ARTIFACTS IN ELECTROCARDIOGRAM SIGNALS**

**4. ADDRESS FOR CORRESPONDENCE OF APPLICANT / AUTHORISED PATENT AGENT IN INDIA:**

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**5. PRIORITY PARTICULARS OF THE APPLICATION(S) FILED IN CONVENTION COUNTRY:**

Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Title of the Invention
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**6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:**

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

**7. PARTICULARS FOR FILING DIVISIONAL APPLICATION**

Original (first) Application Number	Date of Filing of Original (first) Application
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**8. PARTICULARS FOR FILING PATENT OF ADDITION:**

Main Application / Patent Number:	Date of Filing of Main Application
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**9. DECLARATIONS:**

**(i) Declaration by the inventor(s)**

I/We ,ASIYA SULTHANA,MD. ZIA UR RAHMAN,M. VASIM BABU,L KOTESWARA RAO,SHAFI SHAHSAVAR MIRZA, is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: -----

(b) Signature(s) of the inventor(s):

(c) Name(s): ASIYA SULTHANA, *Asiya Sulthana*

MD. ZIA UR RAHMAN, *MD. Zia ur Rahman*

M. VASIM BABU, *M. Vasim Babu*

L KOTESWARA RAO, *L.K. Rao*

SHAFI SHAHSAVAR MIRZA, *Shafie Mirza*

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

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

(a) Date: -----

(b) Signature(s) : .....

(c) Name(s) of the singnatory: Dr. MD. ZIA UR RAHMAN

**(iii) Declaration by the applicant(s)**

- The Complete specification relating to the invention is filed with this application.
- I am/We are, in the possession of the above mentioned invention.
- There is no lawful ground of objection to the grant of the Patent to me/us.

**10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:**

<b>Sr.</b>	<b>Document Description</b>	<b>FileName</b>
1	REQUEST FOR EARLY PUBLICATION(FORM-9)	Form 9.pdf
2	REQUEST FOR EXAMINATION (FORM-18)	Form 18.pdf
3	FORM 1	Form 1.pdf
4	COMPLETE SPECIFICATION	Form 2.pdf
5	DRAWINGS	Drawings.pdf
6	STATEMENT OF UNDERTAKING (FORM 3)	Form 3.pdf
7	POWER OF AUTHORITY	POA.pdf
8	DECLARATION OF INVENTORSHIP (FORM 5)	Form 5.pdf

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

Dated this(Final Payment Date): 19th November, 2019

Signature: 

Name: PUTTA GANESH

(IN/PA/2933)

To The Controller of Patents

The Patent office at CHENNAI