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Patents @IFHE

At **IFHE**, we pursue teaching-learning differently. We live a spirit of research & innovation and foster a community of dynamic and curious thinkers for the real world.

Emphasizing on contributing towards new and Innovative India, IFHE has **59 patents (4 international granted, 2 international published, 53 national published)** in the emerging trends like Design, Mechatronics, Artificial intelligence, Data science, Block chain, IOT etc., which were filed by faculty and students.

The list of patents is:

International patents Granted: 4

S.No	Name of the Patenter	Patent Number	Title of the patent	Year of Award of patent
1	Dr.A. ChandraSekhar	20201020 44	A smart and automated patient monitoring bed for COVID patients	Granted Eight years from 28 August 2020
2	Dr. Grandhi Suresh Kumar	2020102178	Smart School Bag For Assisting and Protecting the School Students by Tracking the Geographical Location	Granted Eight years from 8 September 2020
3	Dr.Sayaji Hande	US 10 318 971 B2	Normalizing user responses to an event by removing behavioral bias	International: Granted June 11, 2019
4	Dr.A. ChandraSekhar	2021101931	Development of Android Based Auto Car Jack Using Internal Car Power	Granted Eight years from 19th May 2021

International patents Published: 2

S.No	Name of the Patenter	Patent Number	Title of the patent	Year of Award of patent
1	Dr.Manmadha chary	WO 2019 / 008547 A1	Implantable Device for Temporomandibular Joint and Method of Production Thereof	International: Published Issue 10/1/2019
2	Dr.Chandrashekhar A	2021104585	An artificial intelligence and IOT based system for accessing civil infrastructure,	Filed on 27/07/2021. (India and Australia)

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National Patents Published: 53

S.No	Name of the Patenter	Patent Number	Title of the patent	Year of Award of patent
1	Dr.Manmadha chary	201741023907	Implantable Device for Temporomandibular Joint and Method of Production Thereof	Indian: Published Issue 14/7/2017
2	Mr.P.Pavan kumar	201841009115 A	Multicore System For Reprocessing Of Tasks	Published Issue 16/3/2018
3	Dr.A. ChandraSekhar	201841036063 A	A Device For Detecting Synthetic Food Ingredients	Published Issue 05/10/2018
4	Dr.Sachi Nandan Mohanty	201941032093	Method of Management of Computing workload in the networked hosts using artificial neural network	Published Issue 16/8//2019
5	Dr.Sachi Nandan Mohanty	201941023480	Intelligent PSO-FUZZY Logic based DC Motor control system and method thereof Communication	Published Issue 2/8/2019
6	Dr.Sachi Nandan Mohanty	201941024901	Artificial Intelligence based system and method to diagnose Parkinson's Disease	Published Issue 28/6/2019
7	Dr. Sandeep Kumar Panda DR. G Sudhaamsh mohan reddy	201911034937	Method for management of scholarship of large number of students based on Blockchain	Published Issue 6/9/2019
8	1 . K VaraPrasada Rao 2. Sathya AR 3 . Dr. Sandeep Kumar Panda 4 . Dr. S. Vairachilai 5 . Dr. G Sudhaamsh Mohan Reddy	201941038159	Blockchain based healthcare management method	Published Issue 27/9/2019
9	Dr. Sandeep Kumar Panda	201931032115	Health monitoring system	Published Issue 13/9/2019

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10	Dr. Sandeep Kumar Panda	201911023848	Method of fuzzy inference model control for an injection molding machine	Published Issue 5/7/2019
11	Dr. Sandeep Kumar Panda	210941046017	Agriculture monitoring system based on wireless sensor network	Published Issue 17/1/2020
12	Shubhangi Vijay Urkude, Dr. Sandeep Kumar Panda	201941053080	High performance computation system and method	Published Issue 27/12/2019
13	Mr. P.Pavan Kumar	201941014136A	"Method For Detecting Anti Patterns in Web Servicesand Business Processes"	Published Issue 26/04/2019
14	Sirisha Potluri	201941044511	Method of load distribution balancing for fog cloud computing in iot environment	Published Issue 29/11/2019
15	K.Kishore Kumar	201941016569	An Integrated 555 Timer IC Kit	Published Issue 13/9/2019
16	Dr. Grandhi Suresh kumar	201941052527 A	Design and Fabrication of Android based hydraulic jack	Published Issue 3/01/2020
17	Dr.S.Vairachilai DR. G Sudhaamsh mohan reddy	201941032820 A	Fuzzy logic based system of intelligent electric solar dyer for fruits	Published Issue 23/8/2019
18	Dr. S. Vairachilai Shubhangi Vijay Urkude	201941042929	Method for data transmission	Published Issue 25/10/2019
19	Dr.Sachi Nandan Mohanty	201941053267	Computer Implimented Method For Fingerprint Recognigation Using Filtering Techniques	Published Issue 27/12/2019
20	Ms. Movva Pavani1	201941054851 A	Smart Wearable Reminder Device	Published Issue 3/1/2020
21	Mrs.Harika Devi	202041020290 A	Effective Management Analysis of Signal Coverage and Novel Design of Triangular Patch Antenna for Quasi Elliptic Band Pass Response	Published Issue 29/05/2020

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22	Dr.A. ChandraSekhar	202041020271 A	GUI based eye tracking for disabled people using viola-jones algorithm and Hough transform	Published Issue 29/05/2020
23	Dr.Anjanna Matta Dr.G.Sucharitha D.V.Raghunatha Reddy	202041005255	Real-Time Monitoring System For Compressed Gas Artificial Lift & Method Thereof	Published Issue 14/2/2020
24	Dr. Sandeep Kumar Panda Sathya A R	202041003745	Fraud Resistatant Crowd funding System Using Ethereum Blockchain	Published Issue 7/2/2020
25	1. Dr. Sandeep Kumar Panda K 2. VaraPrasada Rao 3. Sathya AR	201941023811	Permissioned Blockchain Networks using Hyperledger Fabrics	Published Issue 7/2/2020
26	Dr. Sandeep Kumar Panda	202041018617 A	Health Record Tracking in Cloud Environment using Block Chain Technology	Published Issue 5/6/2020
27	1. Dr. Sandeep Kumar Panda K 2. VaraPrasada Rao 3. Shubhangi Vijay Urkude	202041018673 A	Copyright Protection system based on using Block chain Technology	Published Issue 5/6/2020
28	1. Dr. Sandeep Kumar Panda K 2. VaraPrasada Rao	202041018639 A	Medical supply chain to track counterfeit drugs using Block chain Technology	Published Issue 5/6/2020
29	1. Dr. Sandeep Kumar Panda K 2. VaraPrasada Rao	202041018622 A	System and Method for land registry using Block chain Technology	Published Issue 5/6/2020
30	1. Dr. Sandeep Kumar Panda K 2. VaraPrasada Rao	202041018768 A	Secure Event Ticket booking using Block chain Technology	Published Issue 5/6/2020
31	Dr. Sandeep Kumar Panda T. Krishnan Dr. S. Vairachilai	202041018783 A	Model Based Human Faces generation using generative adversarial networks	Published Issue 5/6/2020

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32	Dr. Grandhi Suresh kumar	202041017417 A	Design for solar panel cleaning system using spa concept	Published Issue 5/6/2020
33	Dr.A. ChandraSekhar	File Number: 202041024955 Filed Date: 14/06/2020	Mind-controlled drone: using brainwaves and deep learning to control drone through thoughts	Published Issue 26.06.2020
34	Dr.A. ChandraSekhar Mrs.Harika Devi	202041026841 A	Emergency Notification Systems For Use With Footwear For User's Safety	Published Issue 10/7/2020
35	Dr.A. ChandraSekhar Dr.Pavan Kumar	202041026317	Sonification for database administrators (SoniDBA)	Published Issue 3/7/2020
36	Dr.Anjanna Matta	202011001334	Method of free space optical communication with minimising fog related atmospheric interferences	Published Issue 17/1/2020
37	Dr. Banoth seetharamulu	201941026448	Precision agriculture for paddy crop productivity	Published Issue 12/07/2019
38	Dr. B. Deevena raju	202041034520 A	Encryption based security solution for data communication of IOT devices	Published Issue 04/09/2020
39	Mrs.Harika Devi	202041038731	Virtual vision system for visually impaired people and Method thereof	Published Issue 02-10-2020
40	Dr. Sandeep Kumar Panda K, Sathya AR	202041044397	Defence Ammunition tracking system using Block chain technology	Published Issue 23-10-2020
41	Dr. M L Pavan Kishore	202041042280	Computer Implemented System and method to perform structural Optimization of Propeller Blade	Published Issue 09-10-2020
42	Dr. H. Sudheer	202041032052	An intelligent mobile alert system for reservoir water level and flow indication Integrated with GPS for farmers	Published Issue 34/2020, August 2020.
43	Dr. H. Sudheer	202041041120	An Automated and integrated mobile app for handling road accident and emergency situation smartly	Published Issue 09/10/2020
44	Movva Pavani K.Kishore Kumar	202041042447 A	An IoT Based Health Monitoring System	Published Issue 09/10/20

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45	Dr. Sandeep Kumar Panda	202041044609 A	Optimization of car buying criterion using multi-class classification Model	Published Issue 30/10/2020
46	Dr. B. Deevena raju	202141006249 A	Fault detection using artificial intelligence in a telecommunication Network	Published Issue 19/02/2021
47	Sathya A. R. Dr. Shubhangi V. Urkude Dr. Sandeep Kumar Panda	202031054680 A	Distributed ledger technology in the construction industry using CORDA	Publication Date : 05/02/2021
48	K. Bramha naidu	202041055178	A Generic Frame work for social feedback analysis for organizational growth	Published Issue 25/12/2020
49	1)B. Naresh Kumar Reddy 2)B. Seetharamulu 3)k. Bramha naidu 4)b. Deevena raju	202041030007A	A scalable and energy efficient fault tolerant network-on-chip	Published Issue 31/07/2020
50	Dr. Sudheer Hanumanthakari	202121028826 A	IOT and cloud based viral detector device microca•: adapting corona Virus and other deadly pathogens	Published Issue 31/07/2021
51	Dr. Sudheer Hanumanthakari	202141026215 A	IOT and cloud based agricultural monitoring system	Published Issue 02/07/2021
52	Dr.Chandrashekhar A	202141038074	Secure and automated driving inspector powered by Arduino Raspberry PI using deep learning	Publication Date: 03/09/2021.
53	Dr. Shubhagata Roy	202141044306 A	Research on customer expectations, experience, and satisfaction with Services provided using the six sigma technique.	Publication Date : 05/10/2021

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/06/2020

(21) Application No.202041026317 A
(43) Publication Date : 03/07/2020

(54) Title of the invention : SONIFICATION FOR DATABASE ADMINISTRATORS (SONIDBA)

(51) International classification	:G10H 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
The present invention named SoniDBA• is the software product that renders sonification service to DBA. In other words, SoniDBA converts most recent database alerts into non-verbal sounds that are DBA-understandable. Thus SoniDBA helps database administrators to have real time monitoring of availability and performance of databases. The invention is cloud based which reaps benefits of cloud such as scalability, availability, fault tolerance, elasticity and eliminates time and geographical restrictions. The invention specifically targets DBAs with its sonification service that saves time and effort of DBAs. Traditional database alert messages take more time to comprehend than non-verbal sounds produced by SoniDBA. Thus it renders invaluable service to DBAs. Moreover, it can also help DBAs who are visually impaired.

No. of Pages : 15 No. of Claims : 8

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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202011001334 A

(19) INDIA

(22) Date of filing of Application :11/01/2020

(43) Publication Date : 17/01/2020

(54) Title of the invention : METHOD OF FREE SPACE OPTICAL COMMUNICATION WITH MINIMISING FOG RELATED ATMOSPHERIC INTERFERENCES

(51) International classification	:H04B0010112000,H04B0010110000,H04B0010118000,G01N0021530000,H04B0010114000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
The present invention is related to a method of free space optical communication with minimizing fog related atmospheric interferences. The objective of the present invention is to overcomes the adequacies of the prior art in free space optical communication at fog related atmospheric interferences.

No. of Pages : 18 No. of Claims : 5

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/07/2019

(21) Application No.201941026448 A
(43) Publication Date : 12/07/2019

(54) Title of the invention : PRECISION AGRICULTURE FOR PADDY CROP PRODUCTIVITY

(51) International classification :A01B79/005
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
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(57) Abstract :
According to this invention, a novel technology-driven solution is provided for real time monitoring of paddy crop towards precision agriculture. It is meant for making right decisions at right time for right reasons. The invention includes field level IoT integrated infrastructure with various kinds of sensors, actuators and base station. It is integrated with Internet and cloud computing. The specialized Agro-OS for PA has PA related extensions on top of Linux kernel. The invention provides 24x7 service with automatic monitoring of paddy crop and provide user friendly information in dashboard associated with a DSS. The sensor data is stored in public cloud which is subjected to big data analytics and required business intelligence is generated. The Agro-Apps can gain access to this and provide the information in a dashboard. The system is a step towards PA with paddy crop. However, it has PA infrastructure that can be extended to other crops by changing field level setup. Thus the aim of PA to eliminate/minimize waste and increase productivity with technology-driven solution to agriculture is realized.

No. of Pages : 17 No. of Claims : 7

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/08/2020

(21) Application No.202041034520 A
(43) Publication Date : 04/09/2020

(54) Title of the invention : ENCRYPTION BASED SECURITY SOLUTION FOR DATA COMMUNICATION OF IOT DEVICES

(51) International classification :H04W12/06
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Modern era is conquered by the fairly disruptive technology of Internet of Things (IoT) which has unimaginable capability, growth and impact. Devices using this technology demands incredible security and data privacy as same cloud connects several devices; hence there is possibility of data leakage. This invention presents the implementation of Representational State Transfer (REST) Application Programming Interface for IoT devices based on the concepts used in IoT technology which keeps record of events of the devices along with count of everything. These devices are connected to the cloud server utilizing the concept of middleware. But new applications using IoT in the cloud brings security threats for data privacy. Hence there is requirement of innovative system for securing innovative IoT devices which avoids hackers from entering the network via IoT devices along with securing transit of data into the cloud from the IoT devices. This invention provides the method of securing IoT devices connected to cloud and users by exposing them using REST API. Device data is primarily exposed using middleware via REST thereby hiding details acting as an interface between sensor data and the user.

No. of Pages : 13 No. of Claims : 6

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2020

(21) Application No.202041038731 A
(43) Publication Date : 02/10/2020

(54) Title of the invention : VIRTUAL VISION SYSTEM FOR VISUALLY IMPAIRED PEOPLE AND METHOD THEREOF

(51) International classification	:G05D0001020000, G08G0001040000, A61H0003060000, G08G0001160000, H04L0029080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Visually Impaired People (VIP) has to move in the highly dense society without the help of others. In real world situation, they have to overcome more obstacles, hurdles and traffic while they navigate indoor and outdoor. Even more sophisticated technology cannot aid those peoples for their convenience, navigation and utility. The virtual vision architecture is composed of different sub system. This architecture includes HOD system, TOD system, PLS, ALS, IMS and SRE. IMS consists of selenium web driver that is used to retrieve the latest information from various web servers. It is a new proposed method to communicate with the existing web server. A TOD system is capable of monitoring the moving objects that comes nearer at the backend of VIP. The proposed idea includes three methods for calculating the distance of the moving object. The speed is calculated from the distance. Based on the speed, the walking direction of the VIP is adjusted to avoid accident. Keywords : Head Obstacle Detection system (HOD), Positioning and Location System (PLS), Alerting and Notification System (ANS), Information Management System (IMS), Tail Obstacle Detection system (TOD), Recognizer Engine (SRE), Selenium

No. of Pages : 35 No. of Claims : 18

S.V. Jagadeeshwari
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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202041044397 A
(43) Publication Date : 23/10/2020

(54) Title of the invention : DEFENSE AMMUNITION TRACKING SYSTEM USING BLOCKCHAIN TECHNOLOGY

(51) International classification :H04L 9/32
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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5)Sathya A. R.
6)Dr.Devi. A
7)Dr.S.Balamurugan

(57) Abstract :
One of the major concerns for the government in terms of security is the safety of the citizens. We have come across many cases in which the individuals have access to the ammunition without having the required license. Inadequacy in the management of weapons, especially those which remain reserved is the major contributing factor. Individuals submit counterfeit documents to some third party dealers who help them in getting a fake arms license. That"s not all, no one knows whether the individuals who use the ammunition with the fake license have any criminal background at that time. The production of such reserved deteriorating weapons is creating a huge problem leading to an unsafe environment among the citizenry. In this chapter, we lay forward a model that helps to overcome these challenges with the help of blockchain technology. In our model, we will be providing a digital gun safe just like a bitcoin(BTC) wallet which stores each and every information about an individual securely and it helps us in identifying whether the person who has a weapon holds an original arms license or has a fake one and also checks whether the person has a previous criminal record on his name. Since blockchain is immutable and hackproof, this technology can be used to eliminate the above claims and improve the ownership, traceability of the weapon and keeps the records securely inside the digital safe. Although the use of blockchain technology has some constraints when a large number of records are to be stored inside the safe, itâ€™s properties can be used to improve the current scenario.

No. of Pages : 19 No. of Claims : 3

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/09/2020

(21) Application No.202041042280 A
(43) Publication Date : 09/10/2020

(54) Title of the invention : COMPUTER-IMPLEMENTED SYSTEM AND METHOD TO PERFORM STRUCTURAL OPTIMIZATION OF COMPOSITE PROPELLER BLADE

(51) International classification :B64C29/0033
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Exemplary embodiments of the present disclosure are directed towards a computer-implemented system to perform structural optimization of a composite ply arrangement of propeller blade, comprising a computing device comprising a structural optimization module configured to determine an optimized stacking sequence of composite propeller blades, the optimized stacking sequence obtained from the structural optimization module by performing design phases, whereby the design phases comprising a concept design synthesis phase, a design fine tuning phase, and a Ply stacking sequence optimization phase, the structural optimization module configured to incorporate one or more manufacturing constraints through the design phases. Fig. 1

No. of Pages : 61 No. of Claims : 14

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/07/2020

(21) Application No.202041032052 A
(43) Publication Date : 21/08/2020

(54) Title of the invention : AN INTELLIGENT MOBILE ALERT SYSTEM FOR RESERVOIR WATER LEVEL AND FLOW INDICATION INTEGRATED WITH GPS FOR FARMERS

(51) International classification :G01F 1/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Presently the websites are being used for giving information of only the reservoir level to the farmers as a whole. Apart, data like releasing of water from the reservoir is known by the farmers from other sources. The farmers not connected with the single unique platform. Thisissue has been sort out through the mobile application developed here.This mobile application integrated with the cloud data base, data transfer centre (DTC), Global Positioning System (GPS) through Internet of Things (IoT). The data such as water releasing time and quantity of water released is feeds at the data transfer centre and the same is transferred to the cloud at the fixed interval of time. The cloud also receives the exact location of the farmer™s cultivation field through their mobile phone and its GPS. The water reaching time and the quantity of water at their field is calculated through the specifically designed table which uses the parameters such as shutter opening time, quantity of water released and the distance. It also has the provision of alerting the farmers in advance if the rate of rise of flow rate of water is higher than certain level through text message or wake up call. This is possible by calculating the flow rate of water earlier than it reaches to the farmer™s location and hence the possibility of flood and its associated losses to the farmers shall be eliminated. This mobile application offers the unique platform to the farmers who closely connected with the particular reservoir for the updated and required information instantly and help them to plan their cultivation accordingly and enhance their crop production. Apart, it safeguards their life and livestock by providing flood alert on time.

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

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/09/2020

(21) Application No.202041041120 A
(43) Publication Date : 09/10/2020

(54) Title of the invention : AN AUTOMATED AND INTEGRATED MOBILE APP FOR HANDLING ROAD ACCIDENT AND EMERGENCY SITUATION SMARTLY

(51) International classification :B60Q1/30
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
AN AUTOMATED AND INTEGRATED MOBILE APP FOR HANDLING ROAD ACCIDENT AND EMERGENCY SITUATION SMARTLY ABSTRACT OF THE INVENTION Road transport is the primary mode of transport in India and so many accidents happens every day. Ambulance services are available all over the country for earlier diagnosis. Due to unavoidable circumstances in the present system, the people may lead to death before going for the first aid. This issue can be resolved by introducing an Integrated and Smart Mobile App which alarms the respective service provider as soon as possible and hence saves the human life. By means of using this App, any user can notify the nearby ambulance and hospital directly without an intermediate service provider. It eliminates the third party completely to minimize the ambulance ˜s time in reaching the accident zone. Further it also verifies the truthiness of incident through the accident™s zone image/video given by the user. Blood donors list with their name, address, phone number and their blood group is available to handle the patient™s critical situations.

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

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/09/2020

(21) Application No.202041042417 A
(43) Publication Date : 09/10/2020

(54) Title of the invention : AN IOT BASED HEALTH MONITORING SYSTEM

(51) International classification :A61B5/6817
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: Title: An IoT Based Health Monitoring System The present disclosure proposes an IoT based health monitoring system 100 which comprises a wearable health monitoring device 101 which comprises a power supply unit 102 that supplies energy to the wearable health monitoring device 101, a sensor unit 104 which is configured with plurality of sensors to collect health parameter of a patient, a microcontroller unit 103 which is configured to collect the detected health parameters from the sensor unit 104 and transmit the collected parameters for storage through internet, a remote server configured with a health processing and storing unit 105 that receives the health parameters from the microcontroller unit 103 through a wireless transmitter, stores and processes the parameters for further analysis and finally an external device 106 to access the stored and processed health parameters from the remote server. The wearable health monitoring device 101 incorporates GPS to locate the patient. The IoT based health monitoring system 100 allows remote access of the health information of the patient.

No. of Pages : 12 No. of Claims : 8

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/10/2020

(21) Application No.202041044609 A
(43) Publication Date : 30/10/2020

(54) Title of the invention : OPTIMIZATION OF CAR BUYING CRITERION USING MULTI-CLASS CLASSIFICATION MODEL

(51) International classification :G06K 9/62
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
People in modern world are looking for a lifestyle that is fast and easy. In the field of transportation, people have invented cars and these cars are almost seen to be owned by everyone and one is trying to purchase one. Each of these cars has different features and based on these features, people try to analyze the move towards purchasing it. Hence, in this research work, we build a classification model that classifies whether a customer is going to buy a car with specific features. This research work is consisting of four machine learning models with their result analysis. These classifying models are Gaussian Na¯ve Bayes, Decision Tree, Karnough Nearest Neighbors and Neural Networks. We also try finding the best hyper-parameter value to obtain the best result from these models. These results are used to compare the accuracies of every model and decide the best model to be used in real time prediction. Here, we are predicting whether a customer is going to buy a car or not buy a car with particular features available in it. Hence, for this prediction the best accuracy we get is 97.4% which is given by Decision Tree classifier. Also, the neural network gives around same accuracy for the prediction. Therefore, this Machine Learning model can be used by the firm whether a new car with specific features will be sold in good quantity or not or by a customer to know whether a particular car is bought by other customers as well.

No. of Pages : 19 No. of Claims : 3

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/02/2021

(21) Application No.202141006249 A
(43) Publication Date : 19/02/2021

(54) Title of the invention : FAULT DETECTION USING ARTIFICIAL INTELLIGENCE IN A TELECOMMUNICATION NETWORK

(51) International classification	:G06N0005040000, G06N0005020000, H04L0012240000, G06F0008200000, G06F0011220000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
To make a self-diagnosis of telecommunication networks, it is necessaiy to understand what is being misrepresented in these networks. This understanding makes it possible to acquire relevant knowledge to automatically solve the problem of reverse misinterpretation. Two main types of methods can be used to understand and predict the approximate cause of the observed alarms or spread the error approximately. Expert systems make laws or rules that best describe this event Artificial intelligence methods assume that an event can be understood if it can be recreated through modeling. In this study, it is a large probability modeling method that'facilitates fault transfer modeling on large-scale telecommunications networks. The development of a method for diagnosing a telecommunications network based on a model of this network is carried by applying a reasoning algorithm on the generic reconfigurable model in three layers for the automatic diagnosis of telecommunications networks. This model incorporates dynamic reconfiguration capabilities in order to automatically follow or adapt any changes to the topology and behavior of the network, also known as fault propagation in the context of network diagnostics.

No. of Pages : 17 No. of Claims : 3

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(53)

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :16/12/2020

(21) Application No.202031054680 A

(43) Publication Date : 05/02/2021

(54) Title of the invention : DISTRIBUTED LEDGER TECHNOLOGY IN THE CONSTRUCTION INDUSTRY USING CORDA

(51) International classification :H04W8/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The population of the entire world has been increasing steadily over the past decades. One of the most basic requirements for the survival of humans is a shelter that could be anything from a small hut to a luxurious skyscraper, ultimately giving the construction industry a major role in this process. In comparison to many other industries, the construction industry can be termed as one of the world most fragmented sectors due to the scattered and complex supply chain. Furthermore, this complexity moves a step higher while keeping track of the various factors involved, like the clients, consultants, architects, engineers, main contractors, subcontractors, material suppliers, etc. Therefore, a massive amount of effort and resources are required for carrying out different activities like keeping track of the work progress, schedule, costs, and payments. Also, the complex supply chain of the globally manufactured construction products has to be managed for the sake of meeting the quality requirements and customer satisfaction. But the lack of accountability in the construction industry sometimes leads to various types of faults, delays, and even accidents at some stages. Keeping these main points in mind, this paper proposes a solution to this problem with the help of Corda, a distributed ledger platform for permissioned networks, inspired by blockchain technology. This helps in maintaining transparency amongst the actors involved in this industry, thus preventing any form of miscommunication.

No. of Pages : 27 No. of Claims : 4

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/12/2020

(21) Application No.202041055178 A
(43) Publication Date : 25/12/2020

(54) Title of the invention : A GENERIC FRAMEWORK FOR SOCIAL FEEDBACK ANALYSIS FOR ORGANIZATIONAL GROWTH

(51) International classification :G06Q 50/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention is pertaining to social feedback analysis based on machine learning and Natural Language Processing (NLP) techniques equipped with novel pre-processing and sentiment analysis. The invention helps enterprises to have their own data warehouse in AWS cloud using RedShift database. Then it enables the enterprise to have both traditional and social feedback to be mapped to the data warehouse. Thus it helps enterprises to have social feedback on products and services from time to time. This will help in comprehending business intelligence needed to take actions necessary for organizational growth. The invention has provision for novel pre-processing with multiple procedures that act on given tweets data. Once pre-processing is done, the data quality is greatly improved and it is ready for social feedback analysis through sentiment analysis. The machine learning approach has two phases. In the training phase and testing phase also pre-processing is involved for quality in analysis. After training process, the generated model helps in prediction of sentiments and there is provision for ranking of the products or services based on social feedback. Thus the data in RedShift database is updated to reflect social feedback as well. This will help enterprises or any organisations or governments grow in business intelligence and take expert decisions.

No. of Pages : 15 No. of Claims : 7

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/07/2020

(21) Application No.202041030007 A
(43) Publication Date : 31/07/2020

(54) Title of the invention : A SCALABLE AND ENERGY-EFFICIENT FAULT TOLERANT NETWORK-ON-CHIP•

(51) International classification	:G06F 15/78	(71)**Name of Applicant :** **1)ANNA ESWARA KUMAR** Address of Applicant :29-922/1, 4th Line, Kothapeta, vinukonda, Guntur District, Andhra Pradesh, 522647. Andhra Pradesh India **2)B Naresh Kumar Reddy**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(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	

(57) Abstract :
EEFTNoC Core mapping evidently illuminated here. Initialize the mapped and unmapped vertices; mapping region is selected whose value corresponds to the smallest value when NAD and PVR values are considered (whichever is minimum). It reduces the communication energy and failure probability. Spare core can be placed in the middle of mapping region, which has free and non-failed core. A vertex with the maximum communication with neighbors is selected and the tile txy is rst selected which should be a corner of the mapping region and have free and non-failed core. The vertex to the rst selected tile is mapped, if the tile is already mapped, then it is updated as ˜busy™. Simultaneously the mapped and unmapped vertex sets are also updated. Other vertices (the vertex with maximum communication given higher priority) are mapped on the available core, which should be a neighbor of the spare core. Accordingly this procedure is repeated until all vertices are mapped to their processing cores. All vertices can be mapped in the mapping region with minimum TWCA. Then, we can obtain energy-efficient mapping. If faults occur at any core, faulty core tasks migrate to the spare core. After completion of mapping, every free core acts as a spare core, but spare cores can be assigned on the basis of faulty cores. If ˜N™faulty cores are present in a NoC, we need ˜N™spare cores. The proposed EEFTNoC algorithm has to implement on Kintex-7 (KC705) FPGA board.

No. of Pages : 8 No. of Claims : 4

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/06/2021

(21) Application No.202121028826 A
(43) Publication Date : 30/07/2021

(54) Title of the invention : IOT AND CLOUD BASED VIRAL DETECTOR DEVICE MICROCA • : ADAPTING CORONA VIRUS AND OTHER DEADLY PATHOGENS

(51) International classification	:A61L0002000000, G16H0040200000, A41D0031300000, A61B0090400000, G16H0050800000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
ABSTRACT IOT AND CLOUD BASED VIRAL DETECTOR DEVICE MICROCA • : ADAPTING CORONA VIRUS AND OTHER DEADLY PATHOGENS The invention relates to the field of lateral glide immunoassays. More especially, the discovery pertains to a lateral float immunoassay that hastily detects viral and bacterial infection when the person is subjected to hand scan using microca device which gets the information as a UV scanned image. These images are send to the microcontroller and processed. The results are compared with the database integrated in the cloud to predict the percentage of infection. The infection results are send to the IoT to produce data set of the infected person and saved in the computer. The present COVID-19 pandemic situation has drifting the entire globe and deliver a message to uphold personal hygiene to battle this deadly pathogen and effective survival. Each day masses of public are getting dead due to this CORONA virus, which is uplifting mainly due to dearth of sanitization and exposure to unsanitary localities. In this invention brought up with the novel prototype model of ˜Microca • -A germ detector device™. It is perception medical and clinic settings, which has multipotent germ detection landscapes installed like Ultra Violet lights to instantly detect the germs existing on the hands or any other body parts which is targeted under this device. Moreover, ˜Microca™ is holding a germ detection cameras; which can capture different parts of the body, for instance like nails and based to its color, it can signifies the persons health condition. In fixing the prototype of ˜Microca™, we have dynamically operated and trained the medical database to visualize its actual bid and accuracy percentage. Hence the skilled data can assist in detecting higher accuracy results in the medical prototypes likes ˜Microca™. It is a tiny portable instrument like ˜Microca™ can aid in upholding sterile and higher hygiene settings in hospitals, and other regions were there is higher exposure of this deadly pathogen. Long running of this device ˜Microca™ can aid in combating the CORONA virus and other deadly diseases that are causing diseases through one human to another.

No. of Pages : 28 No. of Claims : 7

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THE ICFAI FOUNDATION FOR HIGHER EDUCATION
Deemed-to-be-University Under Section 3 of the UGC ACT,1956)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/06/2021

(21) Application No.202141026215 A
(43) Publication Date : 02/07/2021

57

(54) Title of the invention : IOT AND CLOUD BASED AGRICULTURAL MONITORING SYSTEM

(51) International classification	:A01M0001020000, A01M0001100000, G06Q0050020000, A01M0001200000, H04L0029080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
ABSTRACT IOT AND CLOUD BASED AGRICULTURAL MONITORING SYSTEM In this present invention, a novel IoT-based device for the programmed sensing and recording of different crop pests damages the agriculture field in various settings. An observing device for detecting diversified pests in the agriculture field that complies with the context of different crop fields of agriculture settings is compatible with the emerging discipline of the Internet of Things (IoT). We consider it can find its place in every field, farms under different environmental settings of agriculture field. This portable box-shaped instrument attracts other targeted insect pests, intellects the pest movement, and robotically takes a snapshot of the integral space inside the box. This agriculture-based insect e-trap comprises strong attractants (pheromone and food) to upsurge the insect arrest efficiency and insect traps on its gluey floor. The e-device transmits the primary optoelectronic radars to monitor all trap entries. As the pest enters, it intrudes the ultraviolet light source. It elicits a detection event, which further snaps a picture, and a time-stamp was fixed before sending the photo through the Wi-Fi to an approved stakeholder. The device can be integrated seamlessly into different agriculture settings and functions unremarkably to farmer's activity. Thus the present invention on various insect pests and, depending on the insect species, can reach an exposure accuracy between 90-95% ranges.

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

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/08/2021

(21) Application No.202141038074 A
(43) Publication Date : 03/09/2021

58

(54) Title of the invention : SECURE AND AUTOMATED DRIVING INSPECTORPOWERED BY ARDUINO RASPBERRY Pi USING DEEP LEARNING

(51) International classification	:G09B0019160000, G07C0005080000, B60W0040090000, G09B0009042000, F23G0007060000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The product will be placed in the car that will read the car™s diagnostic information such as acceleration, clutch, gear and braking. During the driving session, data from one or more sensors will be used to monitor driving test events. Each driving session and its related weights will be described in detail at these events. These weights are based on a rating system of the driving as well as the amount of time spent during driving. By delivering a driver feedback ranking, a driving session report will be generated.. Analyzed report of the tagged driver will be converted to performance grading. This result will help in approval of the license for the tagged driver. After the completion of the test, Inspector is to update the database at the RTO office. This is a crucial stage because hackers may try to modify the results. The project provides excellent level of security while transferring results to the RTO. This result will help in approval of the license for the tagged driver. After the completion of the test, Inspector is to update the database at the RTO office.

No. of Pages : 20 No. of Claims : 5

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THE ICFAI FOUNDATION FOR HIGHER EDUCATION
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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :29/09/2021

(21) Application No.202141044306 A

(43) Publication Date : 15/10/2021

(54) Title of the invention : RESEARCH ON CUSTOMER EXPECTATIONS, EXPERIENCE, AND SATISFACTION WITH SERVICES PROVIDED USING THE SIX SIGMA TECHNIQUE.

(51) International classification :G06F 3/039
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Due to the entry of numerous automobile companies, the Indian automobile industry faces stiff competition. As a result, customer satisfaction has become a top priority for businesses of all sizes. Measures how likely it is that a product or service will be produced with no defects using the six sigma method. As a result of Six Sigma, a new standard for measuring defects has been introduced, referred to as Defects per Million Opportunities (DPMO). To find out how satisfied two-wheeler users are with their purchases, the researchers set out to determine the extent to which they preferred bikes. A self-prepared questionnaire was used in conjunction with the convenience sampling method to gather data. SPSS and the Six Sigma tool were used to analyze the data. We now have the outcome, along with an explanation of how it was reached

No. of Pages : 12 No. of Claims : 6

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/04/2019

(21) Application No.201941016569 A

(43) Publication Date : 13/09/2019

(54) Title of the invention : AN INTEGRATED 555 TIMER IC KIT

(51) International classification :H01H47/26
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure discloses an integrated 555 timer ICkitwhich is used to connect a variety of applicationssuch as darkness control lighting source, lighting control system, fire alarm, security system, claps operating device, stop watchand thereof. The integrated 555 timer ICkit comprises of anIC 555 timer chip, an application input means, a switching circuit, a plurality of sensing means and an output generating means.The IC 555 timer chip is extremely robust and a stable 8 pin device that can be operated either as a mono stable, bi stable or a stable multi vibrator.Such an integrated 555 timer ICkit is incorporated with a switching circuitwhich aids in switching between the modes of the IC 555 timer when essential. The integrated 555 timer IC kit provides output based on connected application.

No. of Pages : 20 No. of Claims : 6

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22

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/12/2019

(21) Application No.201941052527 A

(43) Publication Date : 03/01/2020

(54) Title of the invention : DESIGN AND FABRICATION OF ANDROID BASED HYDRAULIC JACK

(51) International classification :B66F0003460000,B66F0005040000,B66F0007120000,B66F0003240000,B60S0009120000

(31) Priority Document No :NA

(32) Priority Date :NA

(33) Name of priority country :NA

(86) International Application No :NA

Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA

Filing Date :NA

(62) Divisional to Application Number :NA

Filing Date :NA

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(57) Abstract :
Design of the hydraulic jack is fabricated consisting of base system, system of gears and mechanism of crank controlled by android by Bluetooth connection. The motor powering the prototype works based on the 12V battery obtained through car adapted from a tractor. The mechanism of lifting is done by the motor with the gear system. The valve of the hydraulic jack is locked just by pressing the remote control for lifting a equipment. The lifting operation starts once the remote is pressed again whose height is adjusted based on the release valve. Physical effort for lifting the vehicle is the current problem by the hydraulic jacks. Conventional hydraulic jack requires more energy for operating which cannot be operated in uneven surface particularly by women. The gearing ratio and the torque for developing the invention are analyzed for incorporating remotely by android app. Testing is carried out which determines the effectiveness of lifting loads one ton, two ton, three ton, four ton and five ton. The drudgery is overcome by the design protecting from injuries and musculoskeletal disorders increasing the timeliness with the farming efficiency perform maintenance work with reduced size.

No. of Pages : 13 No. of Claims : 6

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23

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/08/2019

(21) Application No.201941032820 A
(43) Publication Date : 23/08/2019

(54) Title of the invention : FUZZY LOGIC BASED SYSTEM OF INTELLIGENT ELECTRIC SOLAR DYER FOR FRUITS

(51) International classification :A23N12/08
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention is related to a system of intelligent electric solar dyer for fruits using fuzzy logic based algorithm processed by at least one processor of a central processing unit of the system. The system comprises a photovoltaic system to produce solar radiation system, & an electric generator system, used for direct supply of the electric to the system. The central processing units perform the dying function according to the type of the fruits and with efficient use of the solar energy and electric energy.

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

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/10/2019

(21) Application No.201941042929 A
(43) Publication Date : 25/10/2019

(54) Title of the invention : METHOD FOR DATA TRANSMISSION

(51) International classification :G06Q20/20
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a method for data transmission, wherein the method comprising the steps of exchanging a data from a first node to second node, wherein the data comprises of vector, free buffer size and energy level, comparing the energy level of the first node with the second node upon receiving the data from the first node, copying the received data for transmission, wherein the data is copied on a basis of the free buffer size available in the second node, transmitting the copied data to a transmit list if energy level and buffer size of the second node is higher than the first node and broadcasting the copied data residing in the transmit list to reduce an energy consumption of the first and second node and prolong the life expectancy of a network.

No. of Pages : 11 No. of Claims : 7

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HYDERABAD

25

(12) PATENT APPLICATION PUBLICATION

(21) Application No.201941053267 A

(19) INDIA

(22) Date of filing of Application :21/12/2019

(43) Publication Date : 27/12/2019

(54) Title of the invention : COMPUTER IMPLEMENTED METHOD FOR FINGERPRINT RECOGNITION USING FILTERING TECHNIQUES

(51) International classification :G06K0009000000,G06Q0030020000,G06F0016400000,H01M0004587000,H01L0023310000

(31) Priority Document No :NA

(32) Priority Date :NA

(33) Name of priority country :NA

(86) International Application No :PCT// Filing Date :01/01/1900

(87) International Publication No : NA

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

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

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(57) Abstract :
The present invention relates to computer implemented method for fingerprint recognition using filtering techniques. The objective of the present invention is to overcome the inadequacies of the prior arts in computer implemented method for fingerprint recognition using filtering techniques. The invention discloses some filters techniques applied which shows the opportunity of enhancing the excellence of the fingerprint recognition system.

No. of Pages : 19 No. of Claims : 5

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ICFAI FOUNDATION FOR HIGHER EDUCATION ★ HYDERABAD

26

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2019

(21) Application No.201941054851 A
(43) Publication Date : 03/01/2020

(54) Title of the invention : SMART WEARABLE REMINDER DEVICE

(51) International classification	:G04F 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
Smart Wearable Reminder Device The present disclosure proposes a smart wearable reminder device. The smart wearable reminder device is incorporated with a smart reminder system. The smart reminder system 100 comprises a voice recognition means 101, a processing means 102, a synchronizing means 103, a reminder generating means 104, a positioning means 105, a device coordinating means 106, and a storage means 107. The smart wearable reminder device with an improved system coordinates with nearby smart electronic devices to notify or alert the user customizable reminder message at user customizable time. The system reminds the reminder messages based on the user™s priority. The system stores various parameters of the user™s voice for recognition to avoid others from manipulating the authentication. The system automatically sorts the stored reminder messages based on metadata and reminds the user about the information correspondingly either in audio or display message.

No. of Pages : 18 No. of Claims : 10

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HYDERABAD ★ ICFAI FOUNDATION FOR HIGHER EDUCATION

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :14/05/2020

(21) Application No.202041020290 A

(43) Publication Date : 29/05/2020

(54) Title of the invention : EFFECTIVE MANAGEMENT ANALYSIS OF SIGNAL COVERAGE AND NOVEL DESIGN OF TRIANGULAR PATCH ANTENNA FOR QUASI ELLIPTIC BAND PASS RESPONSE

(51) International classification	:H01Q0009040000, H01Q0019000000, H01Q0001380000, H04L0007027000, H01Q0013020000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Effective Management Analysis of Signal Coverage and Novel Design of Triangular Patch Antenna for Quasi Elliptic Band Pass Response Today the usage of wireless network is quite common in all part of the world. The effective management of radio signals is very essential to provide the optimized coverage over the service area. The radiation level of the electromagnetic signal from the wireless network need not be equal in all directions. Based on the geographic location, people density, etc., the radiation pattern of the wireless network signal has to be controlled. The radiation pattern can be controlled through proper management analysis of signals by considering the factors such as people density, geographical location, etc. For the effective management of radiation pattern, designing different type of antenna is required for different places. This invention proposed an Omni directional low profile patch antenna with the response of the filter investigated. A probe at the centre of the antenna feeds axially the triangular patch antenna which excites the dominant modes of the electromagnetic signal. The conventional circular patch antenna comparatively requires more size than the proposed triangular patch antenna which can generate null radiation at the upper band edge. Merging of the two nodes in the patch is done by introducing a series of shorting vias along with a ring slot which in turn enhances the bandwidth of the passband of the antenna. Simultaneous combination of the two elements generates null radiation at the lower band edge which results in obtaining compact filtering with quasi elliptic bandpass response without the involvement of complex specific circuits for filtering. The prototype has comparatively more impedance bandwidth with an average gain suppressing the out of band signals within the lower and upper stop band. The Most Illustrative Drawing: FIG. 1

No. of Pages : 0 No. of Claims : 0

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ICFAI FOUNDATION FOR HIGHER EDUCATION HYDERABAD

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(12) PATENT APPLICATION PUBLICATION
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(22) Date of filing of Application :14/05/2020

(21) Application No.202041020271 A
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(54) Title of the invention : GUI BASED EYE TRACKING FOR DISABLED PEOPLE USING VIOLA-JONES ALGORITHM AND HOUGH TRANSFORM

(51) International classification	:G06K0009000000, A61B0003113000, A61F0009007000, G06K0009460000, G06T0007246000
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(57) Abstract :
In today™s world, machine monitoring and tracking plays an important role in managing the maintenance and operability activities. With the help of these machines we are now able to track, control and make use of various features and aspects of variety of issues and problems. The goal of our research paper is to make a system that is used to enhance the control over surroundings and improve interaction with their vernacular day to day tasks for the disabled people. This will be done by tracking their eye movements and the novelty is that we have proposed a GUI system design that will make it easier for our targeted users. This unique Human Interface Design (HCI) approach will help controlling the whole system just by using the eyes, so people who have a very limited body movement, or having lost motor control of their body, inability to move their limbs, mute and deaf, can, with this breakthrough GUI and tracking, use it without any external help. This tracking of the eye is done by finding the position of the eyeball relative to the lacrimal caruncle and the other end of the eye. Which is done by using both Viola Jones Algorithm that makes use of Haar transform to track facial features and ultimately eye, and Hough transform that makes helps eyes in tracking the eyeball movement. For Disabled people it™s very difficult to perform tasks both in physical and technical fields, their inability to control these smart devices led us to create a solution that will help them use common/general features of these devices by movement of their eyes. The most illustrative drawing: FIG. 1.

No. of Pages : 21 No. of Claims : 5

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(21) Application No.202041005255 A

(19) INDIA

(22) Date of filing of Application :06/02/2020

(43) Publication Date : 14/02/2020

(54) Title of the invention : REAL-TIME MONITORING SYSTEM FOR COMPRESSED GAS ARTIFICIAL LIFT & METHOD THEREOF

(51) International classification :E21B0043120000,E21B0047000000,G01N0033000000,A61M0016080000,G01M0005000000

(31) Priority Document No :NA

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Filing Date :NA

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8)NARAYAN PANDURANG KHARAJE

(57) Abstract :

Present invention is related to a system for real-time monitoring of compressed gas artificial lift. The objective of the present invention to solve problems and adequacies in the prior art related to real-time monitoring of compressed gas artificial lift. The system for real-time monitoring of natural gas artificial lift comprises an artificial lift module, a under-ground monitoring module and a central unit.

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

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/01/2020

(21) Application No.202041003745 A

(43) Publication Date : 07/02/2020

(54) Title of the invention : FRAUD RESISTANT CROWDFUNDING SYSTEM USING ETHEREUM BLOCKCHAIN

(51) International classification :H04L0009320000,H04L0009060000,G06Q0020060000,H04L0029080000,G06Q0020380000

(31) Priority Document No :NA

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(33) Name of priority country :NA

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(57) Abstract :

The Blockchain is a distributed, decentralized and immutable database system built on top of P2P network through which digital assets can be transferred securely from all over the world. After the successful implementation of Blockchain in Bitcoin, many applications and platforms evolved for the development of Blockchain technology. Ethereum is one of the most widely used Blockchain platforms for developing the Dapps. In this invention, we present the specifics of functioning, drawbacks and problems in the current crowdfunding platforms like Kickstarter. Using Ethereum and the concept of smart contracts, the crowdfunding platforms can be implemented in a secure and profound way without being afraid of the fraudulent spending of the money raised through the funding.

No. of Pages : 18 No. of Claims : 3

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(21) Application No.202041003811 A

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(22) Date of filing of Application :28/01/2020

(43) Publication Date : 07/02/2020

(54) Title of the invention : PERMISSIONED BLOCKCHAIN NETWORKS USING HYPERLEDGER FABRIC

(51) International classification :H04L0009320000,H04L0029060000,H04L0029080000,G06Q0020380000,G06Q0020060000

(31) Priority Document No :NA

(32) Priority Date :NA

(33) Name of priority country :NA

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(87) International Publication No : NA

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(62) Divisional to Application Number :NA

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(57) Abstract :

After the proliferation of bitcoin, the underneath concept evolved is called Blockchain. The little Blockchain technology is successfully implemented in some applications and platforms, where most of them are permission less and public Blockchain. In permission less Blockchain network, anyone can join and access the network while participating in all kinds of transactions within the network short of any restrictions. Generally, in large- or small-scale organisations permission less network is not suitable. Hence, the organizations require permissioned Blockchain to have more control and privacy over the network. One such platform allowing us to build such enterprise-grade permissioned Blockchain is Hyperledger Fabric. This invention deals about Hyperledger Fabric, its architecture and the procedure to build the Hyperledger Fabric network using docker container technology for an industry use case which would involve multiple actors/organizations who want to form a permissioned network. This invention also discusses about developing the chain code (smart contract) for Hyperledger fabric using node js, and building a REST API to interact with the Fabric network using Fabric Node SDK.

No. of Pages : 19 No. of Claims : 3

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(19) INDIA
(22) Date of filing of Application :30/04/2020

(21) Application No.202041018617 A
(43) Publication Date : 05/06/2020

(54) Title of the invention : HEALTH RECORD TRACKING IN CLOUD ENVIRONMENT USING BLOCKCHAIN TECHNOLOGY

(51) International classification	:G16H0010600000, H04L0009320000, G06F0021620000, H04L0029060000, H04L0009080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Current online healthcare services Electronic health records (EHR) / Electronic Medical Records (EMR) play an important role in the store, distribution and maintain patient™s medical data. Implementing the EHR system in a cloud environment offers many options, including ubiquitous access, elastic computing resources, high-grade fault tolerance, and differentiation with other systems. Cloud storage solves the problem of storing complex medical data in rest mode, while Cloud Service Providers (CSP) in transit is treated as non-covered units. Therefore, the CSP does not provide a guarantee for securely access EHRs data between authorized users in a cloud environment. Therefore, security and privacy become major barriers to sharing EHRs data in cloud environments. To overcome these problems, we have introduced blockchain technology in cloud environments to securely transfer EHRs data between authorized entities. Blockchain technology provides a data ledger-based feature that can be distributed to the entire registered user in the network. This approach is a tamper-proof mechanism because every health transaction in the blockchain is stored as hash values. It can guarantee the security and privacy of e-health information in the cloud. The construction of this innovative advancement coordinating cryptographic components gives a safe and productive system for efficient storage, transfer, and use of electronic health records in cloud environments.

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

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(19) INDIA
(22) Date of filing of Application :01/05/2020

(21) Application No.202041018673 A
(43) Publication Date : 05/06/2020

(54) Title of the invention : COPYRIGHT PROTECTION SYSTEM BASED ON USING BLOCKCHAIN TECHNOLOGY

(51) International classification	:H04L0009320000, G06Q0050180000, G06F0021100000, H04L0009060000, G06F0008100000
(31) Priority Document No	:NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
With the advancement in the development of blockchain technology, various practical applications and research directions of blockchain technology have been explored. With the unique features of blockchain distributed, decentralized, immutability, transparency and traceability, the world is increasingly adopting the blockchain technology to solve various real-life problems. Blockchain has already played its crucial role in medical, financial, sales and other sectors. In this chapter, we propose a copyright protection system based on blockchain technology, to eliminate copyright infringement, in which all created work of the creators is continuously recorded in a distributed ledger and with the help of smart contracts, ownership transfer and licensing of the created work for use can be carried out effortlessly through association with smart contracts. Moreover, the provenance feature of blockchain ensures tracing of ownership transfer histories which in turn ensures system transparency and traceability. This invention covers in detail about blockchain, existing copyright system and how blockchain can be implemented in this system effectively. A solution model is designed for the system along with the explanation of the procedure to build the system.

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

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(34)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/05/2020

(21) Application No.202041018639 A
(43) Publication Date : 05/06/2020

(54) Title of the invention : MEDICAL SUPPLY CHAIN TO TRACK COUNTERFEIT DRUGS USING BLOCKCHAIN TECHNOLOGY

(51) International classification	:H04L0009320000, G06Q0010060000, G06Q0010080000, A61G0012000000, A61L0029080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(62) Divisional to Application Number	:NA
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(57) Abstract :
Without a proper mechanism to track and authenticate drugs, both stakeholders and consumers experience problems. Stakeholders become incapable of optimizing their production and storage as they are unable to analyze the demands. Likewise, the consumer remains suspicious about the authenticity of the drug. Although, the disputes caused due to this unseen journey of medicine can be solved by adopting a medical supply chain. A medical supply chain promotes the updating of medicine status at each checkpoint. Currently, in the market, medical supply chains are present, but they are centralized. Typically, a centralized medical supply chain is tedious and expensive to maintain, it does not provide adequate features to analyze the market, and above all, it brands merely a certificate to prove the authenticity of the drug. However, by using the blockchain platform, the medical supply chain problems can be solved efficiently. This invention explains the blockchain technology and how it works, at the same time, observes how it can help to maintain medical supply chain records while maintaining ease and trust. Moreover, the blockchain platforms and their dependencies are explained. The implementation and design of the medical supply chain on a blockchain is performed using smart contracts, Web3.js library, and JavaScript. Furthermore, the system is tested on both a local network, using Truffle Suit, and Rinkeby test network.

No. of Pages : 18 No. of Claims : 3

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/05/2020

(21) Application No.202041018622 A
(43) Publication Date : 05/06/2020

(54) Title of the invention : SYSTEM AND METHOD FOR LAND REGISTRY USING BLOCKCHAIN TECHNOLOGY

(51) International classification	:H04L0009320000, G06Q0020400000, G06Q0020100000, G06Q0020380000, G06Q0020040000
(31) Priority Document No	:NA
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(57) Abstract :
In today™s scenario many news related to counterfeit land titles, fraud land registry, delay in ownership transfer, involvement of government officers in fraudulent activities are frequently being heard. However, this clearly depicts that the existing land registry system is not efficient to provide security and timely settlement of transaction between the seller and buyer. In order to solve this problem we proposed a blockchain based land registry system in this chapter. The specialty and popularity of blockchain technology is its transparency and security. Blockchain is being inculcated with the trait of persistency, immutability, decentralization. It ascent to new opportunity of efficiency & cost saving. It can provide right framing for digital asset, online payment, & transfer of remittance. Additional to this it can check upon black money laundering. Enterprise that can use blockchain technology can gain faith of consumer. In this invention, we proposed a decentralized application (dApp). In particular, for creating and deploying the smart contract we used Ethereum network. The deployed contracts are interacted through frontend web pages. React is used for the development of web page. For server and routing purposes, Next.js is used. Finally, the results and analysis show that our proposed model is efficient and viable.

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

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(21) Application No.202041018768 A
(43) Publication Date : 05/06/2020

(54) Title of the invention : SECURE EVENT TICKET BOOKING USING BLOCKCHAIN TECHNOLOGY

(51) International classification	:H04L0009320000, H04L0029060000, G06Q0020060000, G06N0007000000, G06Q0030060000
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(57) Abstract :
Over the past years, it has been noticed that there is a rapid growth in the number of events being conducted across the globe and the entry to these events is monitored through a system of tickets. One of the major challenges faced by the event organizers regarding the system of events is the duplication and reselling of these tickets at a cost higher than the original cost. It has become easier for the conmen to carry out this process as most of the tickets are purchased through various online platforms. Therefore, it is important to initiate an authentic system to make sure that there won't be any tampering of the ticket. In this chapter, we put forth a model through which this challenge can be overcome by using a technological solution based on blockchain technology. In our model, an online platform is engineered where the digital tickets are linked to the purchasers with the help of their mobile numbers. All the events are saved in a ledger, on the basis of handling variance and tracking of the system. In the interest of various characteristics like decentralization, transparency, integrity, and immutability, blockchain can be used excellently to eliminate the above challenges and improve the proof of ownership, making the tickets tamper-proof. However, the usage of blockchain technology brings some constraints to our model when it comes to a large population.

No. of Pages : 17 No. of Claims : 3

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(22) Date of filing of Application :02/05/2020

(21) Application No.202041018785 A
(43) Publication Date : 05/06/2020

(54) Title of the invention : MODEL BASED HUMAN FACES GENERATION USING GENERATIVE ADVERSARIAL NETWORKS

(51) International classification	:G06K0009000000, G06N0020000000, G06T0017200000, G06T0007246000, G06T0005000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(57) Abstract :
Every human being has unique face. These may vary with lot of details from person to person. Whereas, in twins these differences are very less in order to be noticed. Face also changes with age. Hence, in this research, we are working on building a Generative Adversarial Network model that is going to generate the faces of people. And for this generation, the type of GANs being used is Deep Convoluted (DCGANs). This generation is based on the training done using the images available as dataset that is being provided to the model. The data in dataset is passed through a series of modifications called as pre-processing. This model is basically going to be consisting of three important segments called as Generator, Discriminator and loss function optimization with training of these sub models. The results are improvised using improvement analysis using the loss function. The model trained is the generator that is going to generate an image of a face later it is going to be fed to the discriminator. The discriminator is going to verify whether the image is fake or real and based on this result analysis the generator is going to improve in its next iteration using the dataset image. The final output is a generated face image that is so real to be discriminated between fake and realistic face image

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

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(19) INDIA
(22) Date of filing of Application :23/04/2020

(21) Application No.202041017417 A
(43) Publication Date : 05/06/2020

(54) Title of the invention : DESIGN FOR SOLAR PANEL CLEANING SYSTEM USING SPA CONCEPT

(51) International classification :H02J0003380000,H02S0050000000,H02J0007350000,F24S0030000000,H02S0040440000
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(57) Abstract :
Renewable energy is the need of the current situation, hence has growing interest such as photovoltaic energy based on SPA technique. Focus is due to the wide awareness created towards environment along with higher cost of the conventional energy. Efficient maintenance of photovoltaic panels has to be done for the system to work in a significant way. This invention proposes SPA technique for the maintenance of the photovoltaic panels which involves smart method of maintenance involving three phases. These three phases are mapped in a technical way such that maximum power is generated from the solar energy. In the system of photovoltaic energy, positioning of the photovoltaic cells is such that they have sunlight exposure for transforming the energy. The energy is transformed by flow of electrons in the photovoltaic cells from one layer of the semiconductor device to other layer. Maximum efficiency is obtained from the photovoltaic cells using SPA technique without any loss of energy. The three phases being sensing, planning and acting which are implemented in a controlled way for providing the best result than the other products in the current era.

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

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/06/2020

(21) Application No.202041024955 A
(43) Publication Date : 26/06/2020

(54) Title of the invention : MIND-CONTROLLED DRONE: USING BRAINWAVES AND DEEP LEARNING TO CONTROL DRONE THROUGH THOUGHTS

(51) International classification	:B64C 39/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
Disclosed herein is an unmanned aerial system (UAS) interfaced with a Brain Computer Interface (BCI) configured to control and maneuver a drone (1). The system comprises an electroencephalogram (EEG) device (2) operably connected to a receiving device (3) which is configured to receive the signals from the EEG device (2). The receiving device (3) comprises a thought-Motion Mapping Algorithm implementation unit (42) to control the drone (1) based on the recorded electroencephalogram signal. The system efficiently and effectively uses brainwaves and deep learning to control drone through thoughts. In the existing prior art, drones needed trained pilots to fly. The disclosed system removes the need for training and it just requires active thinking as input to control the movement of the drone. The invention is a low power plug and play system and it can be used by in military warfare, physically handicapped persons and also for disaster management. Figure 1.

No. of Pages : 18 No. of Claims : 10

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/06/2020

(21) Application No.202041026841 A
(43) Publication Date : 10/07/2020

(54) Title of the invention : EMERGENCY NOTIFICATION SYSTEMS FOR USE WITH FOOTWEAR FOR USER™S SAFETY

(51) International classification	:A61B 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
Disclosed is an emergency notification system (100) for use with footwear (202) for users safety that includes a piezoelectric sensor (102), a particle cellular device (104), a microcontroller, and an antenna (106). The piezoelectric sensor (102) measures changes in pressure, acceleration, and force on receiving pressure and force exerted from foot in a predefined rhythmic pattern. The piezoelectric sensor (102) converts the measured changes into electrical data. The particle cellular device (104) captures geo-coordinate. The microcontroller processes the electrical data to identify that the predefined rhythmic pattern received from the piezoelectric sensor (102) is the same as a stored rhythmic pattern. The antenna (106) transmits the captured the geo-coordinate of the user to the particle cloud (204) with over the air (OTA) interface for tracking a location of the user when the microcontroller identifies a similarity in the predefined rhythmic pattern and the stored rhythmic pattern. The particle cloud (204) transmits the captured geo-coordinate to one or more computing devices. The most illustrative drawing: FIG. 1.

No. of Pages : 26 No. of Claims : 10

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(11)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/06/2019

(21) Application No.201941023480 A
(43) Publication Date : 02/08/2019

(54) Title of the invention : INTELLIGENT PSO-FUZZY LOGIC BASED DC MOTOR CONTROL SYSTEM AND METHOD THEREOF

(51) International classification :H04N21/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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7)Dr. T. V. Ramana

(57) Abstract :
The present invention present an intelligent PSO based DC motor control System and method thereof. The system for intelligent control of a DC motor, comprises a PID controller, and Particle Swarm Optimization Control unit, a PSO tuning algorithm & fuzzy logic control unit. The present system and method disclosed novel & efficient control techniques with using PSO algorithm and fuzzy logic techniques for DC motor control using a PID controller with solving problems of efficient control the prior arts Refer to Figure 2.

No. of Pages : 22 No. of Claims : 3

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(12)

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :23/06/2019

(21) Application No.201941024901 A

(43) Publication Date : 28/06/2019

(54) Title of the invention : ARTIFICIAL INTELLIGENCE BASED SYSTEM AND METHOD TO DIAGNOSE PARKINSON™S DISEASE

(51) International classification	:G16H50/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
Parkinson™s disease (PD) is prevalent all over the world and the amount of research carried out so far is not sufficient to precisely diagnose the disease in the early stages of incidence. In this context, a novel kernel based chaos optimization algorithm hybridizing a chaotic firefly algorithm (CFA) with kernel based Na¯ve Bayes (KNB) algorithm is proposed for early detection of PD employing a voice measurement dataset collected from UC Irvine Machine Learning Repository. The dynamics of chaos optimization algorithm will enhance the firefly algorithm by introducing six types of chaotic maps which will increase the global searching capability and efficiency of CFA. The chaotic maps will initialize the population of fireflies and update the constant value of absorption coefficient so as to increase the diversity of populations and improve the search process to achieve global optima avoiding the local optima. To select the discriminative features from the search process, non-parametric kernel density estimation is used as a learning tool for the Bayesian classifier for evaluating the predictive potential of the features from four different perspectives such as size of the feature subset, classification accuracy, stability, and generalization of the feature set. The simulated results showed that logistic based CFA-KNB model outperformed other five chaotic map based CFA-KNB models. In this study, the generalization and stability of the predictive model is established by computing the model with four well-known representative classifiers viz., Na¯ve Bayes classifier, Radial Basis classifier, k-Nearest Neighbor, and Decision tree in a stratified 10-fold cross-validation scheme. By finding appropriate chaotic maps, the proposed model could able to assist the clinicians as a decision making tool for clinical diagnosis of PD patients.

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

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/08/2019

(21) Application No.201911034937 A
(43) Publication Date : 06/09/2019

(54) Title of the invention : METHOD FOR MANAGEMENT OF SCHOLARSHIP OF LARGE NUMBER OF STUDENTS BASED ON BLOCKCHAIN

(51) International classification	:G06Q 20/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention is related to a method for management of scholarship of large number of students based on blockchain technologies. The method is processed by at least one processor of at least one computing device to manage large dynamic data of students, documents, organizations, school distributors to properly manage the scholarship distribution. The invention provides automating procedure of scholarship grants by various organization with safe, secure, reliable and category wise scholarship distribution.

No. of Pages : 23 No. of Claims : 5

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(14)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/09/2019

(21) Application No.201941038159 A
(43) Publication Date : 27/09/2019

(54) Title of the invention : BLOCKCHAIN BASED HEALTHCARE MANAGEMENT METHOD

(51) International classification :G16H10/60
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a healthcare management method, comprising the steps of entering a patient identification number in association with biometric data of the patient for registration, allowing access to a secured block chain based storage unit containing medical chart of the patient to a person authorized by the patient, analyzing the medical chart and recommending diagnosis if required, generating and transmitting the diagnosis report to the storage unit, monitoring the health status of the patient and updating the medical chart based on the health status and diagnosis, notifying the patient regarding the update, generating and transmitting an invoice upon discharging the patient from the healthcare centre, accessing the storage unit again for analyzing an insurance policy of the patient and requesting the patient for confirmation to clear the invoice through the insurance claim, wherein the invoice is automatically cleared upon confirmation of the patient.

No. of Pages : 12 No. of Claims : 7

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/08/2019

(21) Application No.201931032115 A
(43) Publication Date : 13/09/2019

(54) Title of the invention : HEALTH MONITORING SYSTEM

(51) International classification	:G10L21/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
The present invention relates to a secure health monitoring system, comprising plurality of sensors associated with a patient body for measuring health parameters, an encryption unit associated with the system for encrypting the health parameters and generates a decryption key, a communication module interlinked with the encryption unit for wirelessly transmitting the encrypted health parameters to a cloud storage unit, the cloud storage unit connected with the communication module for storing the encrypted health parameters, a decryption module associated with the cloud storage unit, wherein the decryption module is accessed by an authorize user for decrypting the encrypted health parameters by using the decryption key and a user interface installed in the system for displaying the health parameters to an authorize user.

No. of Pages : 11 No. of Claims : 7

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/06/2019

(21) Application No.201911023848 A
(43) Publication Date : 05/07/2019

(54) Title of the invention : METHOD OF FUZZY INFERENCE MODEL CONTROL FOR AN INJECTION MOLDING MACHINE

(51) International classification :B29C45/78 Y10S706/90
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention is related to a fuzzy model design for control application of injection molding technology field. Particularly the present invention present a fuzzy inference model based controls of operation the injection modeling machine by performing. It presents a method of fuzzy inference model control for an injection molding machine. The a control system of injection molding machine interfaced with a fuzzy model inference considering the plurality of thermo parameters and controlling parameters of proportional integrated control

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

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(17)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/11/2019

(21) Application No.201941046017 A
(43) Publication Date : 17/01/2020

(54) Title of the invention : AGRICULTURE MONITORING SYSTEM BASED ON WIRELESS SENSOR NETWORK

(51) International classification :G05B19/05
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
An agriculture monitoring system based on wireless sensor network comprising multiple sensors mapped in a crop field for sensing a set of parameter(s) related to condition(s) of crop(s) present in the crop field, a data storage unit associated with the sensor(s) for receiving and storing the parameters, a user platform wirelessly connected with the data storage unit for displaying the parameter(s) to a user in order to monitor condition(s) of the crop(s), a disease detection module associated with the user platform for identifying presence of a disease in the crop(s) and classifying the disease into a category, an alerting module connected with the detection module for producing an alarm signal upon detection of disease and a recommendation module accompanied by the alerting module for suggesting preventive measure(s) to safeguard the crop(s). Refer. To Figure 1

No. of Pages : 11 No. of Claims : 7

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(18)

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :20/12/2019

(21) Application No.201941053080 A

(43) Publication Date : 27/12/2019

(54) Title of the invention : HIGH PERFORMANCE COMPUTATION SYSTEM AND METHOD

(51) International classification :G06F0009500000,H04L0029080000,G06F0017500000,G06F0011340000,G06Q0010080000

(31) Priority Document No :NA

(32) Priority Date :NA

(33) Name of priority country :NA

(86) International Application No :PCT// Filing Date :01/01/1900

(87) International Publication No : NA

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

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

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(57) Abstract :
A high performance computation system comprise of a communication network with plurality of computing nodes, a user interface for acquiring a cloud and topographic data, a data management module for managing available resources, a task assigning module for abstracting request(s) from the cloud data, an execution module associated with the task module for simulation execution of the request to increases computation performance of the system, and a communication unit for transferring the simulation data to a panel, and a method for achieving high computing performance comprising steps of establishing a communication network acquiring cloud and topographic data of a computing device from a user, managing available resources according to power consumption rate of the device, extracting request(s) from the data and allocating the request(s), executing the request(s) according to the resources and topographic data, transferring the simulation to a panel.

No. of Pages : 13 No. of Claims : 7

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2019

(21) Application No.201941014136 A
(43) Publication Date : 26/04/2019

(54) Title of the invention : METHOD FOR DETECTING ANTI PATTERNS IN WEB SERVICES AND BUSINESS PROCESSES

(51) International classification :G06F11/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Exemplary embodiments of the present disclosure are directed towards a method for detecting anti patterns in web services and business processes comprising of: a metric suit detection phase which takes place by static analysis and reflection of web service (WS) and business process (BP) anti-patterns source codes which are collected from anti-pattern based detection methods; creation of training sets and testing sets for web service (WS) and business process (BP), and a Support vector machine (SVM) classifier is built with a training data, and then testing data is used to predict unlabeled classes; extraction of process with a business process model files; and business process configuration files where post extraction Business process anti-pattern metrics map BPM and anti-pattern metrics map WSM is initialized as an input; and detection of anti-patterns having a training phase and the training is given to support vector machine (SVM) leading to classification of web services and business processes into anti-patterns and non-anti-patterns.

No. of Pages : 25 No. of Claims : 10

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(20)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/11/2019

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(57) Abstract :
The present invention disclosure is method of load distribution balancing for fog cloud computing in Internet of things (IoTs) environment. The objective of the present invention is to overcome the inadequacies of the prior art in fog cloud computing in IoT environment. The disclosure presents computer implemented an algorithm for load balancing in fog computing environment.

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outputting a true response score for the campaign based on normalized user responses, the true response score indicating an effectiveness of the campaign; and

controlling output of functionality that is selectable to adjust distribution of the campaign based on the true response score.

10. The one or more computer-readable storage media of claim **9**, wherein the response normalization model is generated from previous user responses to one or more previous campaigns posted on the social network by users of the population.

11. The one or more computer-readable storage media of claim **9**, wherein the applying the first or second jump value further comprises adjusting a response score of the user response by the first or second jump value to generate the true response score.

12. The one or more computer-readable storage media of claim **9**, wherein the first behavioral classification group of the user comprises one of a pessimist group, a realist group, or an optimist group, and wherein the second behavioral classification group of the users comprises a different one of the pessimist group, the realist group, or the optimist group.

13. The one or more computer-readable storage media of claim **12**, wherein applying the first or second jump value further comprises:

increasing a response score of the user response if the identified first or second behavioral classification group of the user comprises the pessimist group; or

decreasing the response score of the user response if the identified first or second behavioral classification group of the user comprises the optimist group.

14. The one or more computer-readable storage media of claim **9**, wherein the user responses comprise user interactions with a social post that is posted on the social network.

15. The one or more computer-readable storage media of claim **9**, wherein the user responses comprise user answers to questions of a survey posted on the social network.

16. The one or more computer-readable storage media of claim **9**, wherein the first behavioral classification group comprises a first cut-off percentage of users with low response scores, and the second behavioral classification group comprises a second cut-off percentage of users with high response scores.

17. A computing device comprising:

at least a memory and a processor to implement a behavioral classification module, the behavioral classification module configured to:

determine response scores for users of a population based on user responses to one or more campaigns posted on a social network;

order the users of the population based on the response scores;

generate clustered data by clustering a first cut-off percentage of users with low response scores into a first behavioral classification group, clustering a second cut-off percentage of users with high response scores into a second behavioral classification group, and clustering remaining users of the population into a third behavioral classification group;

assign jump values to at least the first behavioral classification group and the second behavioral classification group, each jump value configured to remove behavioral bias from subsequent user responses to a subsequent campaign posted on the social network by users of the population;

receive the subsequent user responses to the subsequent campaign from the users of the population;

normalize the subsequent user responses by applying a respective jump value to each subsequent user response based on the assigned jump value of the first behavioral classification group or the second behavioral classification group;

output a true response score for the subsequent campaign based on normalized user responses, the true response score indicating an effectiveness of the subsequent campaign; and

control output of functionality that is selectable to adjust distribution of the campaign based on the true response score.

18. The computing device of claim **17**, wherein:

the jump value assigned to the first behavioral classification group increases a response score of subsequent user responses by users in the first behavioral classification group; and

the jump value assigned to the second behavioral classification group decreases a response score of subsequent user responses by users in the second behavioral classification group.

19. The computing device of claim **17**, wherein the first behavioral classification group comprises a pessimist group, the second behavioral classification group comprises an optimist group, and the third behavioral classification group comprises a realist group.

20. The computing device of claim **17**, wherein the user responses comprise user interactions with a social post on the social network.

* * * * *

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(4)

CERTIFICATE OF GRANT

INNOVATION PATENT

Patent number: 2021101931

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

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Title of invention:

Development of Android Based Auto Car Jack Using Internal Car Power

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Commissioner of Patents

PATENTS ACT 1990

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CERTIFICATE OF GRANT

INNOVATION PATENT

Patent number: 2021101931

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

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Commissioner of Patents

PATENTS ACT 1990

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Extracts from the Patents Act, 1990

Sect 120(1A) Infringement proceedings in respect of an innovation patent cannot be started unless the patent has been certified.

Sec 128 **Application for relief from unjustified threats**

(1) Where a person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings a person aggrieved may apply to a prescribed court, or to another court having jurisdiction to hear and determine the application, for:

(a) a declaration that the threats are unjustifiable; and

(b) an injunction against the continuance of the threats; and

(c) the recovery of any damages sustained by the applicant as a result of the threats.

(2) Subsection (1) applies whether or not the person who made the threats is entitled to, or interested in, the patent or a patent application.

Sec 129A **Threats related to an innovation patent application or innovation patent and courts power to grant relief.**

Certain threats of infringement proceedings are always unjustifiable.

(1) If:

(a) a person:

(i) has applied for an innovation patent, but the application has not been determined; or

(ii) has an innovation patent that has not been certified; and

(b) the person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings in respect of the patent applied for, or the patent, as the case may be;

then, for the purposes of an application for relief under section 128 by the person threatened, the threats are unjustifiable.

Courts power to grant relief in respect of threats made by the applicant for an innovation patent or the patentee of an uncertified innovation patent

(2) If an application under section 128 for relief relates to threats made in respect of an innovation patent that has not been certified or an application for an innovation patent, the court may grant the application the relief applied for.

Courts power to grant relief in respect of threats made by the patentee of certified innovation patent

(3) If an application under section 128 for relief relates to threats made in respect of a certified innovation patent, the court may grant the applicant the relief applied for unless the respondent satisfies the court that the acts about which the threats were made infringed, or would infringe, a claim that is not shown by the applicant to be invalid.

Schedule 1 **Dictionary**

certified, in respect of an innovation patent other than in section 19, means a certificate of examination issued by the Commissioner under paragraph 101F(c) in respect of the patent

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1. AU2021101931 - DEVELOPMENT OF ANDROID BASED AUTO CAR JACK USING INTERNAL CAR POWER

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Title
(EN) Development of Android Based Auto Car Jack Using Internal Car Power

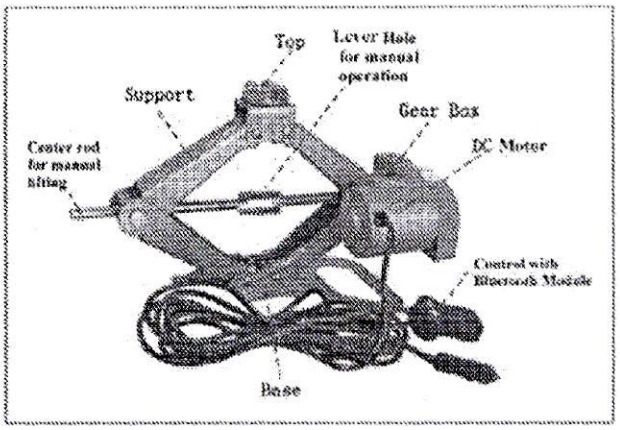


Fig. 1

Abstract
(EN)
Development of Android Based Auto Car Jack Using Internal Car Power Car jacks typically use mechanical benefit to allow a person to manually lift a vehicle. Hydraulic control is being used for more efficient jacks to produce more lift over longer distances. The manual operation of these jacks may leads in to accidents and it will injure the human body. To avoid such accidents the automated jacks have to be invented that should work with the electric power and which can be easily operated from the distance through wireless communication. This invention, proposes a car jack for emergency use with internal cigarette lighter control which can be operated using the electric power of the car battery [12volts]. This power source is used by the automatic simple car jack to eliminate the need for people to expend much effort. Moreover the person who operate the lift need not to be near the car and he can stand far away from the car and he can operate the jack via an android mobile through the blue tooth connectivity. The gear ratio was used to maximize the lifting force to ensure that the power was sufficient. The car jacker was created with Solidworks and its analyses to ensure that the safety aspect and force acting were all met. Milling and grinding machines were used to complete the fabrication work. The car jacker was put to the test, and it was found to have enough strength to raise and carry a car like a regular car jacker. Furthermore the developed mobile app was very simple to use and easy to connect with the jack.

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(54) Title: IMPLANTABLE DEVICE FOR TEMPOROMANDIBULAR JOINT AND METHOD OF PRODUCTION THEREOF

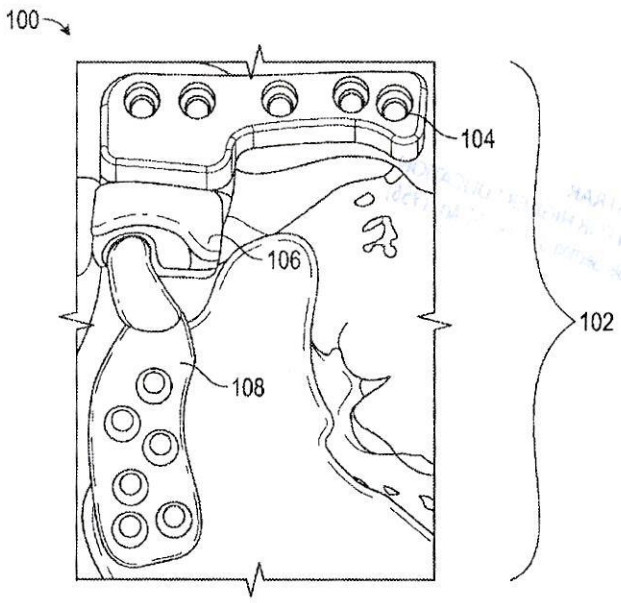


FIG. 1

(57) Abstract: Exemplary embodiments of the present disclosure are directed towards an implantable device for complete replacement of temporomandibular joint comprising of a condyle component to reconstruct a mandibular end of the temporomandibular joint designed for movement within the implantable device with a plate; and a condyle surface where the plate is configured to mechanically secure the condyle component to a ramus surface of a patient undergoing implant with the aid of screws; and the condyle surface polished to generate a mirror effect to reduce the friction in the implantable device and infection rate; a zygomatic arch component to reconstruct a temporal bone (glenoid fossa) of the temporomandibular joint comprising at least one of: a plate; a plurality of multiple threaded counter sink holes; a plurality of conically tapered holes and a zygomatic arch surface, whereby the multiple threaded counter sink holes are structured within the plate; and a fossa component configured to be positioned between the condyle component and

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Declarations under Rule 4.17:

— *as to the identity of the inventor (Rule 4.17(i))*
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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the zygomatic arch component to anchor the movement of the temporomandibular joint and the fossa component comprising of a low density biocompatible material made of a polycarbonate which is utilized in the additive manufacturing for the synthesis of implantable device for temporomandibular joint.

"IMPLANTABLE DEVICE FOR TEMPOROMANDIBULAR JOINT AND METHOD OF PRODUCTION THEREOF"

TECHNICAL FIELD

[001] The present invention relates to an implantable medical device. In particular the invention relates to customised artificial temporomandibular joint and methods for its production.

BACKGROUND

[002] Trauma, degenerative joint diseases, excessive clenching or grinding of teeth, congenital defects etc. may impair the temporomandibular joint both anatomically and functionally to an extent which might render it unusable. The dysfunctions of the temporomandibular joint are generally corrected through a temporomandibular joint implant to restore normal joint functionality.

[003] However, implants are invasive in nature and may lead to complications, including implant wear and tear, infection, damage of the bones around the joint, necrosis etc. Some prior arts have disclosed temporomandibular joint implants in which the mandibular part consists of a specifically shaped element adapted to be seated in the cavity with a sliding fit. Since each temporomandibular joint has a unique dimension, it is crucial for the implant to correspond to that dimension to function optimally. Ill-fitted implants can prevent the structured load distribution to the surrounding anatomy. This can cause formation of abnormal stress and strain pockets which can result in pain or permanent damage to the surrounding bone structure.

[004] The material used in the production of implants also plays a crucial role in the normal functioning of the deployed prosthesis. Materials which are incompatible with the surrounding anatomy may cause allergic reaction such as facial swelling, neurological problems and other health complications. Some attempts have been made to use biocompatible materials in prosthesis. However, such material has been used in powdered form composed of spherical particles; and can cause infection and blood contamination if not consolidated properly.

[005] In the light of aforementioned discussion there exists a need for an implantable device which can effectively address the concerns related to the temporomandibular joint disorder.

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BRIEF SUMMARY

[006] The following presents a simplified summary of the disclosure in order to provide a basic understanding to the reader. This summary is not an extensive overview of the disclosure and it does not identify key/critical elements of the invention or delineate the scope of the invention. Its sole purpose is to present some concepts disclosed herein in a simplified form as a prelude to the more detailed description that is presented later.

[007] Exemplary embodiments of the present disclosure are directed towards an implantable device for temporomandibular joint and method of production thereof.

[008] An exemplary object of the present disclosure is directed towards components being custom made as per the requirement of the patient.

[009] Another exemplary object of the present disclosure is directed towards components being made of non-corrosive materials.

[0010] Yet another exemplary object of the present disclosure is directed towards solid implants weighing the same as the normal bone weight of the patient with reduced volume.

[0011] An exemplary aspect of the present subject matter is directed towards a condyle component to reconstruct a mandibular end of the temporomandibular joint designed for movement within the implantable device with a plate; and a condyle surface, the plate is designed to mechanically secure the condyle component to a ramus surface of a patient undergoing implant; and the condyle surface polished to generate a mirror effect to reduce the friction in the implantable device and harboring of microbes.

[0012] Another exemplary aspect of the present subject matter is directed towards a zygomatic arch component to reconstruct a maxillary end of the temporomandibular joint with a plate; multiple threaded counter sink holes; and multiple tapered holes and a zygomatic arch surface, and the multiple threaded counter sink holes are structured within the plate.

[0013] Yet another exemplary aspect of the present subject matter is directed towards a fossa component positioned between the condyle component and the zygomatic arch component to anchor the movement of the temporomandibular joint, and the fossa component comprises of a low density material from at least one of: a polycarbonate. The fossa component is configured to be bonded with ultrasonic welding into the glenoid fossa component which has tapered holes.

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BRIEF DESCRIPTION OF DRAWINGS

[0014] Other objects and advantages of the present invention will become apparent to those skilled in the art upon reading the following detailed description of the preferred embodiments, in conjunction with the accompanying drawings, wherein like reference numerals have been used to designate like elements, and wherein:

[0015] FIG. 1 is an exemplary view of a temporomandibular joint implant fitted to a model.

[0016] FIG. 2 is a frontal view of the condyle, according to an exemplary embodiment of the present disclosure.

[0017] FIG. 3 is a frontal view of the fossa, according to an exemplary embodiment of the present disclosure.

[0018] FIG. 4 is a frontal view of the zygomatic arch, according to an exemplary embodiment of the present disclosure.

[0019] FIG. 5 is a flow chart illustrating a method for production of an implantable device for temporomandibular joint, according to an exemplary embodiment of the present disclosure.

[0020] FIG. 6A is a flow chart illustrating the steps involved in the construction of the condyle component, according to an exemplary embodiment of the present disclosure.

[0021] FIG. 6B is a flow chart illustrating the steps involved in the construction of the fossa component, according to an exemplary embodiment of the present disclosure.

[0022] FIG. 6C is a flow chart illustrating the steps involved in the construction of the zygomatic arch component, according to an exemplary embodiment of the present disclosure.

DETAILED DESCRIPTION

[0023] It is to be understood that the present disclosure is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the drawings. The present disclosure is capable of other embodiments and of being

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practiced or of being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting.

[0024] The use of "including", "comprising" or "having" and variations thereof herein is meant to encompass the items listed thereafter and equivalents thereof as well as additional items. The terms "a" and "an" herein do not denote a limitation of quantity, but rather denote the presence of at least one of the referenced item. Further, the use of terms "first", "second", and "third", and the like, herein do not denote any order, quantity, or importance, but rather are used to distinguish one element from another.

[0025] In accordance with a non-limiting exemplary embodiment of the present subject matter, FIG. 1 is a representation 100, of an implantable device 102 fitted to a model undergoing TMJ implant (referred to as a patient from now on) which is fabricated by application of a Fused Deposition Modelling (FDM) technique. The implantable device 102 includes a first component (referred from now on as a condyle component 104), employed to reconstruct the mandibular end of a temporomandibular joint (from here on referred to as TMJ). The implantable device 102 further comprises of a second component (referred from now on as a fossa component 106), employed to anchor the movement of the TMJ. The implantable device 102 further comprises of a third component (referred from now on as a zygomatic arch component 108), utilized in the reconstruction of the maxillary end of the TMJ.

[0026] Referring to FIG. 2 is a frontal view 200, of the condyle component, according to an exemplary embodiment of the present disclosure. The condyle component 104, is constructed using biocompatible Titanium alloy (Ti-6AL-4V ELI) and the like, without limiting the scope of the invention. It is designed for movement within the implantable device 102 and includes a plate 200a and a condyle surface 202. The plate 200a is designed to facilitate the mechanical securing of the condyle component 104 to a ramus surface of the model (FIG.1) with the aid of screws. Furthermore, multiple threaded countersink holes 204a are structured within the plate 200a in a manner to avoid the mandibular branch of the trigeminal nerve upon fastening. The condyle surface 202 of the condyle component 104 is polished to produce a mirror finish to avoid friction during the auxiliary movement of the implantable device 102 and to reduce the rate of infection. Moreover, the condyle component 104 has been constructed as a solid body which is contrary to the natural condyle which is normally hollow in structure. This is to avoid accumulation of foreign particulate matter in order to eliminate chances of infection after the implantable device 102 has been fitted to TMJ of the patient.

[0027] Referring to FIG. 3 is a frontal view 300, of the fossa component, according to an exemplary

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embodiment of the present disclosure. The fossa component 106 is configured to be made of a low density material not limiting to polycarbonate (PC) with biocompatible certification (ISO 10993 USP Class VI) material by FDM TITAN Ti machine and the like. In one embodiment of the invention, the fossa component 106 is placed between the condyle component 104 and zygomatic arch component 108.

[0028] Referring to FIG. 4 is a frontal view 400, of the zygomatic arch, according to an exemplary embodiment of the present disclosure. The zygomatic arch component 108 is constructed using biocompatible Titanium alloy (Ti-6AL-4V ELI) and the like which is similar to the material utilized for constructing the condyle component 104. In the illustrated embodiment, the zygomatic arch component 108 features a plate 200b, multiple threaded countersink holes 204b, multiple conically tapered holes 204c and a zygomatic arch surface 402. The multiple threaded countersink holes 204b are structured within the zygomatic arch surface 402 and are configured to assist in the fixation of the zygomatic arch component 108 to the zygomatic arch surface of the patient. The multiple conically tapered holes 204c are structured within the plate 200b and are configured to assist in the fixation of the fossa component 106 to the zygomatic arch component 108 by the application of techniques not limiting to, ultrasonic welding, and the like.

[0029] One of the key elements of the present invention is a method of the fabrication of the fossa component 106 by replicating the structure of the patient's anatomy. The steps involved in the aforementioned method have been illustrated in FIG. 6B.

[0030] Referring to FIG. 5 is a flow chart 500, illustrating a method for production of an implantable device for temporomandibular joint, according to an exemplary embodiment of the present disclosure, according to an exemplary embodiment of the present disclosure. In step 502, medical image data is acquired with the aid of a Computed Tomography (CT) scan. In step 504, it is determined whether the quality deteriorating factors are present in the medical image data. If the presence of quality deteriorating factors is ascertained, then the CT scan of step 506 is repeated under optimized reconstruction parameters to eliminate them and to augment the dimensional accuracy of the medical image data. Some of the quality deteriorating factors include beam hardening effect, image noise, radiation dose, staircase effect etc. however, other quality deteriorating factors associated with such scanning techniques and well known in the art may also be present. If the determination to step 504 is no, then at step 508 Digital Imaging and Communications in Medicine (DICOM) images are reconstructed using the medical image data. In step 510, a three-dimensional (3D) model is generated using the bio-medical computer aided design (Bio-CAD) technique. The elimination of the quality deterioration factors is crucial since the attributes of the medical image

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data directly affects the attributes of the 3D model generated in step 510. In step 512, the 3D Bio-CAD model is converted to stereolithography (STL) model for facilitating the fabrication of the required components of the implantable device 102. In step 514, the STL model is further improved by application of the smoothing algorithm. Smoothing of the STL model helps in reducing friction between various components of the implantable device 102 during auxiliary movement of the TMJ. The smoothing algorithm involves the identification of contour data points by slicing of the STL model and generating the common layer interface (CLI) file. These CLI files are then smoothened by application of the Fast Fourier Transform (FFT) algorithms. In step 516, the necessity of material amelioration is assessed. Material adaptation involves trimming and filling operations in order to ameliorate the STL model. If amelioration is required, then in step 518, the triangular angle and tolerance of the mesh of the STL model can be adjusted. Though the methodology employed in steps 514 and 518 has been adapted to accommodate the requirement of the present invention, other arrangements may also be used without limiting the scope of the invention. If in step 516, material amelioration is not required, then in step 520, a STL file in an American standard code for information interchange (ASCII) format is generated. In step 522, the dimensions of the STL model are compared to the measurement of the component to be manufactured. If any error is observed in step 522, then in step 524, a scaling factor is calculated. If not, then at step 526, the required component is manufactured to match the dimensions of the anatomy of the specific patient.

[0031] FIG. 6A is a flow chart 600a, illustrating the steps followed in the construction of the condyle component, according to an exemplary embodiment of the present disclosure. In step 602a, the patient's CT scan data is acquired for facilitating the generation of DICOM images which takes place in step 604a. In step 606a, 3D Bio-CAD model of the condyle component 104 is generated. In step 608a, the 3D Bio-CAD model is converted to the STL model for facilitating the fabrication of the condyle component 104 of the implantable device 102. In step 610a, the STL model of the condyle component 104 is further improved by application of the smoothing algorithm. In step 612a, the plate 200a (FIG 2) is coupled to the condyle surface 202 (FIG 2) to aid the fixing of the fossa component 106 to the condyle component 104. In step 614a, multiple threaded countersink holes 204a (FIG 2) are structured within the plate 200a (FIG 2) to facilitate the mechanical securing of the fossa component 106 to the condyle component 104. In step 616a, a file is generated in the STL format and exported to an Additive Manufacturing (AM) machine. In step 618a, the STL file is converted into several layers of uniform thickness. In step 620a, a layer of the STL file is considered for further action. In step 622a, deposition of a first layer of the biocompatible Titanium alloy powder is facilitated on the 3D printed condyle component 104. The steps 620a and 622a are repeated sequentially until the patient specific dimensions of the condyle component 104 are achieved. In step, 626a, the residues of the biocompatible Titanium alloy powder are removed with the aid of

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compressed air to eliminate the risk of post-operative complications.

[0032] FIG. 6B is a flow chart 600b, illustrating the steps involved in the construction of the fossa component, according to an exemplary embodiment of the present disclosure. In step 602b, the patient's CT scan data is acquired for facilitating the generation of DICOM images which takes place in step 604b. In step 606b, 3D Bio-CAD model of the fossa component 106 is generated from the maxilla of the non-defective fossa of the patient with the aid of mirroring tool. In step 608b, the 3D Bio-CAD model is converted to the STL model for facilitating the fabrication of the fossa component 106 of the implantable device 102. In step 610b, the STL model data is read from the STL file, in step 612b, the data is exported to the AM machine for initiating the fabrication of the fossa component 106. In step 614b, the first layer of the PC material is deposited on the platform of the AM machine, followed by subsequent cooling to provide strength to the fossa component 106. The step 614b is repeated until the dimensions of the fossa component of the patient are duplicated. In step 618b, the 3D printed fossa component 106 is placed in support removal solution for a period of 6-8 hours. In step 620b, supports are removed from the fossa component 106. This procedure ensures that that final design of the fossa component 106 is a duplicate of the patient's fossa structure.

[0033] FIG. 6C is a flow chart 600c, illustrating the steps followed in the construction of the zygomatic arch component, according to an exemplary embodiment of the present disclosure. In step 602c, the patient's CT scan data is acquired for facilitating the generation of DICOM images which takes place in step 604c. In step 606c, 3D Bio-CAD model of the zygomatic arch component 108 is generated. In step 607c, the 3D Bio-CAD model of the zygomatic arch component 108 is converted to an AM model. In step 608c, the curvature of the AM model of the zygomatic arch component 108 is analyzed with the aid of a Coordinate Measuring Machine (CMM). This probe is necessary to determine the coordinates of the zygomatic arch component 108 to render a precisely designed model. In step 609c, the 3D Bio-CAD model of the zygomatic arch component 108 is generated. In step 610c, multiple threaded countersink holes 204b are structured within the zygomatic arch surface 402. In step 612c, a plate 200b is attached perpendicularly to the zygomatic arch surface 402 to facilitate the mechanical securing of the fossa component 106 to the zygomatic arch component 108. In step 614c, a set of conically tapered holes 204c are structured within the plate 200b. In step 616c, the 3D Bio-CAD model of the zygomatic arch component 108 is converted to a STL file format. In step 618c, the STL file is converted into several layers of uniform thickness. In step 620c, a layer of the STL file is considered for further action. In step 622c, deposition of a first layer of the biocompatible Titanium alloy powder is facilitated on the 3D printed zygomatic arch component 108. The steps 620c and 622c are repeated sequentially until the desired dimensions of the zygomatic arch component 108 are achieved. In step, 626c, the residues of the biocompatible Titanium alloy powder

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are removed with the aid of compressed air to eliminate the risk of post-operative complications.

[0034] Although the present disclosure has been described in terms of certain preferred embodiments and illustrations thereof, other embodiments and modifications to preferred embodiments may be possible that are within the principles and spirit of the invention. The above descriptions and figures are therefore to be regarded as illustrative and not restrictive.

[0035] Thus the scope of the present disclosure is defined by the appended claims and includes both combinations and sub combinations of the various features described herein above as well as variations and modifications thereof, which would occur to persons skilled in the art upon reading the foregoing description.

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CLAIMS

What is claimed is:

1. An implantable device for temporomandibular joint comprising of:

   a condyle component to reconstruct a mandibular end of the temporomandibular joint designed for movement within the implantable device comprising at least one of: a plate; and a condyle surface, whereby the plate is configured to mechanically secure the condyle component to a ramus surface of a patient undergoing implant with the aid of screws; and the condyle surface polished to generate a mirror effect to reduce the friction and microbe harboring in the implantable device;

   a zygomatic arch component to reconstruct a maxillary end of the temporomandibular joint comprising at least one of: a plate; a plurality of multiple threaded counter sink holes; a plurality of conically tapered holes and a zygomatic arch surface, whereby the multiple threaded counter sink holes are structured within the plate; and

   a fossa component configured to be positioned between the condyle component and the zygomatic arch component to anchor the movement of the temporomandibular joint, whereby the fossa component comprises of a low density biocompatible material from at least one of: a polycarbonate which is utilized in the additive manufacturing for the synthesis of implantable device for temporomandibular joint.

2. The device of claim 1, wherein the condyle component inclusive of, at least one of: biocompatible Titanium alloy (Ti-6AL-4V ELI).

3. The device of claim 1, wherein zygomatic arch component is constructed utilizing a biocompatible Titanium alloy (Ti-6AL-4V ELI).

4. The device of claim 1, wherein the plurality of conically tapered holes are structured within

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the plate perpendicular to the zygomatic arch surface and are configured to assist in the fixation of the fossa component.

5. The device of claim 1, wherein the multiple threaded countersink holes are configured to assist in the fixation of the zygomatic arch component and the zygomatic arch of the patient undergoing implant.

6. The device of claim 1, wherein the zygomatic arch component is connected to the fossa component through ultrasonic welding.

7. The device of claim 1, wherein the condyle component is constructed as a solid body.

8. The device of claim 1, wherein multiple threaded countersink holes are structured within the plate of the condyle component in a manner to avoid the mandibular branch of the trigeminal nerve upon fastening.

9. A method for production of an implantable device for temporomandibular joint comprising of:

acquiring a medical image data with the aid of a Computed Tomography (CT) scan and determining the presence of quality deteriorating factors from at least one of: beam hardening effect; image noise; radiation dose; staircase effect; and partial volume effect in the medical image data, whereby upon ascertaining the presence of quality deteriorating factors the CT scan is repeated under optimized reconstruction parameters to eliminate quality deteriorating factors and to augment the dimensional accuracy of the medical image data else Digital Imaging and Communications in Medicine (DICOM) images are reconstructed using the medical image data;

generating a three dimensional model of a condyle component, a fossa component, and a zygomatic arch component using the bio-medical computer aided design (Bio-CAD) technique which is converted to stereolithography (STL) model for

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facilitating the fabrication of the required components of the implantable device, whereby the STL model is further improved by application of the smoothing algorithm involving the identification of contour data points by slicing of the STL model and generating the common layer interface (CLI) file which are further smoothened by the application of the Fast Fourier Transform (FFT) algorithms; and

adaptation of materials involving trimming and filling operations in order to ameliorate the STL model else an STL file is generated, whereby the dimensions of the STL model are compared to the measurement of the component to be manufactured and correction of scaling error is done before the manufacturing of the required component .

10. The method of claim 1, wherein the manufacturing of at least one of: the condyle component, the fossa component; and the zygomatic arch component manufactured to match the dimensions of the anatomy of the specific patient.

11. The method of claim 1, wherein the 3D Bio-CAD model of the fossa component is generated from the maxilla of the non-defective fossa of the patient undergoing implant with the aid of mirroring tool.

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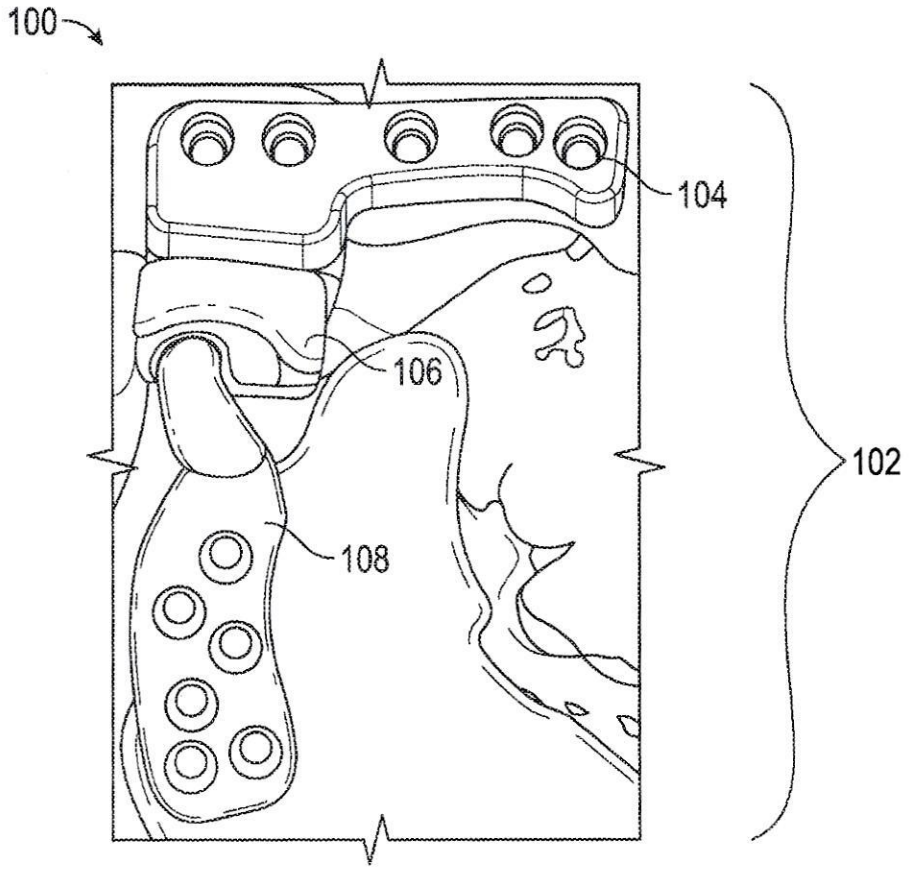


FIG. 1

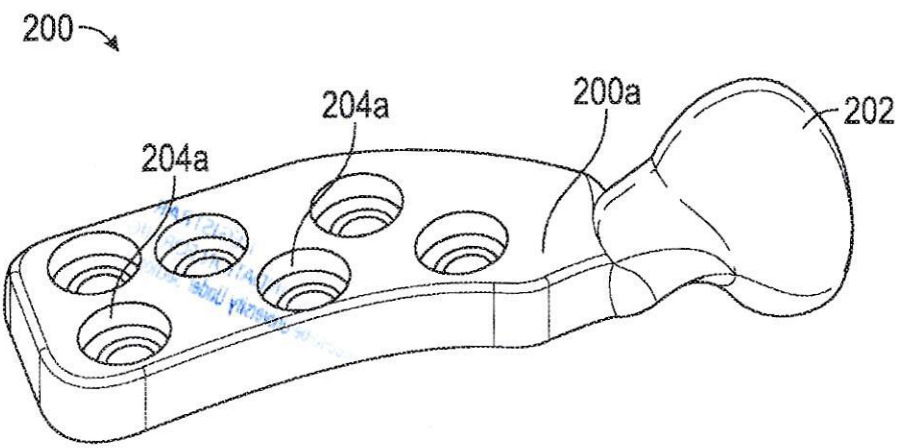


FIG. 2

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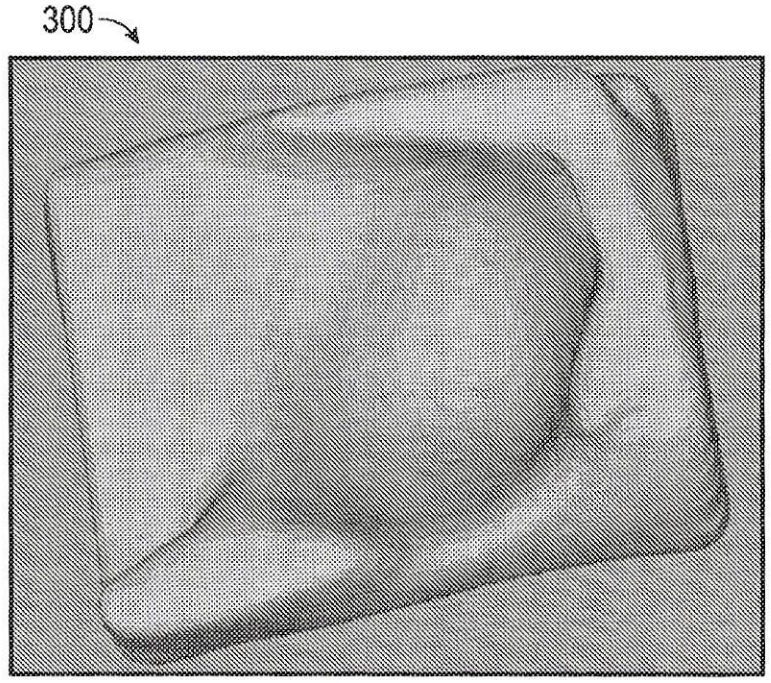


FIG. 3

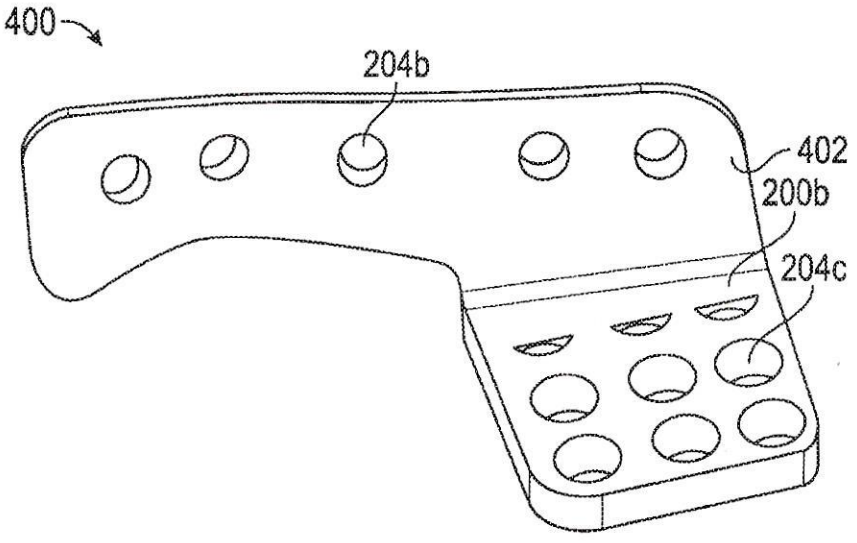


FIG. 4

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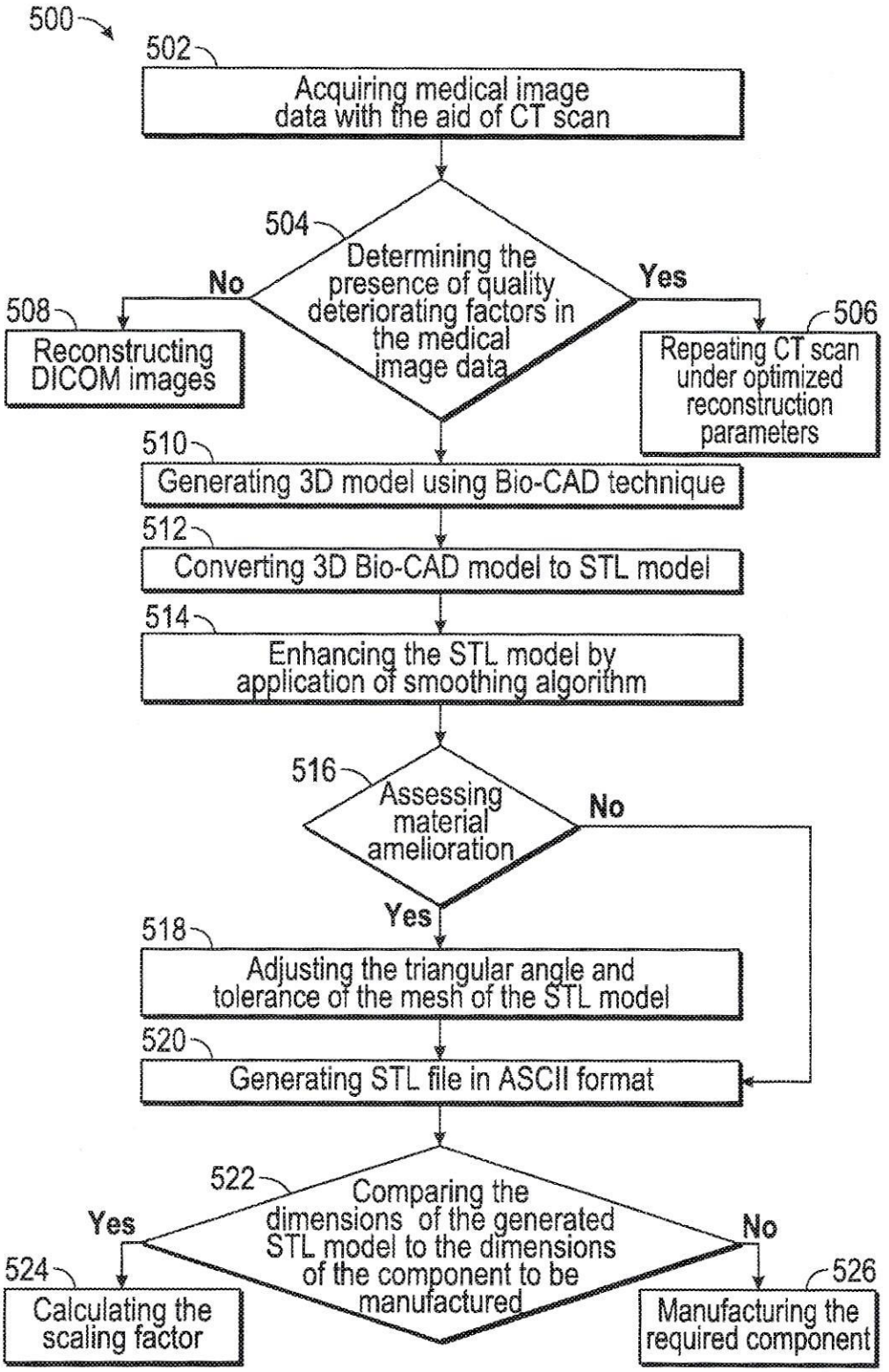


FIG. 5

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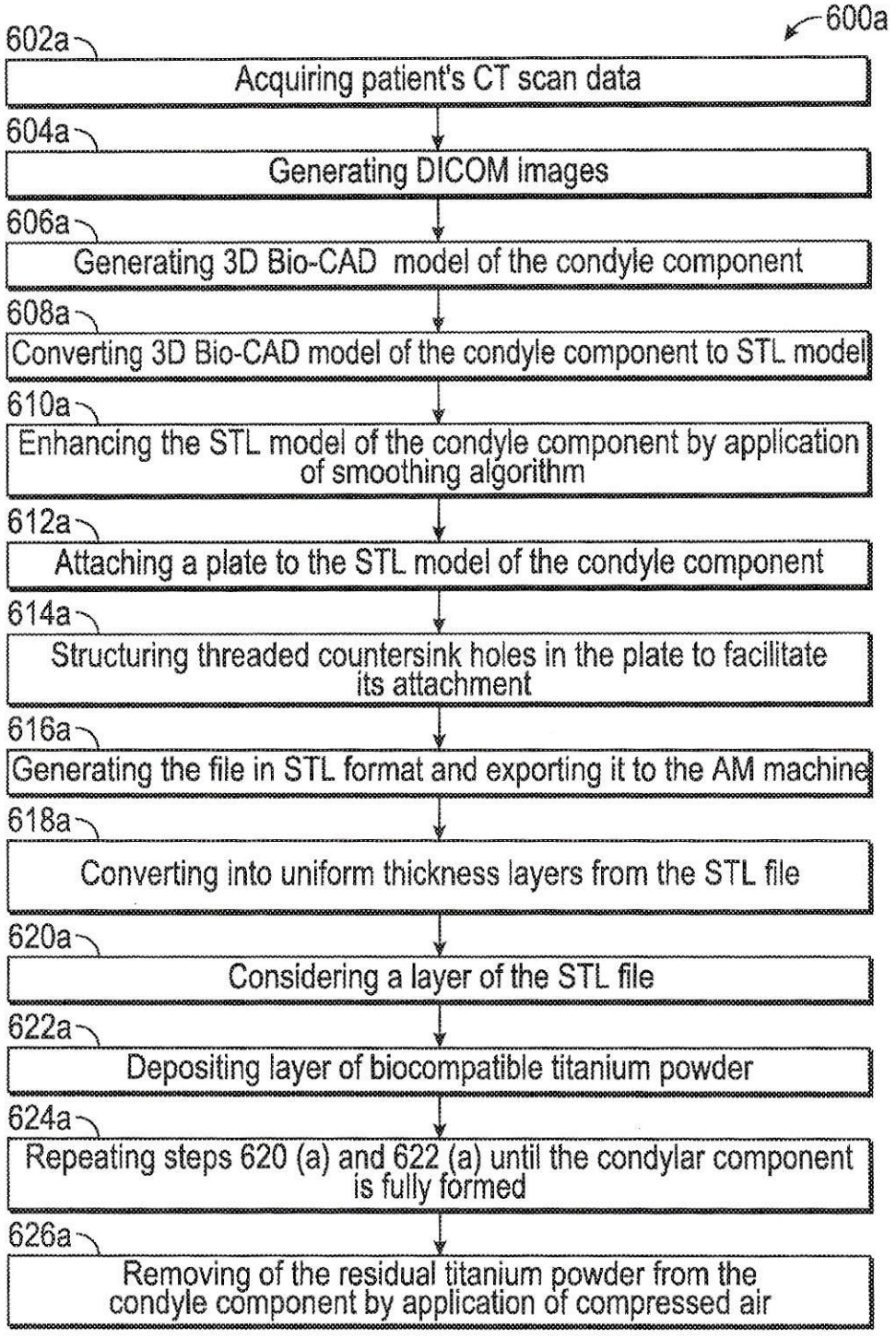


FIG. 6A

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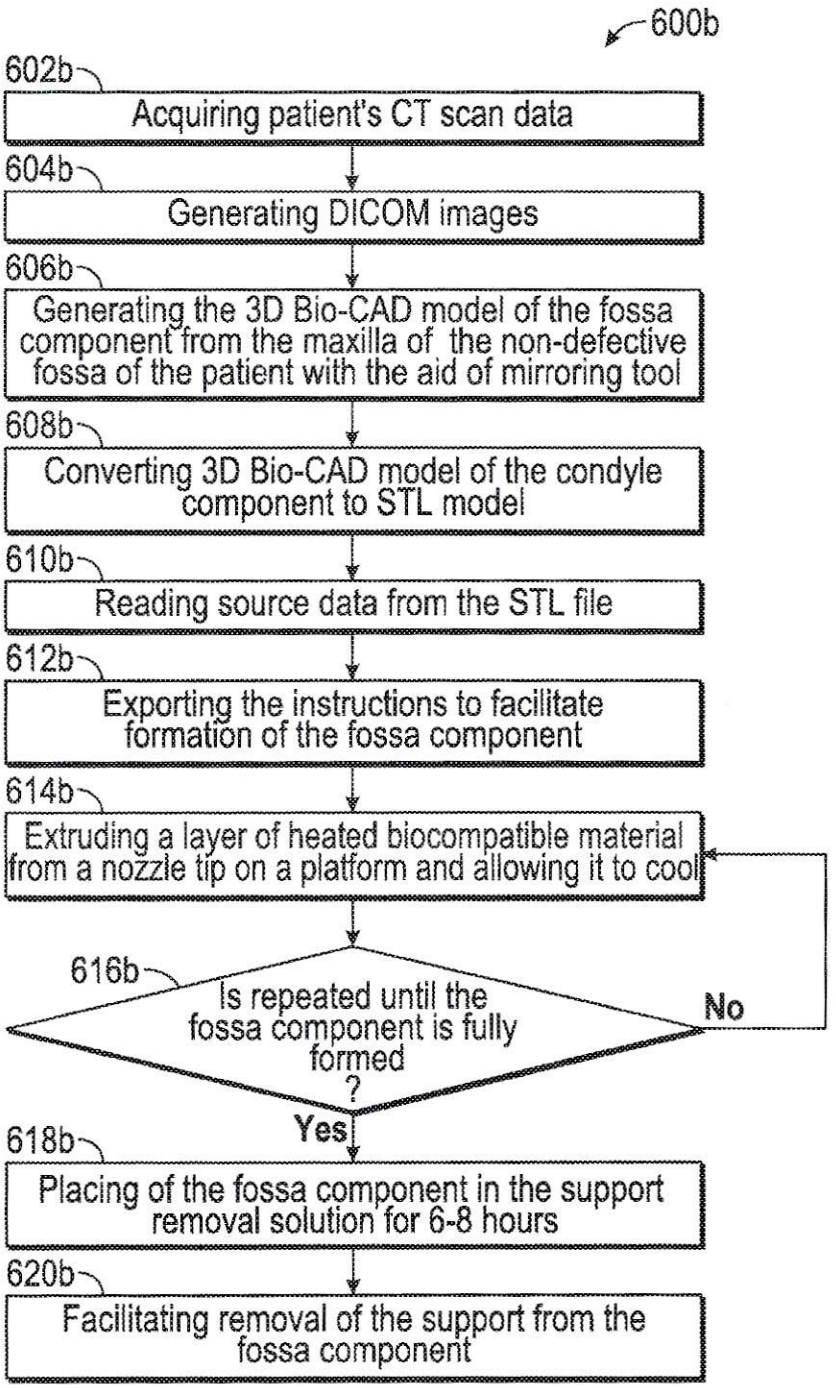


FIG. 6B

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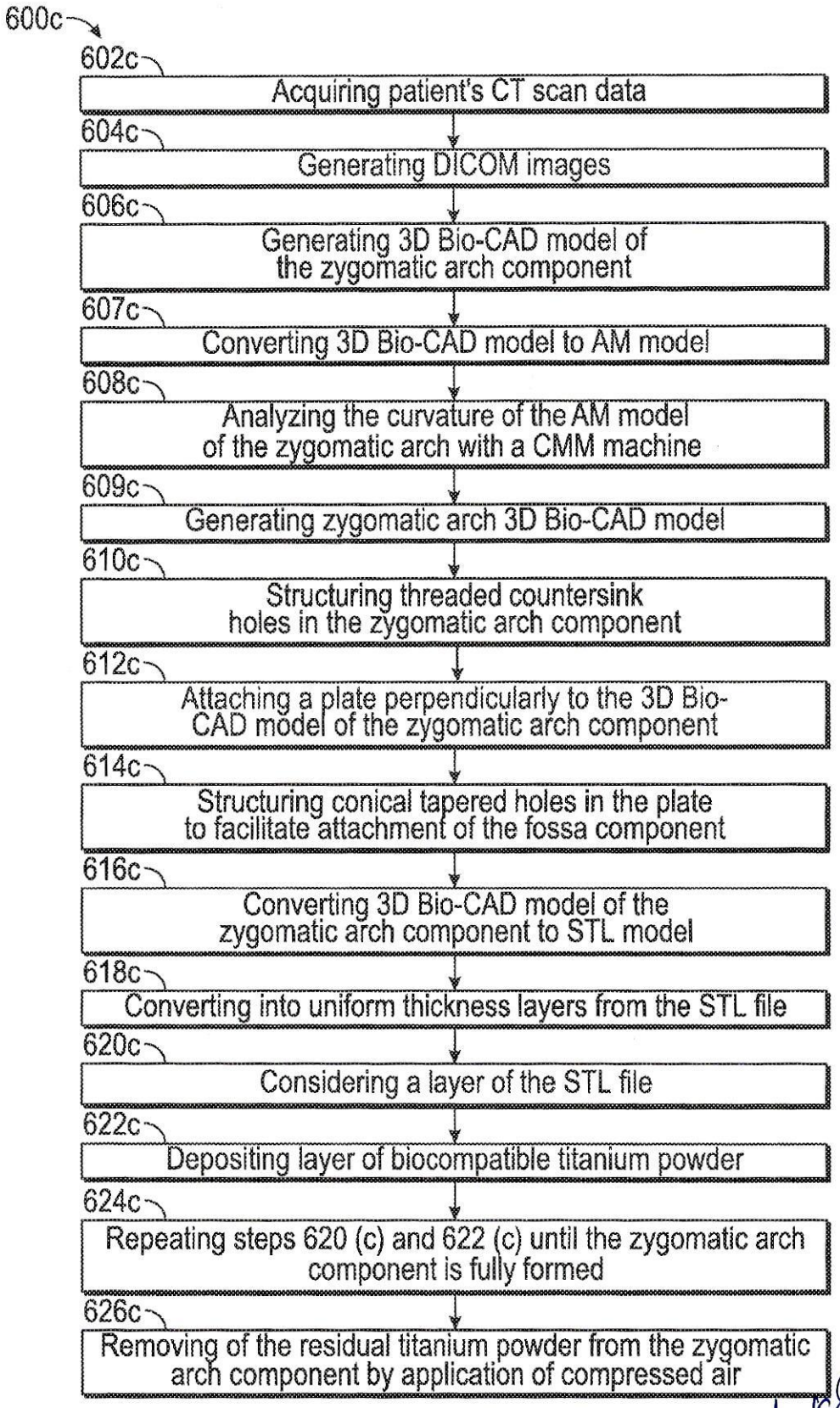


FIG. 6C

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2018/054993

A. CLASSIFICATION OF SUBJECT MATTER
A61F2/30 Version=2018.01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

TotalPatent One, IPO Internal Database
Keywords: temporomandibular joint, condyle, implant

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US6132466A (DAVID C HOFFMAN et al) 17 OCTOBER 2000 (17-10-2000) figs.1,2, col.3 line 54 to col.4 line 10, claim 1	1-11
Y	Image-Based Biomimetic Approach to Reconstruction of the Temporomandibular Joint, Stephen E. Feinberg, Scott J. Hollister, John W. Halloran,T.M. Gabe Chu, Paul H. Krebsbach, Cells Tissues Organs 2001;169:309-321, DOI: 10.1159/000047896 See Whole Document	1-11
Y	Temporomandibular joint Computed tomographic three-dimensional reconstruction, Mohammad B. Moaddab; Armand L. Dumas; Ashur G. Chavoor; Peter A. Neff; Nahid Homayoun, American Journal of Orthodontics, 0002-9416, 1985, DOI: 10.1016/0002-9416(85)90134-4 See Whole Document	1-11

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
06-08-2018	06-08-2018

Name and mailing address of the ISA/	Authorized officer
Indian Patent Office Plot No.32, Sector 14,Dwarka,New Delhi-110075 Facsimile No.	Madhanraj Muruganantham Telephone No. +91-11-2[illegible]

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Form PCT/ISA/210 (second sheet) (January 2015)

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Patent Title: **An IOT Based Device for Accessing Civil Engineering Infrastructure over Hilly Areas**

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7	**Dr. Sitesh Kumar Singh**, Assistant Professor, Department of Civil Engineering, Wollega University, Nekemte 395, Ethiopia.
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Submission details

Transaction reference	Description	Fee amount
APSZ-2110308089	**Patents new application (innovation) - Patent 2021104585**	
	Innovation Patent Application (By Preferred Means)	$180.00
Payment total		**$180.00**

Note: Amounts include GST where applicable. Under division 81 of A New Tax System (Goods and Services Tax) Act 1999, GST is not payable on the purchase of any statutory items from IP Australia.

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(7)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/07/2017

(21) Application No.201741023907 A
(43) Publication Date : 14/07/2017

(54) Title of the invention : IMPLANTABLE DEVICE FOR TEMPOROMANDIBULAR JOINT AND METHOD OF PRODUCTION THEREOF

(51) International classification :A61F2/30
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(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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3)DR. V. GIRIDHAR KUMAR
4)DR. Y. RAVI KUMAR

(57) Abstract :
Exemplary embodiments of the present disclosure are directed towards an implantable device for complete replacement of temporomandibular joint comprising of a condyle component to reconstruct a mandibular end of the temporomandibular joint designed for movement within the implantable device with a plate; and a condyle surface where the plate is configured to mechanically secure the condyle component to a ramus surface of a patient undergoing implant with the aid of screws; and the condyle surface polished to generate a mirror effect to reduce the friction in the implantable device and infection rate; a zygomatic arch component to reconstruct a temporal bone (glenoid fossa) of the temporomandibular joint comprising at least one of: a plate; a plurality of multiple threaded counter sink holes; a plurality of conically tapered holes and a zygomatic arch surface, whereby the multiple threaded counter sink holes are structured within the plate; and a fossa component configured to be positioned between the condyle component and the zygomatic arch component to anchor the movement of the temporomandibular joint and the fossa component comprising of a low density biocompatible material made of a polycarbonate which is utilized in the additive manufacturing for the synthesis of implantable device for temporomandibular joint.

No. of Pages : 23 No. of Claims : 11

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(8)

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/03/2018

(21) Application No.201841009115 A
(43) Publication Date : 16/03/2018

(54) Title of the invention : MULTICORE SYSTEM FOR REPROCESSING OF TASKS

(51) International classification	:G06F3/00; G06F9/46	(71)**Name of Applicant :** **1)P.PAVAN KUMAR** Address of Applicant :H.No:21/44-B-4-1, Balakondahall, Nandyal, Kurnool, Andhra Pradesh-518501, India. Andhra Pradesh India
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:NA	(72)**Name of Inventor :**
Filing Date	:NA	**1)P.PAVAN KUMAR**
(87) International Publication No	: NA	**2)Dr. A. ANANDA RAO**
(61) Patent of Addition to Application Number	:NA	**3)Dr.CH.SATYANARAYANA**
Filing Date	:NA	**4)Dr. RADHIKA RAJU**
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
7. ABSTRACT Exemplary embodiments of the present disclosure are directed towards a multicore system for reprocessing of tasks comprising of a re-co scheduling module involving an outcome of Enhancing Cache Performance approach configured to reschedule the loads where subsequent-sporadic loads on M processors are considered to be eective at the span s and a load set is discouraged from co-scheduling and the size of the load set is equal to and more than the xed storage region set of re-partitioned load; a flexible repo loaded vector module to consider an access time and cycle time for various cores within a set storage region set in nano-seconds; a task processing module for cache-aware real time scheduling load sets where an eligible and high priority co-scheduling loads are discouraged due to thrashing and low priority tasks are encouraged for task accomplishment and a core comprising of plurality of a private local cache configured to be shared with plurality of other cores which are configured to process elements; and an arithmetic logic unit configured to aid a plurality of registers to share the information conveyed between them.

No. of Pages : 17 No. of Claims : 10

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(57) Abstract :

Present invention relates to a device for detecting synthetic food products. More particularly, the invention relates to a device for detecting synthetic rice and egg. Moreover, the device is designed to automatically connect to a smart electronic device for cooking rice and egg. The device comprises of a pressure applying chamber for detecting of synthetic grains and furthermore, an imaging plate to recognize the synthetic eggs kind of food ingredients.

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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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8. DECLARATIONS:

(i) Declaration by the inventor(s)

I/We ,Dr.MOHD ABDUL BARI ,Dr.J.B.V.SUBRAHMANYAM , Dr.G.VIJAYA ,Dr.K.VENKATESH SHARMA ,Dr.S. CHIDAMBARANATHAN ,MD. RAFEEQ ,BETALA RAKESH ,Dr. POTLURI SANKAR BABU,KORRA SEENA NAIK ,K.S.R.K.SARMA ,Dr.SUDARSHAN.E ,DR.CHANDRASHEKHAR.A ,SHANKARNAYAK BHUKYA , 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.

(a) Date: -----

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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.
- I am/We are, the assignee or legal representative to true first inventors.

9. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:

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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): ----------

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(57) Abstract :
The present invention relates to a neural network based systems and, more particularly, to a method of management of computing workload in the networked host using artificial neural network (ANN). The disclosure presents an improved computing ability of the networked hosts using ANN to computing and assigns the computing workload on the basis of the type of the computing task, type of host and time of performing the computing task. This method improved the data transfer and computing performance of the host computers with fully ANN based assignment of the computing task.

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features or acts described. Rather, the specific features and acts are disclosed as example forms of implementing the claimed invention.

What is claimed is:

1. A method implemented by one or more computing devices, the method comprising:

receiving, by the one or more computing devices, user responses to a campaign posted on a social network from users of a population;

generating, by the one or more computing devices, a response score for each user of the population based on the user responses and associating each response score with an identifier of a respective user;

generating, by the one or more computing devices, a response normalization model for the population by:

generating clustered data for the user identifiers based on the response scores, the clustered data including at least a first behavioral classification group that includes user identifiers with response scores that are lower relative to the users of the population of users, and a second behavioral classification group that includes user identifiers with response scores that are higher relative to the users of the population;

assigning a first jump value to the first behavioral classification group and assigning a second jump value to the second behavioral classification group, the first jump value and the second jump value configured to remove behavioral bias from user responses;

receiving, by the one or more computing devise, additional user responses to an additional campaign posted on the social network from at least a portion of the users of the population;

removing, by the one or more computing devise, behavioral bias from the additional user responses by applying the response normalization model to the additional user responses, the applying the response normalization model adjusting additional response scores associated with the additional user responses by increasing the additional response scores of user identifiers associated with the first behavioral classification group and decreasing additional response scores of user identifiers associated with the second behavioral classification group;

outputting, by the one or more computing devices, a true response score for the additional campaign based on the adjusted additional response scores associated with the additional user responses, the true response score indicating an effectiveness of the additional campaign; and

controlling, by the one or more computing devices, distribution of the additional campaign to users of the population via the social network based on the true response score, the controlling comprising one of adjusting distribution of the additional campaign to at least a subset of users of the population or ending distribution of the additional campaign based on the true response score.

2. The computer-implemented method of claim 1, wherein the generating the clustered data further comprises:

ordering the user identifiers of the population based on the response scores; and

generating the clustered data by clustering a first cut-off percentage of user identifiers with low response scores into the first behavioral classification group, and clustering a second cut-off percentage of user identifiers with high response scores into the second behavioral classification group.

3. The computer-implemented method of claim 1, wherein the first behavioral classification group comprises a pessimist group that includes user identifiers with response scores that are negative on a negative-to-positive scale relative to the response scores of the users in the population, and wherein the second behavioral classification group comprises an optimist group that includes user identifiers with response scores that are positive on the negative-to-positive scale relative to the response scores of the users in the population.

4. The computer-implemented of claim 1, wherein the removing behavioral bias from the additional user responses comprises determining an additional response score for each of the additional user responses, and normalizing each additional response score by applying the first or second jump value to each additional response score to generate true user responses to the additional campaign.

5. The computer-implemented of claim 4, wherein the normalizing the additional user responses further comprises, for each additional user response:

identifying a user of the additional user response;

identifying whether the user is associated with the first or second behavioral classification group; and

adjusting the additional response score of the additional user response by the first or second jump value assigned to the identified first or second behavioral classification group of the user.

6. The computer-implemented method of claim 4, further comprising identifying one or more unusual user responses from the additional user responses based on the one or more unusual user responses including an additional response score that is outside of a range of response scores associated with the first or second behavioral classification group of a user of the additional user response.

7. The computer-implemented method of claim 1, wherein the user responses comprise user interactions with a social post that is posted on the social network, and wherein the response scores are determined based on types of the user interactions.

8. The computer-implemented method of claim 1, wherein the user responses comprise user answers to questions of a survey posted on the social network.

9. One or more computer-readable storage media comprising instructions stored thereon that, responsive to execution by a computing device, cause the computing device to perform operations comprising:

receiving user responses to a campaign posted on a social network from one or more users of a population; and

applying a response normalization model to the user responses to the campaign posted on the social network to normalize the user responses by removing behavioral bias from the user responses to generate true user responses, the response normalization model comprising clustered data defining at least a first and second behavioral classification group for users of the population and at least a first and second jump value associated with the first and second behavioral classification groups, and the response normalization model configured to normalize each of the user responses to the campaign posted on the social network by:

identifying a user of a user response;

identifying whether the user is associated with the first or second behavioral classification group in the response normalization model;

applying the first or second jump value associated with the identified first or second behavioral classification group of the user to generate a true user response;

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devices include a keyboard, a cursor control device (e.g., a mouse), a microphone, a scanner, touch functionality (e.g., capacitive or other sensors that are configured to detect physical touch), a camera (e.g., which may employ visible or non-visible wavelengths such as infrared frequencies to recognize movement as gestures that do not involve touch), and so forth. Examples of output devices include a display device (e.g., a monitor or projector), speakers, a printer, a network card, tactile-response device, and so forth. Thus, the computing device **702** may be configured in a variety of ways as further described below to support user interaction.

Various techniques may be described herein in the general context of software, hardware elements, or program modules. Generally, such modules include routines, programs, objects, elements, components, data structures, and so forth that perform particular tasks or implement particular abstract data types. The terms "module," "functionality," and "component" as used herein generally represent software, firmware, hardware, or a combination thereof. The features of the techniques described herein are platform-independent, meaning that the techniques may be implemented on a variety of commercial computing platforms having a variety of processors.

An implementation of the described modules and techniques may be stored on or transmitted across some form of computer-readable media. The computer-readable media may include a variety of media that may be accessed by the computing device **702**. By way of example, and not limitation, computer-readable media may include "computer-readable storage media" and "computer-readable signal media."

"Computer-readable storage media" refers to media and/or devices that enable persistent and/or non-transitory storage of information in contrast to mere signal transmission, carrier waves, or signals per se. Thus, computer-readable storage media does not include signals per se or signal bearing media. The computer-readable storage media includes hardware such as volatile and non-volatile, removable and non-removable media and/or storage devices implemented in a method or technology suitable for storage of information such as computer readable instructions, data structures, program modules, logic elements/circuits, or other data. Examples of computer-readable storage media may include, but are not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, hard disks, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or other storage device, tangible media, or article of manufacture suitable to store the desired information and which may be accessed by a computer.

"Computer-readable signal media" refers to a signal-bearing medium that is configured to transmit instructions to the hardware of the computing device **702**, such as via a network. Signal media typically may embody computer readable instructions, data structures, program modules, or other data in a modulated data signal, such as carrier waves, data signals, or other transport mechanism. Signal media also include any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media include wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared, and other wireless media.

As previously described, hardware elements **710** and computer-readable media **706** are representative of modules, programmable device logic and/or fixed device logic implemented in a hardware form that may be employed in some implementations to implement at least some aspects of the techniques described herein, such as to perform one or more instructions. Hardware may include components of an integrated circuit or on-chip system, an application-specific integrated circuit (ASIC), a field-programmable gate array (FPGA), a complex programmable logic device (CPLD), and other implementations in silicon or other hardware. In this context, hardware may operate as a processing device that performs program tasks defined by instructions and/or logic embodied by the hardware as well as a hardware utilized to store instructions for execution, e.g., the computer-readable storage media described previously.

Combinations of the foregoing may also be employed to implement various techniques described herein. Accordingly, software, hardware, or executable modules may be implemented as one or more instructions and/or logic embodied on some form of computer-readable storage media and/or by one or more hardware elements **710**. The computing device **702** may be configured to implement particular instructions and/or functions corresponding to the software and/or hardware modules. Accordingly, implementation of a module that is executable by the computing device **702** as software may be achieved at least partially in hardware, e.g., through use of computer-readable storage media and/or hardware elements **710** of the processing system **704**. The instructions and/or functions may be executable/operable by one or more articles of manufacture (for example, one or more computing devices **702** and/or processing systems **704**) to implement techniques, modules, and examples described herein.

The techniques described herein may be supported by various configurations of the computing device **702** and are not limited to the specific examples of the techniques described herein. This functionality may also be implemented all or in part through use of a distributed system, such as over a "cloud" **714** via a platform **716** as described below.

The cloud **714** includes and/or is representative of a platform **716** for resources **718**. The platform **716** abstracts underlying functionality of hardware (e.g., servers) and software resources of the cloud **714**. The resources **718** may include applications and/or data that can be utilized while computer processing is executed on servers that are remote from the computing device **702**. Resources **718** can also include services provided over the Internet and/or through a subscriber network, such as a cellular or Wi-Fi network.

The platform **716** may abstract resources and functions to connect the computing device **702** with other computing devices. The platform **716** may also serve to abstract scaling of resources to provide a corresponding level of scale to encountered demand for the resources **718** that are implemented via the platform **716**. Accordingly, in an interconnected device implementation, implementation of functionality described herein may be distributed throughout the system **700**. For example, the functionality may be implemented in part on the computing device **702** as well as via the platform **716** that abstracts the functionality of the cloud **714**.

CONCLUSION

Although the invention has been described in language specific to structural features and/or methodological acts, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific

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pessimist. This information may be provided to a business to enable the business to the handle customers in a certain way based on whether the customer is a pessimist or an optimist.

In one or more implementations, response normalization model **106** can be used to identify pessimists and optimists to enable advertisement and/or content targeting. For example, response normalization model **106** can estimate with a reasonable level of confidence, a potential customer's individual personality, on the pessimist to optimist scale. This information can then be used by businesses to target advertisements that potentially can result in higher conversion. For example, if a user is identified as a pessimist, and the weather on a particular day is cold and rainy, a company could target an advertisement to the pessimist that showcases umbrellas. Alternately, on the same rainy day, a business might target premium brands of hot cocoa to optimists.

In one or more implementations, response normalization model **106** can be used by social recommendation systems to give a more precise rating to content to ensure that social recommendations are targeted to the right set of users.

Example Procedures

The following discussion describes techniques for generating response normalization model **106** (FIG. **5**), and for normalizing user responses to an event using the response normalization model (FIG. **6**) that may be implemented utilizing the systems and devices described herein. Aspects of each of the procedures may be implemented in hardware, firmware, or software, or a combination thereof. The procedures are shown as a set of blocks that specify operations performed by one or more devices and are not necessarily limited to the orders shown for performing the operations by the respective blocks. In portions of the following discussion, reference will be made to FIGS. **1**, **2**, and **4**.

FIG. **5** illustrates a procedure **500** in an example implementation in which response normalization model **106** is generated.

At **502**, user responses to one or more events are received from users of a population. For example, behavioral classification module **104** (FIG. **1**) receives user responses **202** (FIG. **2**) to one or more events from users of a population.

At **504**, a response score is determined for each user of the population based on the user responses. For example, behavioral classification module **104** determines a response score **204** for each user of the population based on the user responses **202**.

At **506**, the users of the population are clustered into behavioral classification groups based on the response scores. For example, behavioral classification module **104** clusters the users of the population into behavioral classification groups **206** or **208** based on the response scores **204**.

At **508**, a jump value is assigned to each behavioral classification group. For example, behavioral classification module **104** assigns jump value **210** to first behavioral classification group **206** and assigns jump value **212** to second behavioral classification group **208**. The jump values are configured to remove behavioral bias from user responses.

FIG. **6** illustrates a procedure **600** in an example implementation in which user responses to an event are normalized using response normalization model **106**.

At **602** user responses to an event are received from users of a population. For example, behavioral classification module **104** (FIG. **1**) receives user responses **402** (FIG. **4**) to an event from users of a population.

At **604**, a response normalization model is applied to the user responses to normalize the user responses by removing behavioral bias from the user responses to generate true user responses. For example, behavioral classification module **104** applies response normalization model **106** to user responses **402** to normalize the user response by removing behavioral bias from the user responses to generate true user responses **406**.

Having described example procedures in accordance with one or more implementations, consider now an example system and device that can be utilized to implement the various techniques described herein.

Example System and Device

FIG. **7** illustrates an example system generally at **700** that includes an example computing device **702** that is representative of one or more computing systems and/or devices that may implement the various techniques described herein. This is illustrated through inclusion of behavioral classification module **104** and response normalization model **106**, which operate as described above. The computing device **702** maybe, for example, a server of a service provider, a device associated with a client (e.g., a client device), an on-chip system, and/or any other suitable computing device or computing system.

The example computing device **702** is illustrated includes a processing system **704**, one or more computer-readable media **706**, and one or more I/O interface **708** that are communicatively coupled, one to another. Although not shown, the computing device **702** may further include a system bus or other data and command transfer system that couples the various components, one to another. A system bus can include any one or combination of different bus structures, such as a memory bus or memory controller, a peripheral bus, a universal serial bus, and/or a processor or local bus that utilizes any of a variety of bus architectures. A variety of other examples are also contemplated, such as control and data lines.

The processing system **704** is representative of functionality to perform one or more operations using hardware. Accordingly, the processing system **704** is illustrated as including hardware elements **710** that may be configured as processors, functional blocks, and so forth. This may include implementation in hardware as an application specific integrated circuit or other logic device formed using one or more semiconductors. The hardware elements **710** are not limited by the materials from which they are formed or the processing mechanisms employed therein. For example, processors may be comprised of semiconductor(s) and/or transistors (e.g., electronic integrated circuits (ICs)). In such a context, processor-executable instructions may be electronically-executable instructions.

The computer-readable storage media **706** is illustrated as including memory/storage **712**. The memory/storage **712** represents memory/storage capacity associated with one or more computer-readable media. The memory/storage component **712** may include volatile media (such as random access memory (RAM)) and/or nonvolatile media (such as read only memory (ROM), Flash memory, optical disks, magnetic disks, and so forth). The memory/storage component **712** may include fixed media (e.g., RAM, ROM, a fixed hard drive, and so on) as well as removable media (e.g., Flash memory, a removable hard drive, an optical disc, and so forth). The computer-readable media **706** may be configured in a variety of other ways as further described below.

Input/output interface(s) **708** are representative of functionality to allow a user to enter commands and information to computing device **702**, and also allow information to be presented to the user and/or other components or devices using various input/output devices. Examples of input

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population are in the realist group (R), and n_3 users of the population are in the pessimist group (P).

2) Compute maximum likelihood estimates (MLE's) for each cluster of users. Find a likelihood value for the combined population.

3) As soon as the likelihood function is converging, stop.

The response normalization model **106** then evaluates the maximum likelihood estimates for "r" possible ordinal responses to a series of events. This estimate, when evaluated across the series of events, provides the distribution or clustering of users who are pessimistic, realistic, and optimistic. Once the population is understood, response normalization model **106** can be used to normalize user responses by removing individual behavioral biases to generate the normalized responses, as described throughout.

Determining True Quality of a Social Media Campaign

In one or more implementations, response normalization model **106** can be used to determine a true quality of a social media campaign. Behavioral classification module **104** can receive user responses from users in a population to a set of multiple campaigns (e.g., multiple social posts to a brand page on Facebook®). Each user response can include a response score on an ordinal scale. Behavioral classification module **104** clusters the users of the population, based on the response scores, to generate a response normalization model **106** for users of the population. As described above, the response normalization model **106** clusters the users, based on the different behavioral biases of the users, into different behavioral classification groups.

Subsequently, new user responses by the users in the population to a new campaign can be received by behavioral classification module **104**. The new user responses can be applied to the response normalization model **106**, generated from the user responses to the multiple campaigns, to generate a true quality of the new campaign.

The true quality of the new campaign is based on the assumption that the quality of a campaign is primarily based on content. For example, when the new campaign is launched, it is reasonable to assume that the behavioral bias of the population has not changed. As such, the behavioral biases computed from the user responses to the earlier campaigns can be used for the new campaign. Further, the effects of other external factors to the users' responses to the new campaign are negligibly small. Thus, the quality of the content of the new campaign is the main influencer of the user responses. As such, the quality of the content of the new campaign can be estimated and compared with the quality of the content from the previous campaigns.

In other words, the actual response to a campaign is a function of the true response to the campaign and the individual behavioral bias of users in the population. Assuming a linear model, this can be expressed as:

Actual Response=Alpha*TrueResponse+Beta*Pessi-OptiScore+Epsilon for all users

Here, the Pessi-OptiScore and actual response for each individual are known, and Alpha, True Response, and Epsilon can be estimated.

Alpha can be used to indicate the "quality" of the new campaign, and can be computed for each new campaign. As such, Alpha can be used to compare all campaigns by a business or brand on a social network, and social marketers can monitor Alpha to determine whether Alpha is improving or worsening with each new campaign. It is to be appreciated that in some cases, Alpha can be separately determined for pessimists, optimists and realists. Alpha may also be determined for various different types of social posts, such as posts with a picture, posts with a video, posts with a link, posts intended to be humorous, and the like.

Response Normalization Model Use Cases

Response normalization model **106** can be used for a variety of different benefits on a variety of different channels.

In one or more implementations, the response normalization model **106** can be used to compare results of a survey by normalizing the results to achieve a better understanding of the target audience and to evaluate them appropriately.

In one or more implementations, the response normalization model **106** can be used to measure the success of a marketing campaign (e.g., a social media marketing campaign). A campaign may result in varying levels of engagement (e.g., low, medium, or high engagement). For example, the level of engagement for a social post to a page on a page on Facebook® may result in a low, medium, or high number of likes, comments, shares, and/or clicks. Conventional solutions can measure the number of likes, shares, and comments to arrive at a quantum level of engagement. However, this quantum level of engagement may not be the true level of engagement.

For example, users respond to campaign based on their "stimulation thresholds". A user with a low stimulation threshold may respond with high engagement, whereas a user with a high threshold may respond with low engagement. Marketers and businesses would like to be able to understand the true levels of engagement from a campaign regardless of the variability in threshold levels across campaign participants. Accordingly, response normalization model **106** can be used to compute the true engagement levels of a campaign, similar to how the true user responses are computed in FIG. **4**.

For example, in the case of a social post to Facebook®, the levels of engagement can be likes, comments, and shares. In general, a user does not share a social post unless the user is very stimulated by the social post. Thus, sharing a post can be considered to be the highest level of engagement for a Facebook® post. Further, marketers place a higher value on shares, as opposed to comments or likes, because sharing a post enables the post to be seen by the share's personal network. Thus, in this example shares can be weighted higher when calculated the engagement level of the campaign to generate the true success of the campaign.

In one or more implementations, response normalization model **106** can be used to aggregate sentiment of a social post by normalizing the sentiment using the personality of each user. For example, social marketers are interested in maximizing the positive engagement for social posts to social network, such as Facebook®. A typical Facebook® brand page, for example, may attract hundreds of comments by users that subscribe to, or like, the brand page. Response normalization model **106** can be used to generate a sentiment scoring engine to find the positivity or negativity for each comment. Marketers would like to get a global sense of the true sentiment across all the comments of a social post. As described throughout, however, one cannot simply add or average the sentiment scores across all comments because of the individual behavioral biases of the users that respond to the social post. Thus, in some case, response normalization model can be used to reveal the true response to a social post at a global level, without necessarily discerning the true sentiment for each individual user.

In one or more implementations, response normalization model **106** can be used to enable customized customer service. For example, response normalization model **106** can be used to determine whether a customer is an optimist or a

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ioral classification module **104** may assign a jump value for the optimist group that is configured to cancel out, or remove, the optimistic bias of users in the optimist group.

Similarly, users in a pessimist group tend to be influenced by their pessimistic nature to respond with response scores that are low. For example, if a pessimistic user's inner self has chosen a score of 3, the user is likely to "jump" or "tilt" to choose a lower score of 2 with certain probability due to the user's pessimistic bias. Thus, behavioral classification module **104** may assign a jump value for the pessimist group that is configured to cancel out, or remove, the pessimistic bias of users in the pessimist group

In one or more implementations, the jump value is selected to be one unit on an ordinal scale. Continuing with the example above, the behavioral classification module **104** may assign a jump value of +1 for the pessimist group, a jump value of 0 for the realist group, and a jump value of −1 for the optimist group. It is to be appreciated that these jump values will normalize user responses **202** by increasing the response score of pessimistic users by a value of 1, and decreasing the response score of optimistic users by a value of 1. Of course the jump value may correspond to any score or numerical value. For example, in some cases the jump values may be a fraction of a unit. How the jump value is used to remove the behavioral bias from user responses is described in more detail below with regards to FIG. **4**.

Clustering users in a population into behavioral classification groups provides the response normalization model **106** with a good understanding of the behavioral biases of the population of users. The response normalization model **106** can then be used to normalize user responses to a subsequent event by users of the population.

Normalizing User Responses to an Event

FIG. **4** illustrates a system **400** in an example implementation in which the response normalization model **106**, generated in FIG. **2**, is used to normalize user responses to an event by removing behavioral bias from the user responses.

In FIG. **4**, user responses **402** to an event are received from one or more users of the population. For example, the user responses **402** can be received in response to a survey or in response to a new social post posted to a social network.

As described in FIG. **2**, behavioral classification module **104** can determine a response score **404** for each user response **402**. Response score **404**, however, is a function of the true response of each user and the user's behavioral bias. Therefore, behavioral classification module **104** applies response normalization model **106** to user responses **402** to normalize the user responses by removing behavioral bias from the user responses **402** to generate true user responses **406**.

To do so, for each user response **402**, response normalization model **106** can identify an associated user of the user response as well as the behavioral classification group of the user. The response normalization model **106** can then normalize the user response **402** by applying the jump value associated with the behavioral classification group to generate the true user response **406**. The jump value may increase or decrease the response score **404** of the response to a true response score **408**. In effect, therefore, applying the jump score cancels out the behavioral bias of the user.

For example, if the user is associated with the pessimist group, the response score **404** of the user response **402** can be increased by 1 unit. In other words, if a user in the pessimist group responds with a response score **404** of 2, this response score may be adjusted by increasing the response score by the jump value of 1 to a true response score **408** of 3. Similarly, if the user is associated with the optimist group, the response score **404** of the user response **402** can be decreased by one unit. In other words, if a user in the optimist group responds with a response score **404** of 5, this response score may be adjusted by decreasing the response score by the jump value of 1 to a true response score **408** of 4. If the user is associated with the realist group, however, the response score **404** of the user response **402** can remain unaltered such that the true response score **408** is equal to the response score **404**.

In one or more implementations, the response normalization model **106** is configured to identify unusual user responses. As described herein, an unusual user response corresponds to a user response that includes a response score that is outside of a range of response scores associated with the behavioral classification group of the user. For example, if a user in the optimist group responds to an event with a negative response score (e.g., a score less than 3 on a scale of 1 to 5) this is unusual. Similarly, if a user in the pessimist group responds to an event with a positive response score (e.g., a score greater than 3 on a scale of 1 to 5), this is also unusual

In some cases, the identification of unusual responses may trigger a notification to investigate the unusual response further. For example, if a user in the optimist responds negatively, this may indicate impending customer churn and should be investigated further. Alternately, if a user in the pessimist group responds positively, this may indicate that a business is doing something really well and this response should also be investigated further.

Implementation Examples

In one or more embodiments, behavioral classification module **104** uses a joint probability mass function to cluster users into different behavioral classification groups based on user responses to one or more events.

In this example, behavioral classification groups include a pessimist group, a realist group, and an optimist group. X_{ij} corresponds to a user response of an ith user for a jth event. To begin, behavioral classification module **104** assumes that each user is in the realist group. If behavioral classification module **104** determines that a user is not in the realist group, the user is moved with a certain probability to the pessimist group or the optimist group.

Assuming a population of n total users, where n_1 users are in the optimist group (O), n_2 users are in the realist group (R), and n_3 users are in the pessimist group (P), with $n=n_1+n_2+n_3$, the response normalization model **106** uses the following joint probability mass function:

$$l(\vec{x}) \propto \frac{n_1!n_2!n_3!}{n!}\prod_j\prod_i\prod_r p_{ijr}^{x_{ijr}}$$

In the above equation, r corresponds to a behavioral classification group of a user, and x_{ijr} corresponds to the number of users in an rth behavioral classification group that chose an ith option for a jth event. In this equation, individual x_{ijr}'s may not be known, but can be determined from the fact that x_{ij}=xijP+xijR+xijO.

Based on standard multinomial distributions it is known that a max occurs when the probability of a given cell is equated to a proportion of the count. Thus, the following algorithm can be used to estimate the parameters:

1) Cluster the users of the population so that n_1 users of the population are in the optimist group (O), n_2 users of the

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individual user response score in the form of a number on a scale of 1 to 5 for each of a series of questions. In this example, an answer of 1 corresponds to a poor or negative score, and an answer of 5 corresponds to a high or positive score.

Example **300** includes optimistic user answers **302** to a survey and pessimistic user answers **304** to the survey. In this case, the optimistic user has answered questions **1-8** of the survey with scores of 4, 3, 4, 4, 3, 5, 4, and 5. Thus, a response score **204** for the optimistic user can be calculated by taking an average of the scores which yields a response score of 4.0. Similarly, the pessimistic user has answered questions **1-8** of the survey with scores of 2, 1, 1, 2, 3, 2, 1, and 2. Thus, a response score **204** for the pessimistic user can be calculated by taking an average of the scores which yields a response score of 1.75.

In one or more embodiments, behavioral classification module **104** generates a response score **204** based on a user interaction, or combination of user interactions, with a social post on a social network. In this case, the response score **204** may be based on the relative negativity or positivity indicated by the user interaction or combination of user interactions. For example, a user that simply clicks a "like" button may not like the social post as much as a different user that "comments and shares" the social post.

In one embodiment, response scores **204** can be assigned to user interactions with a social post as follows: a lowest score of "1" is assigned for viewing the social post but not interacting with the social post, a low score of "2" is assigned for liking the social post, an average score of "3" is assigned for commenting on the social post, a high score of "4" is assigned for sharing the social post, and a highest score of "5" is assigned for commenting and sharing the social post. It is to be appreciated, however, that this is just one possible example of generating response scores **204** for user interactions with social posts on social networks, and that any type of criteria can be used to generate response scores from user interactions with social posts.

As described above, user responses **202** to an event are a function of a user's true response to the event and the behavioral bias of the user. For example, an optimistic user may respond to an event with a score that is higher than what the user's inner self truly believes. In contrast, a pessimistic user may respond to an event with a score that is lower than what the user's inner self truly believes.

It is to be noted, therefore, that user responses **202** may be skewed by the behavioral bias of the users in the population. For example, if the population of users responding to an event includes a high percentage of positive or optimistic users, the result of the user responses may be more positive than what the users in the population truly believe. Similarly, if the population of users responding to an event includes a high percentage of negative or pessimistic users, the result of the user responses may be more negative than what the users in the population truly believe. Conventional solutions fail to take the behavioral biases of users into account when analyzing the results of user responses to an event, and thus are unable to determine the true user response to the event.

In accordance with various embodiments, behavioral classification module **104** generates a response normalization model **106** from the user responses **202**. The response normalization model is configured to learn the mix of the different behavioral types of users of the population (e.g., the mix of optimistic, pessimistic, and realistic users). The response normalization model can then be used to normalize the user responses by removing behavioral bias from the user responses to generate true user responses that correspond to what the users in the population truly believe.

To generate the response normalization model **106**, the users of the population are clustered into behavioral classification groups based on the response scores **204**. In example **200**, the behavioral classification groups include a first behavioral classification group **206** that includes users with response scores that are lower relative to the users of the population of users, and a second behavioral classification group **208** that includes users with response scores that are higher relative to the users of the population.

In one or more implementations, first behavioral classification group **206** corresponds to a pessimist group that includes users with response scores that are more negative on a negative-to-positive scale relative to the users in the population. In this implementation, the second behavioral classification group **208** corresponds to an optimist group that includes users with response scores that are more positive on the negative-to-positive scale relative to the population of users. In some cases, this implementation may also include a realist group that includes users with response scores that correspond to an average response score of the population of users.

It is to be appreciated that any type of behavioral classification groups based on any type of ordinal scale can be used to classify the users, such as negative and positive classification groups, active and inactive classification groups, or happy and sad classification groups, to name just a few.

To cluster the users into the behavioral classification groups, the behavioral classification module **104** orders the users of the population based on the response scores **204**. For example, the users can be ordered from users with low response scores **204** to users with high response scores **204**. Behavioral classification module **104** then clusters the users into the different behavioral classification groups by applying one or more "cut-off" percentages to the ordered users of the population.

For example, a first predetermined cut-off percentage can be used to cluster the users with the lowest response scores **204** into the first behavioral classification group **206**, and a second cut-off percentage can be used to cluster the users with the highest response scores **204** into the second behavioral classification group **208**.

The cut-off percentages can be selected based on the percentage of users in a population that generally correspond to each group. Consider, for example, that in a typical population of users, 10% of the users are optimists, 20% of the users are pessimists, and 70% of the users are realists. In this example, if there are 100 users in the population, then the 10 users with the highest response scores **204** will be clustered into an optimist group, the 20 users with the lowest response scores **204** will be clustered into the pessimist group, and the remaining 70 users will be clustered into the realist group.

In one or more implementations, behavioral classification module **104** assigns a jump value to each of the behavioral classification groups. In FIG. **2**, a jump value **210** is assigned to first behavioral classification group **206** and a jump value **212** is assigned to second behavioral classification group.

The jump value is configured to remove behavioral bias from user responses. Users in an optimist group tend to be influenced by their optimistic nature to respond with response scores that are high. For example, if an optimistic user's inner self has chosen a score of 3, the user is likely to "jump" or "tilt" to choose a higher score of 4 with certain probability due to the user's optimistic bias. Thus, behav-

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that includes users with response scores that are higher relative to the other users of the population.

In one or more implementations, the first behavioral classification group corresponds to a pessimist group that includes users with response scores that are more negative on a negative-to-positive scale relative to the users of the population, and the second behavioral classification group corresponds to an optimist group that includes users with response scores that are more positive on the negative-to-positive scale relative to the population of users.

Identifying different behavioral classification groups may enable marketers and businesses to target each of these clusters differently. For example, the social posts presented to users in a pessimist group may be different than the social posts presented to users in an optimist group.

Furthermore, the response normalization model can be used to normalize user responses by one or more users of the population to a new event by removing behavioral bias from the user responses to generate true user responses to the new event. To normalize the user responses, the response normalization model adjusts the user responses based on the behavioral classification groups. For example, user response scores of users in a pessimist group may be increased to cancel out the negative bias of the users of the pessimist group. Similarly, user response scores of users in an optimist group may be decreased to cancel out the positive bias of the users in the optimist group. By removing the behavioral bias from the user responses, the response normalization model provides a better indication of the true user response by the users of the population.

In some cases, the true user responses can be used for stratified analysis. For example, the mean or median scores of the true user responses of pessimists can be compared with the scores of the true user response of optimists. This is important because in conventional stratified analysis processes, the pessimists and the optimists may cancel each other out which hides the true user response.

In the following discussion, an example environment is first described that may employ the techniques described herein. Example procedures are then described which may be performed in the example environment as well as other environments. Consequently, performance of the example procedures is not limited to the example environment and the example environment is not limited to performance of the example procedures.

Example Environment

FIG. **1** illustrates an environment **100** in an example implementation that is operable to employ techniques described herein. Environment **100** includes a computing device **102**, which may be configured in a variety of different ways.

Computing device **102**, for instance, may be configured as a desktop computer, a laptop computer, a mobile device (e.g., assuming a handheld configuration such as a tablet or mobile phone), and so forth. Thus, computing device **102** may range from full resource devices with substantial memory and processor resources (e.g., personal computers, game consoles) to a low-resource device with limited memory and/or processing resources (e.g., mobile devices). Additionally, although a single computing device **102** is shown, computing device **102** may be representative of a plurality of different devices, such as multiple servers utilized by a business to perform operations "over the cloud" as further described in relation to FIG. **7**.

Computing device **102** is illustrated as including a behavioral classification module **104**. The behavioral classification module **104** is representative of functionality to perform one or more techniques described herein. Behavioral classification module **104** is configured to build a response normalization model **106** from user responses to one or more events. Response normalization model **106** is configured to normalize user responses to an event by removing behavioral bias from the user responses. Although illustrated as part of computing device **102**, functionality of the behavioral classification module **104** may also be implemented in a distributed environment, remotely via a network **108** (e.g., "over the cloud") as further described in relation to FIG. **7**, and so on.

Although network **108** is illustrated as the Internet, the network may assume a wide variety of configurations. For example, network **108** may include a wide area network (WAN), a local area network (LAN), a wireless network, a public telephone network, an intranet, and so on. Further, although a single network **108** is shown, network **108** may also be configured to include multiple networks.

Generating the Response Normalization Model

FIG. **2** illustrates a system **200** in an example implementation in which behavioral classification module **104** generates response normalization model **106** from user responses to one or more events. As described in more detail in FIG. **4**, response normalization model **106** can then be used to normalize user responses to an event by removing behavioral bias from the user responses.

In this example, user responses **202** to one or more events are received by behavioral classification module **104** from users of a population. As described herein, an "event" includes any type of event which causes a measurable user response, such as a survey, a questionnaire, or a social post to a social network, to name just a few. The population can correspond to any type of population of users, such as clients, customers, or employees of an organization or business. The population can also correspond to users that subscribe, like, or follow a page or handle of a business or organization on a social network, such as Facebook®, Twitter®, or Instagram®, to name just a few.

As described herein, "user responses" include any type of user response to, or interaction with, an event. For example, if the event is a survey, user responses can include user answers to questions of the survey. As another example, if the event is a social post to a social network, user responses **202** can include user interactions with the social post, such as liking, commenting on, or sharing the social post.

Behavioral classification module **104** is configured to determine a response score **204** for each user of the population based on the user responses **202** to the one or more events. In some cases, the response score may be based on an ordinal scale, and may indicate the relative negativity or positivity of user response **202**.

Response score **204** is based on multiple user responses by each user to a series of events. For example, the response score **204** may be based on user answers to multiple surveys and/or based on user interactions with multiple social posts to a social network.

When user responses **202** correspond to multiple responses to multiple events, behavioral classification module **104** can determine an individual user response score for each response by a user to each event. The response score **204** for the user can then be determined by aggregating each individual user response score, such as by summing, averaging, or taking the median of the individual user response scores for a user.

Consider, for example, FIG. **3** which illustrates an example **300** of user responses to multiple questions of a survey. In this example, the user responses each include an

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NORMALIZING USER RESPONSES TO AN EVENT BY REMOVING BEHAVIORAL BIAS

RELATED APPLICATIONS

This application claims benefit of priority to Indian Provisional Application Serial No. 1619/CHE/2014 entitled "NORMALIZING USER RESPONSES TO AN EVENT BY REMOVING BEHAVIORAL BIAS" filed Mar. 26, 2014. The content of which is incorporated by reference herein in its entirety.

BACKGROUND

When answering questions on a survey, or interacting with social posts on a social network, users tend to express their innate optimism or pessimism. Thus, user responses to an event, such as a survey or social post, can be skewed by this behavioral bias of the users.

The background description provided herein is for the purpose of generally presenting the context of the disclosure. Work of the presently named inventors, to the extent the work is described in this background section, as well as aspects of the description that may not otherwise qualify as prior art at the time of filing, are neither expressly nor impliedly admitted as prior art against the present disclosure.

SUMMARY

This document describes techniques for normalizing user responses by removing behavioral bias. In one or more implementations, a response normalization model is built from user responses to one or more events. The response normalization model clusters users into behavioral classification groups based on the user responses. The response normalization model can then be used to normalize user responses by removing behavioral bias from user responses.

This Summary introduces a selection of concepts in a simplified form that are further described below in the Detailed Description. As such, this Summary is not intended to identify essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description is described with reference to the accompanying figures. In the figures, the left-most digit of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different instances in the description and the figures indicate similar or identical items.

FIG. **1** illustrates an environment in an example implementation that is operable to employ techniques described herein.

FIG. **2** illustrates a system in an example implementation in which a behavioral classification module generates a response normalization model from user responses to one or more events.

FIG. **3** illustrates an example of user responses to multiple questions of a survey.

FIG. **4** illustrates a system in an example implementation in which a response normalization model is used to normalize user responses to an event by removing behavioral bias from the user responses.

FIG. **5** illustrates a procedure in an example implementation in which a response normalization model is generated.

FIG. **6** illustrates a procedure in an example implementation in which user responses to an event are normalized using a response normalization model.

FIG. **7** illustrates an example system including various components of an example device that can be implemented as any type of computing device as described and/or utilized with reference to FIGS. **1-6** to implement embodiments of the techniques described herein.

DETAILED DESCRIPTION

Overview

When answering questions on a survey, or interacting with social posts on a social network, users tend to express their optimism or pessimism. For example, when a user responds to an event, a score of the user's response on an ordinal scale (e.g., negative to positive) is influenced by the user's behavioral bias.

Consider, for example, a survey that asks a user to rate a service on a scale of 1 to 5, where 1 corresponds to a poor or low rating and 5 corresponds to an excellent or high rating. In this case, the score which the user responds with will be a function of what the user's "inner self" truly believes as well as the user's behavioral bias. In other words, the "true response" of the user will be skewed by the user's behavioral bias. For example, user responses by optimistic users tend to be more positive than what the user's inner self truly believes, whereas user responses by pessimistic users tend to be more negative than what the user's inner self truly believes.

Thus, the true user response to an event by a population of users is often hidden by the individual behavioral biases of users in the population. For example, if the population of users responding to an event includes a high percentage of positive or optimistic users, the result of the user responses may be more positive than what the users in the population truly believe. Similarly, if the population of users responding to an event includes a high percentage of negative or pessimistic users, the result of the user responses may be more negative than what the users in the population truly believe. Conventional solutions fail to take the behavioral biases of users into account when analyzing the results of user responses to an event, and thus are unable to determine the true user response to the event.

Techniques are described for building a response normalization model from user responses to events. The response normalization model is configured to learn the mix of the different behavioral types of users in a population. For example, in one or more implementations the mix of optimistic, pessimistic, and realistic users in a population is determined by the response normalization model. The response normalization model can then be used to normalize the user responses by removing behavioral bias from the user responses to generate true user responses that correspond to what the users of the population truly believe.

To build the response normalization model, user responses to one or more events are received from users of a population. A response score can be determined for each user of the population based on the user responses. The users of the population can then be clustered into behavioral classification groups based on the response scores. The behavioral classification groups may include at least a first behavioral classification group that includes users with response scores that are lower relative to the other users of the population, and a second behavioral classification group

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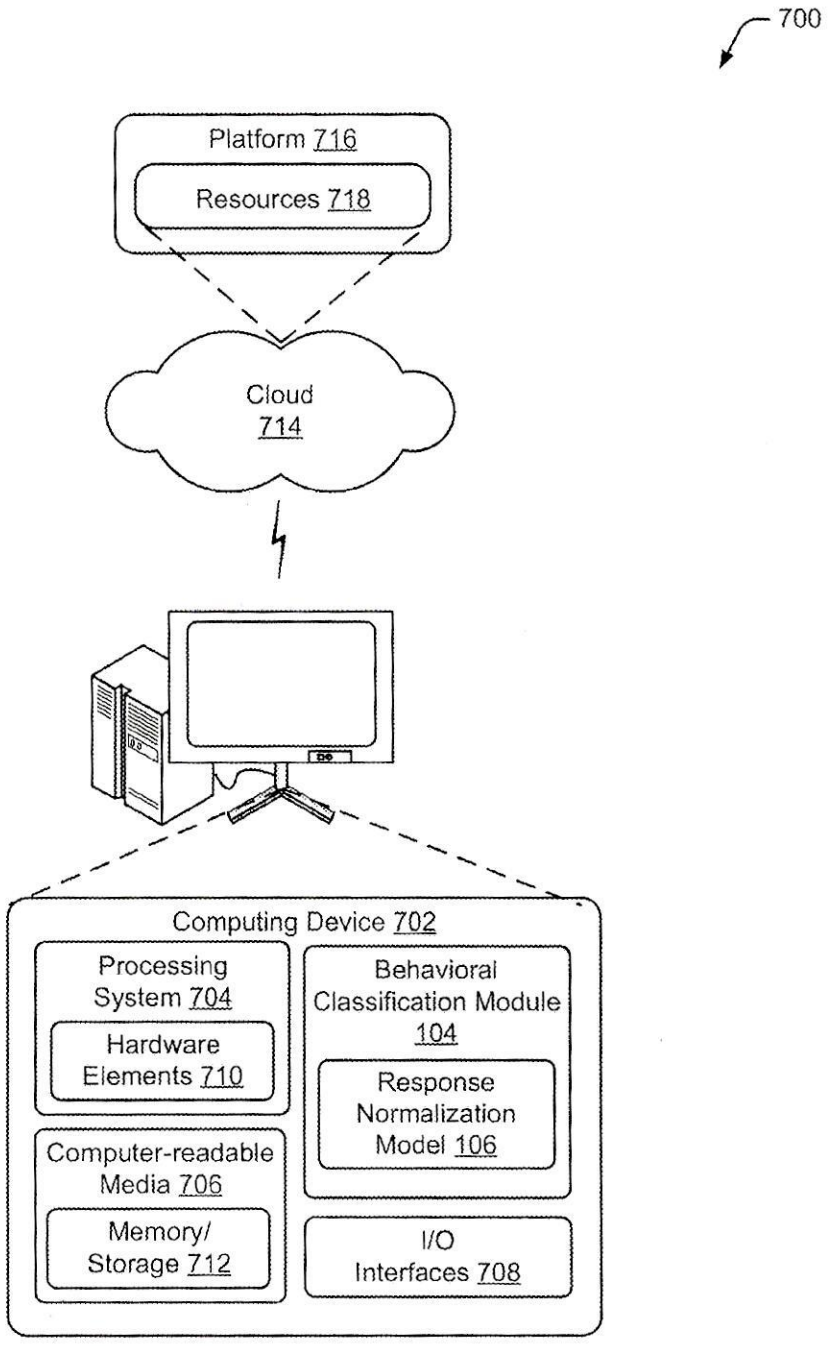


Fig. 7

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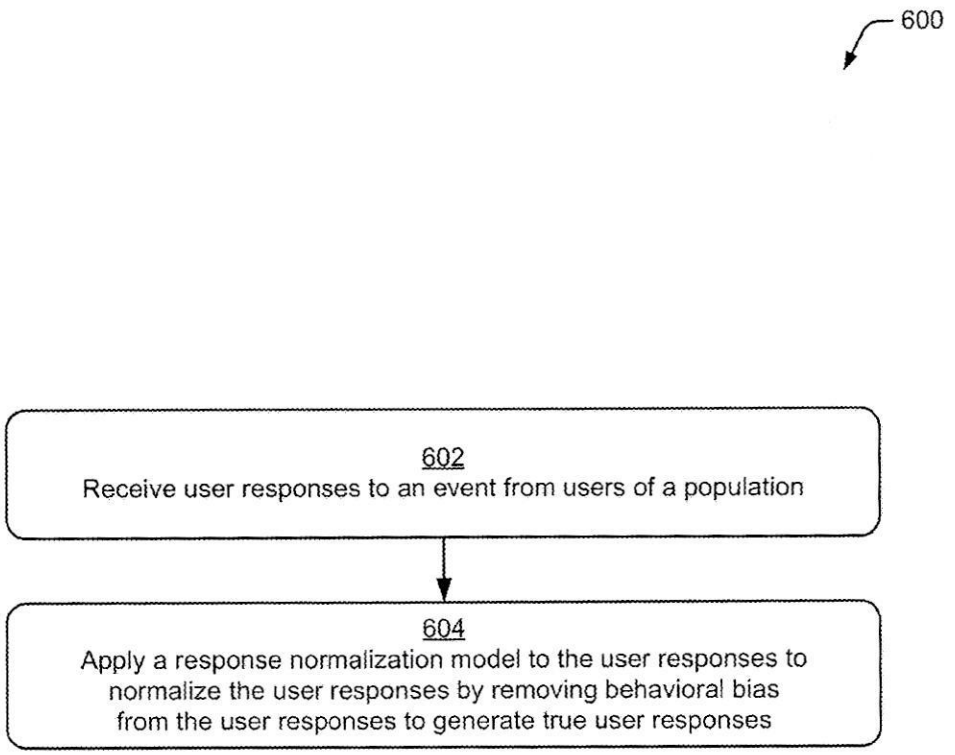


Fig. 6

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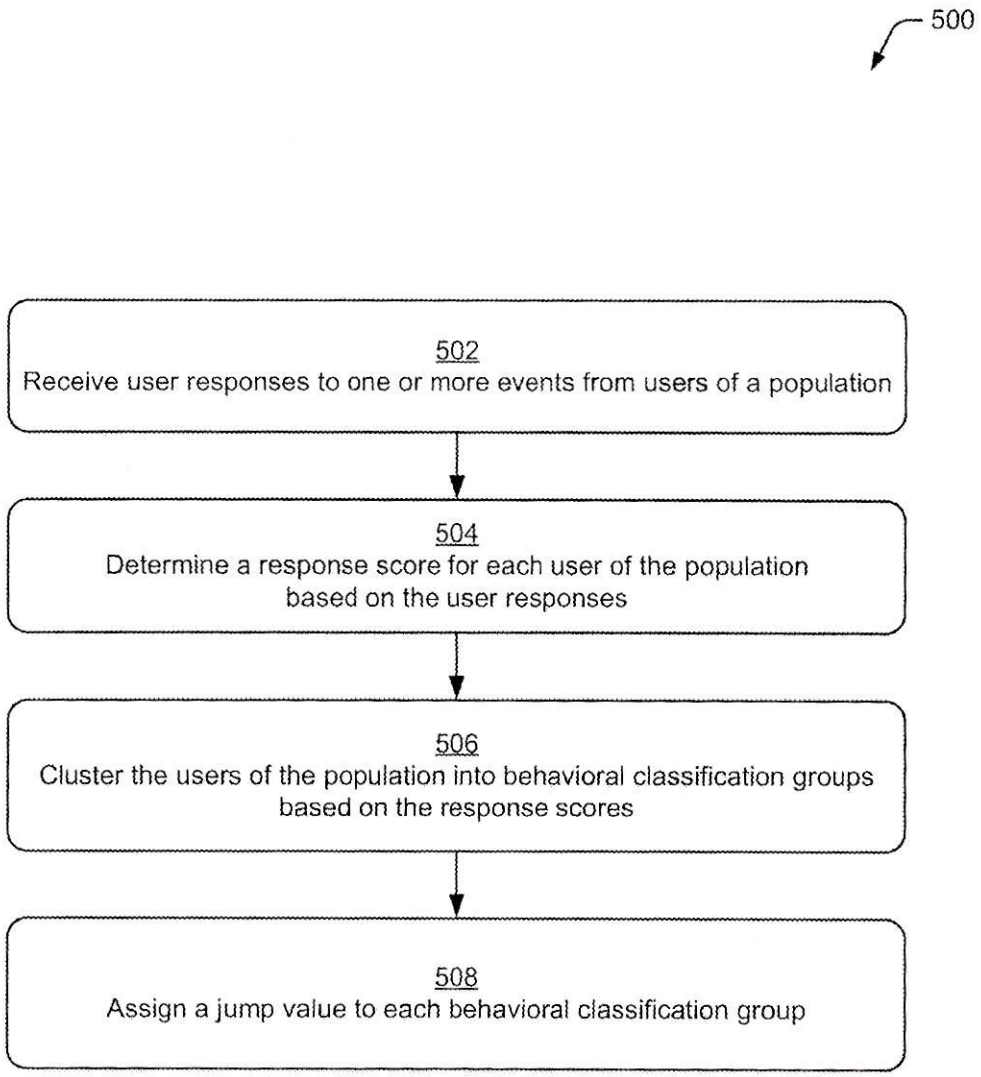


Fig. 5

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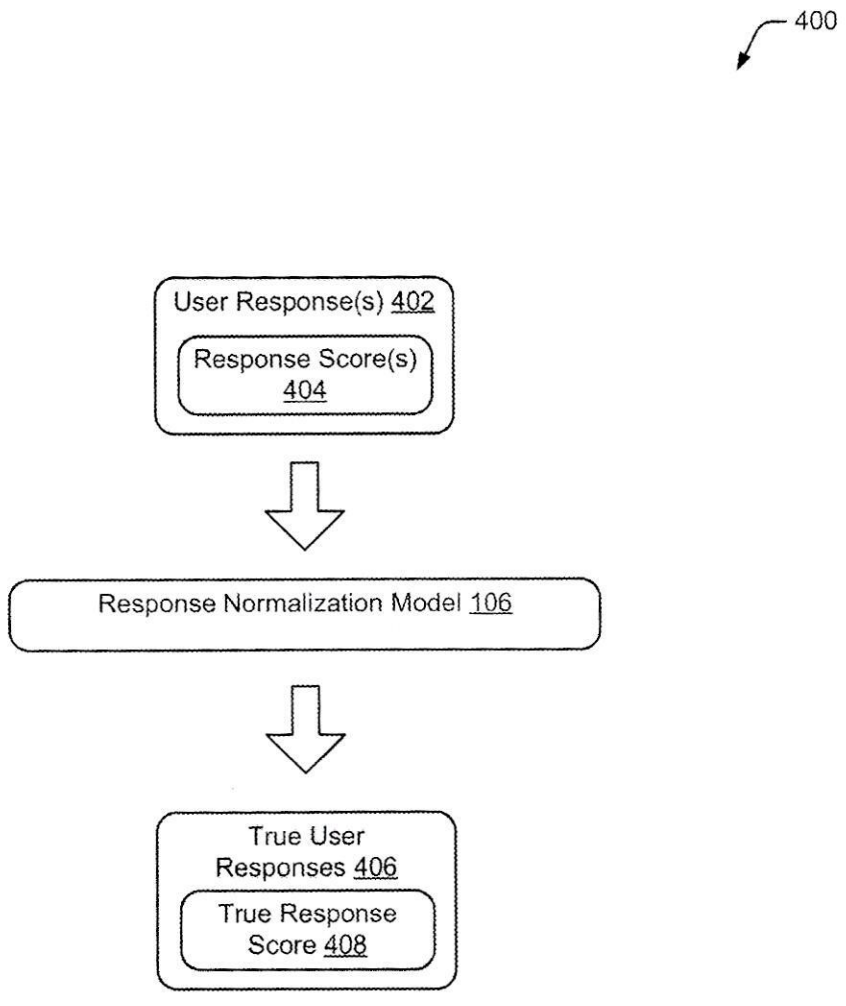


Fig. 4

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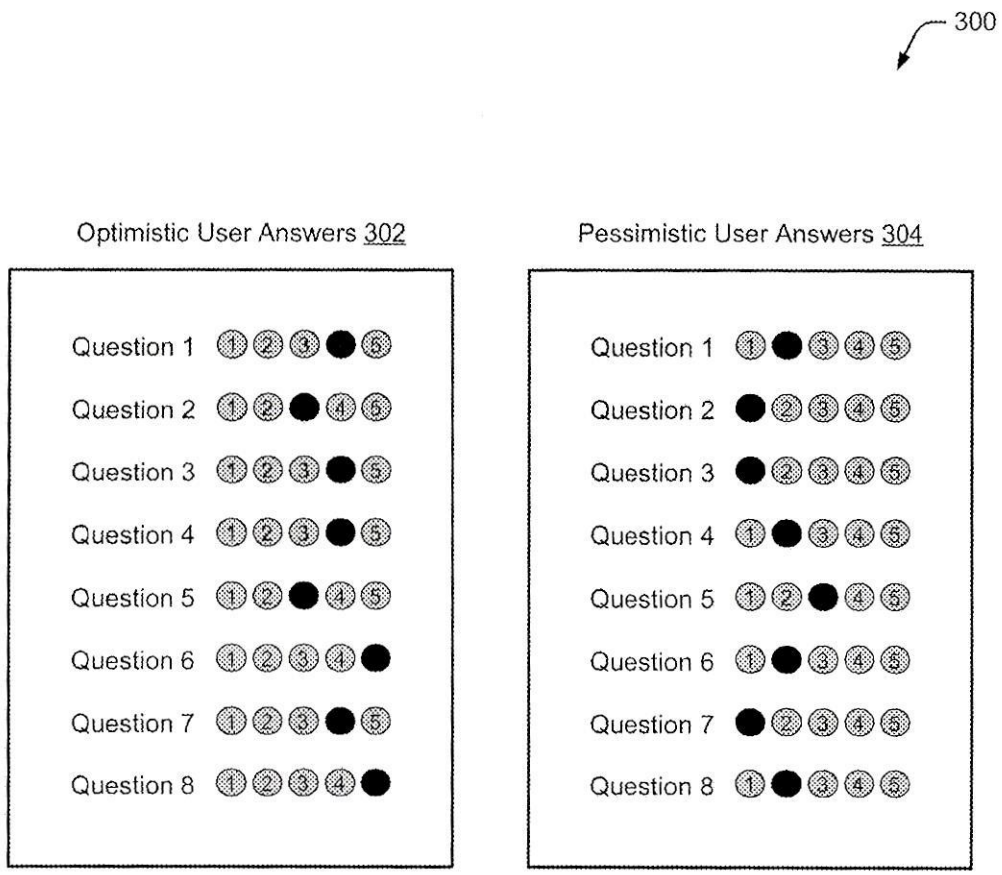


Fig. 3

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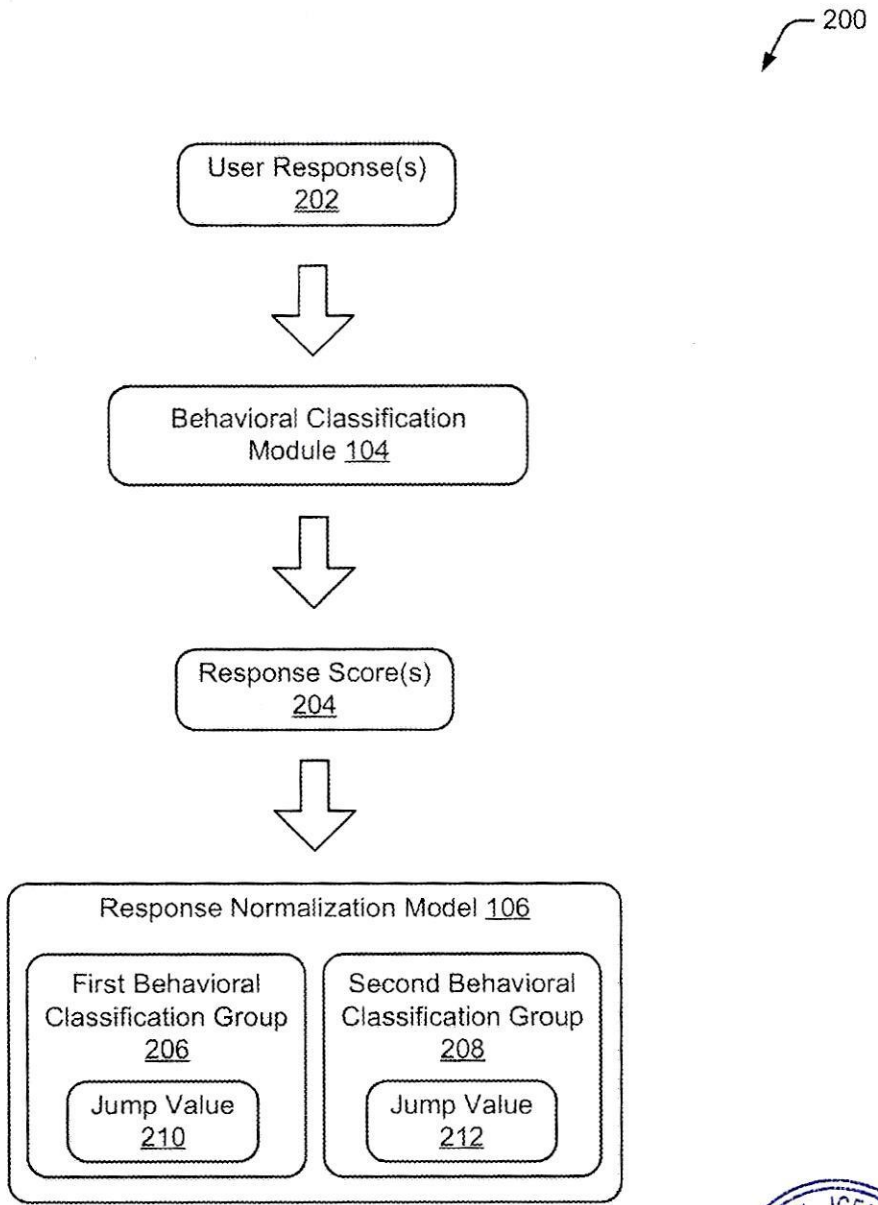


Fig. 2

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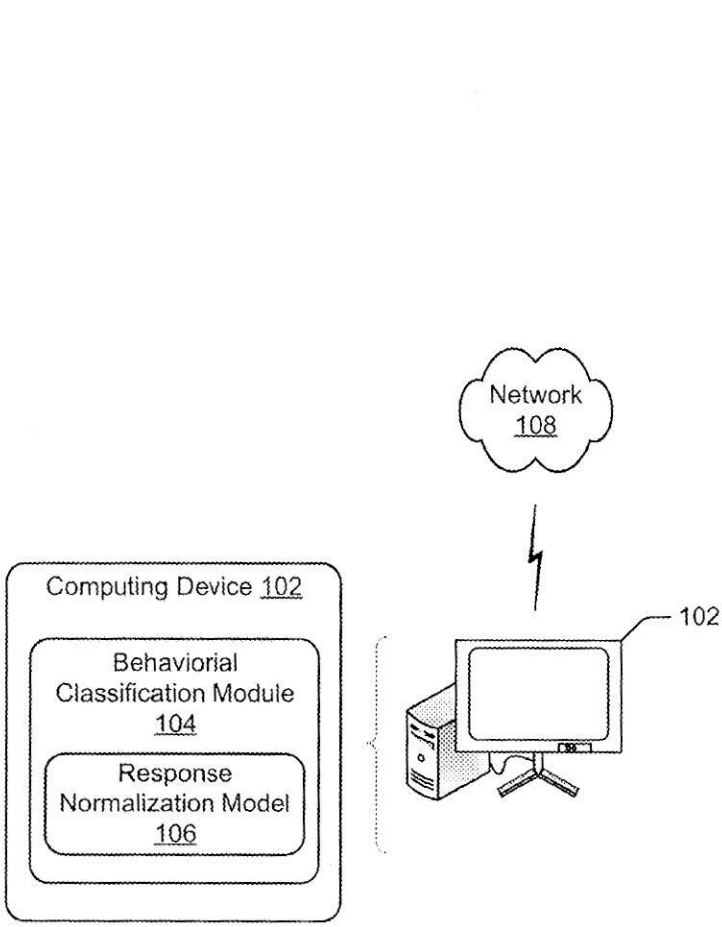


Fig. 1

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(3)


US010318971B2

(12) **United States Patent**
Hande et al.

(10) **Patent No.: US 10,318,971 B2**
(45) **Date of Patent: Jun. 11, 2019**

(54) **NORMALIZING USER RESPONSES TO AN EVENT BY REMOVING BEHAVIORAL BIAS**

(71) Applicant: **Adobe Inc.**, San Jose, CA (US)

(72) Inventors: **Sayaji Hande**, Ghaziabad (IN); **Ramesh Srinivasaraghavan**, Bangalore (IN); **Vineet Gupta**, Kanpur (IN); **Sandeep Zechariah George Kollannur**, Kochi (IN)

(73) Assignee: **Adobe Inc.**, San Jose, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 904 days.

(21) Appl. No.: **14/280,393**

(22) Filed: **May 16, 2014**

(65) **Prior Publication Data**

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(51) **Int. Cl.**

G06Q 30/00	(2012.01)
G06Q 30/02	(2012.01)
G06Q 50/00	(2012.01)

(52) **U.S. Cl.**

CPC ***G06Q 30/0203*** (2013.01); ***G06Q 50/01*** (2013.01)

(58) **Field of Classification Search**

CPC G06Q 10/06393; G06Q 30/02; G06Q 30/0201; G06Q 30/0203; G06Q 30/0204; G06Q 50/01

See application file for complete search history.

(56) **References Cited**

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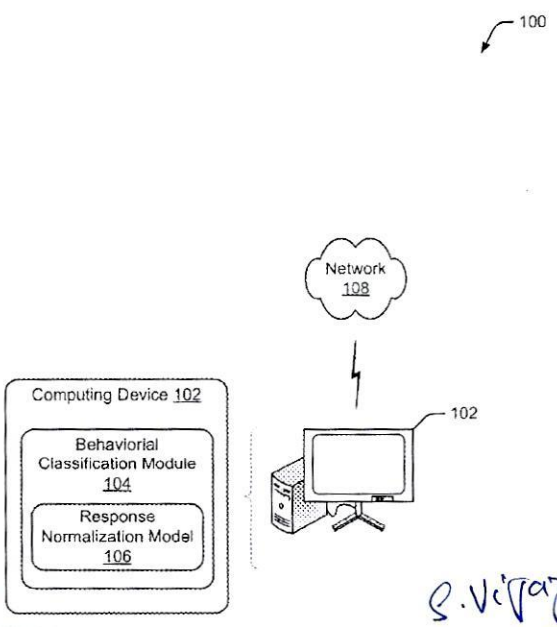
* cited by examiner

Primary Examiner — William S Brockington, III
(74) *Attorney, Agent, or Firm* — SBMC

(57) **ABSTRACT**

This document describes techniques for normalizing user responses by removing behavioral bias. In one or more implementations, a response normalization model is built from user responses to one or more events. The response normalization model clusters users into behavioral classification groups based on the user responses. The response normalization model can then be used to normalize user responses by removing behavioral bias from user responses.

20 Claims, 7 Drawing Sheets





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(2)

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IP Australia

CERTIFICATE OF GRANT

INNOVATION PATENT

Patent number: 2020102178

The Commissioner of Patents has granted the above patent on 30 September 2020, and certifies that the below particulars have been registered in the Register of Patents.

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SHAHINA PARVEEN M of Associate Professor, Information Science & Engineering Dept., CMR Institute of Technology AECS Layout Bengaluru ,Karnataka 560 037 India

Title of invention:

Smart School Bag For Assisting and Protecting the School Students by Tracking the Geographical Location

Name of inventor(s):

SINGH, SURENDRA PAL; R., SEKAR; B., JOHN PHILIP; KUMAR, GRANDHI SURESH; KALYAN, S. S. S.; D., PALANIKKUMAR; P., JUSTIN SUDHAKAR and M., SHAHINA PARVEEN

Term of Patent:

Eight years from 8 September 2020

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

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Commissioner of Patents

PATENTS ACT 1990

The Australian Patents Register is the official record and should be referred to for the full details pertaining to this patent.

S. Vijayalakshmi

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Extracts from the Patents Act, 1990

Sect 120(1A) Infringement proceedings in respect of an innovation patent cannot be started unless the patent has been certified.

Sec 128 **Application for relief from unjustified threats**

(1) Where a person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings a person aggrieved may apply to a prescribed court, or to another court having jurisdiction to hear and determine the application, for:

(a) a declaration that the threats are unjustifiable; and

(b) an injunction against the continuance of the threats; and

(c) the recovery of any damages sustained by the applicant as a result of the threats.

(2) Subsection (1) applies whether or not the person who made the threats is entitled to, or interested in, the patent or a patent application.

Sec 129A **Threats related to an innovation patent application or innovation patent and courts power to grant relief.**

Certain threats of infringement proceedings are always unjustifiable.

(1) If:

(a) a person:

(i) has applied for an innovation patent, but the application has not been determined; or

(ii) has an innovation patent that has not been certified; and

(b) the person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings in respect of the patent applied for, or the patent, as the case may be;

then, for the purposes of an application for relief under section 128 by the person threatened, the threats are unjustifiable.

Courts power to grant relief in respect of threats made by the applicant for an innovation patent or the patentee of an uncertified innovation patent

(2) If an application under section 128 for relief relates to threats made in respect of an innovation patent that has not been certified or an application for an innovation patent, the court may grant the application the relief applied for.

Courts power to grant relief in respect of threats made by the patentee of certified innovation patent

(3) If an application under section 128 for relief relates to threats made in respect of a certified innovation patent, the court may grant the applicant the relief applied for unless the respondent satisfies the court that the acts about which the threats were made infringed, or would infringe, a claim that is not shown by the applicant to be invalid.

Schedule 1 **Dictionary**

certified, in respect of an innovation patent other than in section 19, means a certificate of examination issued by the Commissioner under paragraph 101E(c) in respect of the patent

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CERTIFICATE OF GRANT

INNOVATION PATENT

Patent number: 2020102044

The Commissioner of Patents has granted the above patent on 23 September 2020, and certifies that the below particulars have been registered in the Register of Patents.

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Title of invention:

A SMART AND AUTOMATED PATIENT MONITORING BED FOR COVID PATIENTS

Name of inventor(s):

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Term of Patent:

Eight years from 28 August 2020

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

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ICFAI FOUNDATION FOR HIGHER EDUCATION HYDERABAD

Dated this 23rd day of September 2020

Commissioner of Patents

S. Vijayalakshmi

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PATENTS ACT 1990

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

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Register of Patents

Patents Act 1990

Innovation Patent Patent no: 2020102044

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Title: A SMART AND AUTOMATED PATIENT MONITORING BED FOR COVID PATIENTS

Term: Eight years from 28 August 2020

Date Granted: 23 September 2020

Date Certified:

Date of Patent: 28 August 2020

Status: GRANTED

Expiry Date: 28 August 2028

Date Ceased:

Date Revoked:

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This data is current as of 2019-08-20 18:00 AEST.
Note: If not stamped and signed, this is not a certified copy for the purposes of section 195 or 197 of the Patents Act.

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(19) INDIA
(22) Date of filing of Application :26/11/2021

(21) Application No.202141054880 A
(43) Publication Date : 10/12/2021

(54) Title of the invention : CREATIVE POLICY MANAGEMENT FRAMEWORK METHOD FOR MANAGING INTERACTION BEHAVIORS IN IOT COLLECTIVES

(51) International classification :G06F0009500000, H04L0012660000, G06F0008200000, H04W0012080000, G06F0011340000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A method, system, and computer application are offered for applying policies in a managed systems context. In a system resource group(SRG), many heterogeneous elements are grouped. An application running on the controlled systems environment may see all of the many heterogeneous entities. The system resource group is subject to at least one membership requirement, defines a relationship between at least two heterogeneous entities, contains at least one policy defining an operation to be performed on the system resource group for a domain of the managed systems environment, and defines at least a portion of a policy framework between the system IOT based resource group and a different system resource group organized from an additional plurality of the heterogeneous entities. Based on an activity that incorporates relationship, policy, or policy, the resource group grows.

No. of Pages : 24 No. of Claims : 4