SmartLivingPlat

Plataforma Tecnológica de la Domótica
y las Ciudades Inteligentes

Boletín de Vigilancia Tecnológica

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SMART BUILDINGS
SMART CITIES
INDUSTRIA 4.0

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NOTICIAS

Smart Wome World magazine October 2022

Publicada en https://issuu.com/smarthomeworld, 29/10/2022.

The October issue of Smart Home World Magazine is currently online. Readers can get a quick update on recent happenings, developments, and the latest product launches. A must-read is our cover article on DLF-The Camellias, an exclusively designed futuristic clubhouse, where MACBEE (India), one of the top System Integrati companies, won the CEDIA Award in the Multi Dwelling Unit Design category for DLF - The Camellias.

ver más...

Open vs proprietary: choosing the right automation system for your smart home

Publicada en https://www.hestiamagazine.eu, 21/10/2022.

The era of smart homes is well upon us, and there have never been more devices, manufacturers and solutions for us to choose from. But before even dwelling on this overflow of possibilities, the most important choice when starting or updating your smart home remains that of your operating system. To be more specific, the choice between an open system and a proprietary system.

ver más...

Volver al índice

Matter 1.0 Is Finally Launched: Interoperable, Simple And Secure Smart Home Standard

Publicada en https://www.smarthomeworld.in, 05/10/2022.

DAVIS, CA – The Connectivity Standards Alliance, the international community of more than 550 technology companies committed to open standards for the Internet of Things, announced today the release of the Matter 1.0 specification and the opening of the Matter certification program. Member companies who make up all facets of the IoT now have a complete program for bringing the next generation of interoperable products that work across brands and platforms to market with greater privacy, security, and simplicity for consumers.

ver más...

AI can probably run your HVAC system better than you

Publicada en https://www.smartbuildingstech.com, 03/10/2022.

In both retrofit and new construction projects, building automation and management systems that utilize artificial intelligence can offer savings and benefits with already-installed technology. If you're the owner or operator of a commercial building, chances are you have invested in a building automation system (BAS) or building energy management system (BEMS). Good move. Buildings are a ripe target for efficiency improvements, and with efficiency, comes cost savings.

ver más...

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DALL·E Now Available Without Waitlist

Publicada en https://openai.com, 28/09/2022.

New users can start creating straight away. Lessons learned from deployment and improvements to our safety systems make wider availability possible. tarting today, we are removing the waitlist for the DALL·E beta so users can sign up and start using it immediately. More than 1.5M users are now actively creating over 2M images a day with DALL·E—from artists and creative directors to authors and architects—with over 100K users sharing their creations and feedback in our Discord community.

ver más...

AI is critical to operators' bid to reduce energy consumption in the 5G era

Publicada en https://futurenetworld.net, 26/09/2022.

In this light report, Caroline Gabriel, Research Director at Analysys Mason, explores how AI is critical to operators' bid to reduce energy consumption in the 5G era. Highlights: The mobile network has the greatest potential to deliver energy efficiencies
Telcos have considerable scope to reduce energy consumption
AI software solutions such as Nokia AVA can achieve savings rapidly and cost-effectively. Case Study: How KDDI used AI to cut RAN energy consumption in half.

ver más...

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EMPRESAS Y MERCADOS

Jasco joins Works with Home Assistant

Publicada en https://www.home-assistant.io, 26/10/2022.

Today we are excited to announce that Jasco has joined the Works with Home Assistant program as a Z-Wave partner. Jasco is well known in the US for their Z-Wave switches and plugs. As a partner, Jasco and Nabu Casa will be working together to ensure the best experience for connecting Jasco Z-Wave devices to Home Assistant.

ver más...

Amatrol Helps Close Supply Chain Skills Gap

Publicada en https://www.rockwellautomation.com/, 24/10/2022.

The Skill Boss Logistics system reduces training time for automated material handling equipment technicians from two years – to six months or less.

ver más...

Volver al índice

Signify, Upciti to partner on IoT, LED street lighting infrastructure

Publicada en https://www.smartbuildingstech.com, 07/10/2022.

New connected sensor technology to support smart street lighting, smart parking, crowd detection, and traffic management applications. Albany, N.Y. will pilot sensor platform with Signify’s connected LED luminaires and Interact IoT system.

ver más...

James Goodland, Director, RAIN RFID Solutions "Lets Talk Wireless IoT" Webcast

Publicada en https://wiot-tomorrow.com/, 22/09/2022.

The Webcast "Let's Talk Wireless IoT" goes into the second season! James Goodland from NXP Semiconductors is the guest for episode 7. Gold Sponsor NXP will be part of the Wireless IoT tomorrow 2022. NXP Semiconductors is a Gold Sponsor of the Wireless IoT tomorrow 2022. And coming with them....a variety of new RAIN RFID chips and ICs! Watch the webcast episode to find out more about the new chips, optimized features, and about the applications that are being made possible with them!

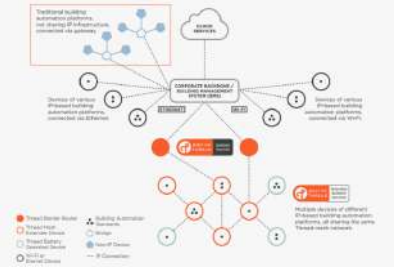
ver más...

Volver al índice

Thread in smart buildings network topology explained

Publicada en https://www.threadgroup.org, 14/09/2022.

Thread’s IPv6 based foundation brings many advantages to the Smart Building. Not only can it leverage widely proven cyber security mechanisms, but it can also integrate seamlessly in the existing building network infrastructure



ver más...

Amazon’s latest robotics, healthcare buys have the FTC asking more questions

Publicada en https://www.theverge.com, 05/09/2022.

The Federal Trade Commission (FTC) is investigating Amazon’s plans to acquire robot vacuum maker iRobot and the 1Life healthcare company behind One Medical, according to reports from Politico and The Wall Street Journal. Amazon announced a $3.9 billion deal to buy One Medical in July and said it would acquire iRobot for $1.7 billion just weeks later.

ver más...

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First Semi-Solid State Home and Portable Energy System Unveiled at IFA, System Offers Energy Security and Off-Grid Access

Publicada en altenergymag, 02/09/2022.

Zendure, a fast-growing clean energy tech start-up, is unveiling SuperBase V, the new benchmark for portable home energy systems, at the IFA consumer electronics show in Berlin.

ver más...

Canadian Solar Awarded 253 MWp Solar plus 1,000 MWh Battery Energy Storage Project in Chile Public Tender

Publicada en altenergymag, 01/09/2022.

The Zaldivar Project, located in Antofagasta Region, is currently at mid-stage development. The project is expected to start construction in 2024 and reach commercial operation in 2026. Once in operation, part of the electricity generated by solar will be purchased by a pool of distribution companies under 15-year U.S. dollar-dominated power purchase agreements (PPAs), and the remaining will be purchased by private energy off-takers.

ver más...

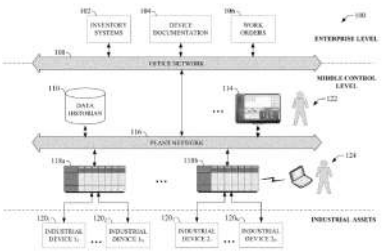
Volver al índice

PATENTES

AI extensions and intelligent model validation for an industrial digital twin

Publicada en PATENTSCOPE Industria intelligente, 01/09/2022.

Solicitante: Rockwell Automation Technologies, Inc.
Industrial smart data tags conforming to structured data types serve as the basis for creating a digital twin of an industrial asset. The digital twin can comprise an automation model and a mechanical model or other type of non-automation model, both of which reference the smart tags in connection with digitally modeling the industrial asset. The structured data topology offered by the smart tags allows the digital twin to be readily interfaced with artificial intelligence (AI) systems. AI analysis can leverage the smart tags to discover new relationships between key performance indicators and other variables of the asset and encode these relationships in the smart tags themselves.

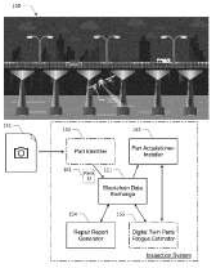


ver más...

Autonomous Inspection System within a Smart Self-Healing Node Centric Blockchain Network for Safety and Quality Management

Publicada en PATENTSCOPE Industria intelligente, 01/09/2022.

Solicitante: Michele Di Cosola
A system for providing an inspection system including an autonomous unmanned aerial vehicle (UAV) having the image capture device coupled together for generating image data used in inspections, a blockchain-based data exchange storage and verification device for maintaining image data, identified parts data, parts acquisition data, parts report data, and repair reports and corresponding repair data, a parts identifier, a parts identifier for generating one or more potential part identifications from the image data generated by the UAV



ver más...

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Conversation learning system using artificial intelligence avatar tutor, and method therefor

Publicada en Patentes AI patentscope, 01/09/2022.

Solicitante: CHO, Jisu [KR]
The present invention describes a method for providing a conversation learning system using an artificial intelligence avatar tutor, comprising steps in which: an artificial intelligence avatar explains a conversation topic and situation to a user; the artificial intelligence avatar first asks a question suitable for the topic and situation while starting a conversation; the artificial intelligence avatar expresses appropriate reactions while the user is speaking; a user's response is converted into text so as to be understood according to the context of the current conversation, and a response and a gesture of an artificial intelligence avatar is generated and expressed; a sentence is generated with a better expression than that of the user's response or an expression corrected for grammatical errors; and an advertisement banner is inserted into an artificial intelligence avatar background according to the conversation topic and situation.

ver más...

Data transmission method and apparatus

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: HUAWEI TECHNOLOGIES CO., LTD. [CN]
The present application relates to the technical field of communications. Disclosed are a data transmission method and apparatus. The method comprises: an SMF network element obtains first transmission delay information of data packet transmission between an access network element and a terminal device

ver más...

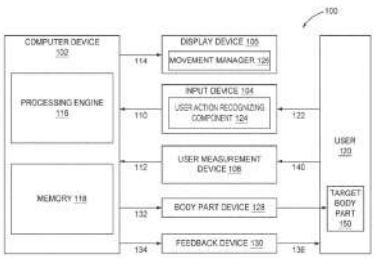
Volver al índice

Digital anatomical virtual extremities for pre-training physical movement

Publicada en PATENTSCOPE Industria intelligente, 01/09/2022.

Solicitante: Vincent John Macri

Aspects of the disclosure include methods and systems for pre-action training. In an aspect, a method is presented for constructing a user-controllable image comprising obtaining anatomical and physiological data associated with a body, storing the anatomical and physiological data in a database; and creating the user-controllable image based on the stored anatomical and physiological data. The user-controllable image may be configurable to a user.



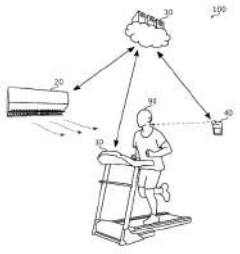
ver más...

Exercise control system, control device, exercise control method, and building

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD. [JP]

An exercise control system (100) comprises: an exercise device (10) that applies an exercise load on a user (90); an environment control device (20) that varies the environmental state of a space where the user exercises using the exercise device (10); and a control device (30), wherein the control device (30) includes an estimation unit (31) that estimates the perspiration of the user (90) on the basis of a detection result from a detector disposed in the space



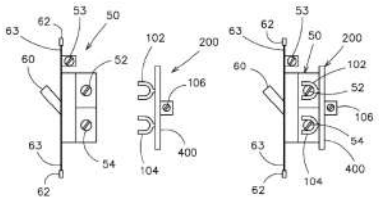
ver más...

Volver al índice

Home Automation Apparatus

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: Richard Anthony Bishel
An apparatus that physically and electrically attaches to an existing AC electrical switch, and controls the power to the electrical load via outputs from the existing electrical switch or from wireless commands from a remote controller.

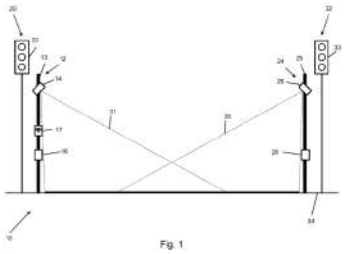


ver más...

Hospitality smart system

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitantes: RAYNESTORM LTD [GB]
The present invention provides a system for providing an illuminated walkway having an appearance that indicates its status (e.g. safe or unsafe for use). The illuminated walkway may be used to enable safe crossing of a surface. For example, the system may comprise an illumination source arranged to project light onto a surface to demarcate a walkway across the surface, wherein the illumination source is switchable between different states to change the appearance of the walkway.



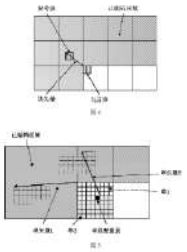
ver más...

Volver al índice

Image block prediction sample determining method, and encoding and decoding devices

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED [CN]
The present application relates to the technical field of computers, and discloses a virtual prop control method and apparatus, a computer device, and a storage medium. According to the present application, a controlled virtual object is shielded by providing a movable virtual shelter prop for the controlled virtual object, so that the controlled virtual object is prevented from being directly exposed in a virtual scene, and is prevented from being attacked by other virtual objects.



ver más...

Image padding method and apparatus in deep learning hardware

Publicada en Patentscope_Domótica, 01/09/2022.

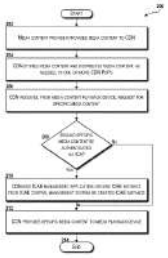
Solicitante: ASR SMART TECHNOLOGY CO., LTD. [CN]
An image padding method in deep learning hardware, comprising the following steps: step S10: performing padding estimation on an input image A, and calculating a size of a padding estimated image A1, pixel points newly added to the edge of the input image A being referred to as a first extended set when the padding estimated image A1 is compared with the input image A

ver más...

Volver al índice

Intelligent Continuous Authentication for Digital Rights Management

Publicada en PATENTSCOPE Industria intelligente, 01/09/2022.

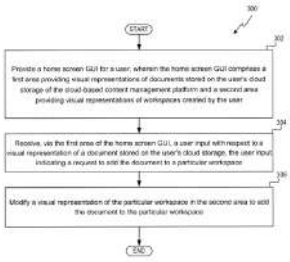


Solicitante: AT&T Intellectual Property I, L.P.
The concepts and technologies disclosed herein are directed to intelligent continuous authentication (“ICA”) for digital rights management (“DRM”). A user device can receive a notification that a media content playback device has requested playback of a media file that is protected by an ICA engine (“ICAE”) instance. The user device can request a unique code from the media content playback device. The user device can provide the unique code to an ICAE central management system associated with a media content provider that provides media content encompassed in the media file. The user device can determine, based upon a result provided by the ICAE central management system, whether the unique code is valid or invalid. The user device can instruct the ICAE instance to enable or disable the media file based upon whether the unique code is valid or invalid.

ver más...

Intelligent home screen of cloud-based content management platform

Publicada en Patentscope_Domótica, 01/09/2022.



Solicitante: Google LLC
A method of providing a workspace graphical user interface (GUI) for a user of a cloud-based content management platform includes providing the workspace GUI for the user via the cloud-based content management platform. The workspace GUI presents visual representations of documents stored on the user's cloud storage of the cloud-based content management platform and visual representations of workspaces created by the user.

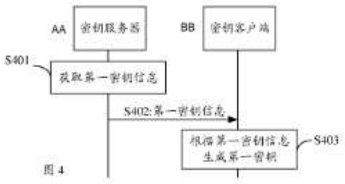
ver más...

Volver al índice

Key acquisition method and apparatus, and key management system

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitantes: HUAWEI TECHNOLOGIES CO., LTD. [CN]



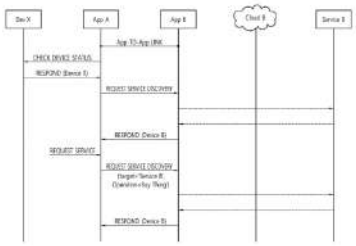
The present application relates to the technical field of intelligent vehicles. Disclosed are a key acquisition method and apparatus, and a key management system, and by means of same, not only can communication security be improved, but also a key can be updated at any time, which is very convenient. The key management system comprises a key server, and a first node in communication connection with the key server, wherein the first node is a key client or a key agent. The key server is used to acquire first key information and send the first key information to the first node.

ver más...

Method and apparatus for linking and controlling iot devices based on app to app communication in wireless lan system in smart home environment

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: LG Electronics Inc.



Provided are a method and apparatus for controlling an IoT controlee through a connection between applications in a wireless LAN system in a smart home environment. Specifically, the controller generates a control command message based on a first application. The controller transmits the control command message to a controlee based on a connection between the first application and the second application. The first and second applications are installed on the controller. The controlee is controlled by the second application.

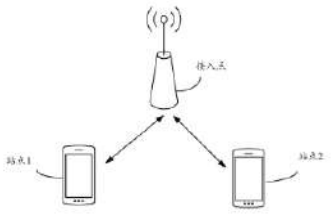
ver más...

Volver al índice

Method and apparatus for performing communication on the basis of cyclic shift diversity

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: HUAWEI TECHNOLOGIES CO., LTD. [CN]
Embodiments of the present application provide a method and apparatus for performing communication on the basis of cyclic shift diversity. The maximum number of antennas supported by the method is greater than eight, and a cyclic shift is performed on a first preamble part of each antenna by using a cyclic shift value,



ver más...

Method and apparatus for transmitting data unit based on control uplink grant in wireless communication system

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: LG ELECTRONICS INC. [KR]
The present disclosure relates to a method of transmitting a Medium Access Control (MAC) protocol data unit (PDU) by a user equipment (UE) in a wireless communication system. Especially, the method includes the steps of based on a first Medium Access Control (MAC) control element (CE) being triggered

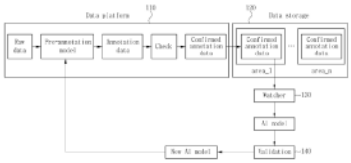
ver más...

Volver al índice

Method and device for automatically providing data processing, artificial intelligence model generation, and performance enhancement

Publicada en Patentes AI patentscope, 01/09/2022.

Solicitante: JLK, INC. [KR]



The present invention relates to a method and a device for automatically providing data processing, artificial intelligence model generation, and performance enhancement, and according to the present invention, the method for automatically providing data processing, artificial intelligence model generation, and performance enhancement comprises: a first step in which a learning data generation unit applies a pre-annotation model to collected raw data to generate learning data for artificial intelligence model learning; a second step in which a data storage place allocates the inspected data to each of isolated storage spaces according to the corresponding classification and stores same

ver más...

Method and system for securely deploying an artificial intelligence model

Publicada en Patentes AI patentscope, 01/09/2022.

Solicitante: ROBUST INTELLIGENCE, INC. [US]

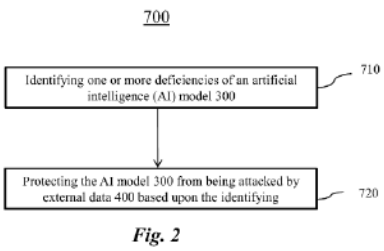


Fig. 2

Methods and systems for securely deploying an artificial intelligence (AI) model. The system can identify one or more deficiencies of the AI model, and protect the AI model from being attacked by external data based upon the identifying. The system can be used for fraud detection based on tabular data, voice authentication, facial recognition, object detection, or a combination thereof.

ver más...

Volver al índice

Method for automatically upgrading smart devices, and cloud server

Publicada en Patentscope_Domótica, 01/09/2022.

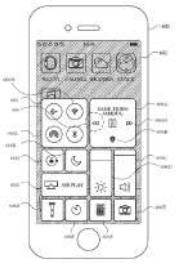
Solicitante; SUZHOU OPPLE LIGHTING CO., LTD. [CN]
The present application relates to a method for automatically upgrading smart devices, and a cloud server. The method for automatically upgrading smart devices comprises: a cloud server acquiring information of a plurality of smart devices under each gateway

ver más...

Methods and interfaces for home media control

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: Apple Inc.
The present disclosure generally relates to interfaces and techniques for media playback on one or more devices. In accordance with some embodiments, an electronic device includes a display, one or more processors, and memory.



ver más...

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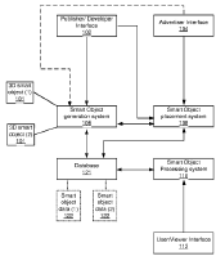
Methods and systems for displaying digital smart objects in a three dimensional environment

Publicada en PATENTSCOPE Industria intelligente, 01/09/2022.

Solicitante: Trivver, Inc. [AU]
Using various embodiments, methods and systems for displaying digital smart objects in 3D environments are described. In one embodiment, a system receives a request to present the 3D digital smart object in a game development environment of a game engine.

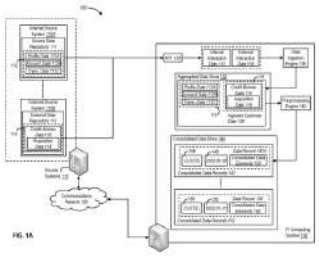


ver más...

Predicting occurrences of targeted classes of events using trained artificial-intelligence processes

Publicada en Patentes AI patentscope, 01/09/2022.

Solicitante: THE TORONTO-DOMINION BANK [CA]
The disclosed embodiments include computer-implemented apparatuses and processes that dynamically predict future occurrences of targeted classes of events using adaptively trained machine-learning or artificial-intelligence processes. For example, an apparatus may generate an input dataset based on interaction data associated with a prior temporal interval, and may apply a trained, gradient-boosted, decision-tree process to the input dataset.



ver más...

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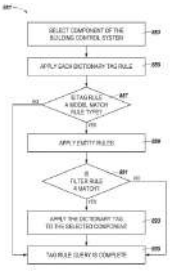
Rule-based modeling for building control systems

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: Honeywell International Inc.
Rule-based modeling for building control systems is described herein. One device includes a memory, a user, interface, and a processor configured to execute executable instructions stored in the memory to display, in a single view on the user interface, a listing of all components of a facility controlled by a building control system

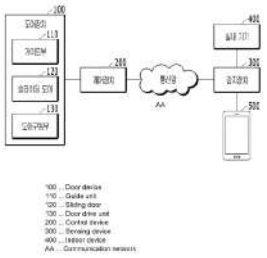


ver más...

Smart door device and smart access control system including same

Publicada en PATENTSCOPE Industria intelligente, 01/09/2022.

Solicitante: REALGAM CO., LTD. [KR]
The present invention relates to a smart door device and a smart access control system including same, and an embodiment of the present invention provides a smart door device and a smart access control system including same, the device and system comprising: a door device which is provided in an entrance to open/close a door for access of a user; a control device which controls the operation of preconfigured hardware or software of the door device or indoor devices for the access; a sensing device which is provided in a predetermined object or location and communicates with the control device



ver más...

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Smart mirror image screen projection method and device, and storage medium

Publicada en Patentscope_Domótica, 01/09/2022.

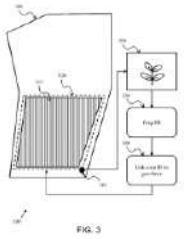
Solicitante: SHENZHEN SKYWORTH-RGB ELECTRONIC CO., LTD. [CN]
Provided are a smart mirror image screen projection method, apparatus and device, and a storage medium. The method comprises: acquiring current network environment information, and determining a mirror image screen projection mode according to the current network environment information; adjusting the current screen projection parameter according to a preset screen projection parameter corresponding to the mirror image screen projection mode

ver más...

Systems and methods for smart farming

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: PCI TECHNOLOGY INVESTMENTS LTD. [GB]
The invention provides a computer implemented method for mapping a geographical boundary of an agricultural area (140) within an agricultural region (110). The method includes obtaining location data by way of a handheld mobile device (150) comprising a location data unit and deriving one or more geographical coordinates based on the location data.



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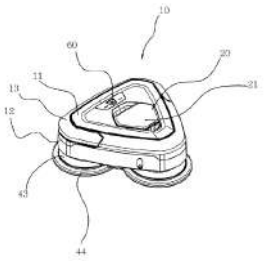
Three-mop robot cleaning device having disinfectant module

Publicada en PATENTSCOPE Industria intelligente, 01/09/2022.

Solicitante: 3MTOP CO., LTD [KR]
The present invention relates to a three-mop robot cleaning device having a disinfectant module, wherein, in response to the manipulation of an operating part by a user, a control unit controls the rotation of a traveling cleaning floorcloth part, and thus a cleaner main body can clean a cleaning surface whilst in a state of linear movement, a rotating state or a stopped state, and the device also disinfects during the cleaning process by changing stored chlorine water for a disinfectant comprising hypochlorous acid having sterilizing power, and spraying same.

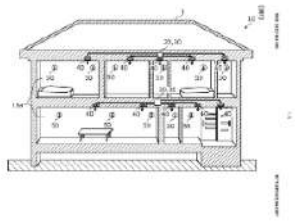


ver más...

Whole-building air-conditioning system and confirmation method

Publicada en Patentscope_Domótica, 01/09/2022.

Solicitante: PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD. [JP]
A controller (60) in a whole-building air-conditioning system (10) controls a damper (40) corresponding to a first space (11a1) to be air-conditioned according to a target temperature. After a predetermined period of time has elapsed from the time when the control of the damper (40) corresponding to the first space (11a1) to be air-conditioned is started according to a target temperature, if the changed temperature detected by a temperature sensor



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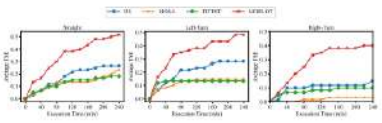
Many-Objective Reinforcement Learning for Online Testing of DNN-Enabled Systems

Publicada en https://arxiv.org, 27/10/2022.

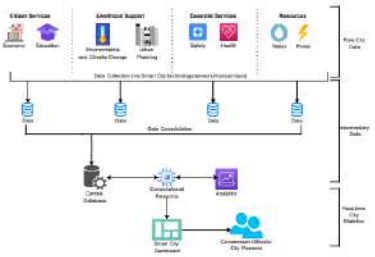


Deep Neural Networks (DNNs) have been widely used to perform real-world tasks in cyber-physical systems such as Autonomous Diving Systems (ADS). Ensuring the correct behavior of such DNN-Enabled Systems (DES) is a crucial topic. Online testing is one of the promising modes for testing such systems with their application environments (simulated or real) in a closed loop taking into account the continuous interaction between the systems and their environments.

ver más...

Identifying Threats, Cybercrime and Digital Forensic Opportunities in Smart City Infrastructure via Threat Modeling

Publicada en https://arxiv.org/, 26/10/2022.



Technological advances have enabled multiple countries to consider implementing Smart City Infrastructure to provide in-depth insights into different data points and enhance the lives of citizens. Unfortunately, these new technological implementations also entice adversaries and cybercriminals to execute cyber-attacks and commit criminal acts on these modern infrastructures.

ver más...

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A White-Box Adversarial Attack Against a Digital Twin

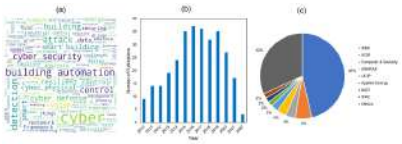
Publicada en https://arxiv.org/, 25/10/2022.

Recent research has shown that Machine Learning/Deep Learning (ML/DL) models are particularly vulnerable to adversarial perturbations, which are small changes made to the input data in order to fool a machine learning classifier. The Digital Twin, which is typically described as consisting of a physical entity, a virtual counterpart, and the data connections in between, is increasingly being investigated as a means of improving the performance of physical entities by leveraging computational techniques, which are enabled by the virtual counterpart

ver más...

A critical review of cyber-physical security for building automation systems

Publicada en https://arxiv.org, 21/10/2022.



Modern Building Automation Systems (BASs), as the brain that enables the smartness of a smart building, often require increased connectivity both among system components as well as with outside entities, such as optimized automation via outsourced cloud analytics and increased building-grid integrations. However, increased connectivity and accessibility come with increased cyber security threats. BASs were historically developed as closed environments with limited cyber-security considerations.

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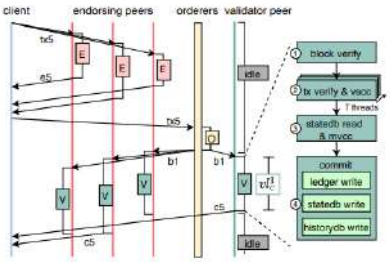
Improving Energy Efficiency of Permissioned Blockchains Using FPGAs

Publicada en https://arxiv.org, 21/10/2022.

Permissioned blockchains like Hyperledger Fabric have become quite popular for implementation of enterprise applications. Recent research has mainly focused on improving performance of permissioned blockchains without any consideration of their power/energy consumption. In this paper, we conduct a comprehensive empirical study to understand energy efficiency (throughput/energy) of validator peer in Hyperledger Fabric (a major bottleneck node).



ver más...

Explainable Multi-Agent Recommendation System for Energy-Efficient Decision Support in Smart Homes

Publicada en https://arxiv.org, 20/10/2022.

Understandable and persuasive recommendations support the electricity consumers' behavioral change to tackle the energy efficiency problem. Generating load shifting recommendations for household appliances as explainable increases the transparency and trustworthiness of the system. This paper proposes an explainable multi-agent recommendation system for load shifting for household appliances.

ver más...

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Development of a hardware-In-the-Loop (HIL) testbed for cyber-physical security in smart buildings

Publicada en https://arxiv.org, 17/10/2022.

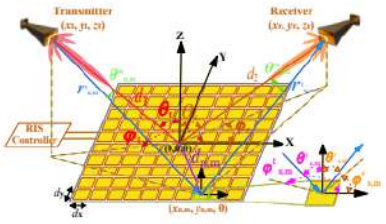
As smart buildings move towards open communication technologies, providing access to the Building Automation System (BAS) through the intranet, or even remotely through the Internet, has become a common practice. However, BAS was historically developed as a closed environment and designed with limited cyber-security considerations. Thus, smart buildings are vulnerable to cyber-attacks with the increased accessibility. This study introduces the development and capability of a Hardware-in-the-Loop (HIL) testbed for testing and evaluating the cyber-physical security of typical BASs in smart buildings.

ver más...

Distributed Reconfigurable Intelligent Surfaces for Energy Efficient Indoor Terahertz Wireless Communications

Publicada en https://arxiv.org, 12/10/2022.

With the fifth-generation (5G) networks widely commercialized and fast deployed, the sixth-generation (6G) wireless communication is envisioned to provide competitive quality of service (QoS) in multiple aspects to global users. The critical and underlying research of the 6G is, firstly, highly dependent on the precise modeling and characterization of the wireless propagation when the spectrum is believed to expand to the terahertz (THz) domain.



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The State-of-the-Art in AI-Based Malware Detection Techniques: A Review

Publicada en https://arxiv.org/, 12/10/2022.

Artificial Intelligence techniques have evolved rapidly in recent years, revolutionising the approaches used to fight against cybercriminals. But as the cyber security field has progressed, so has malware development, making it an economic imperative to strengthen businesses' defensive capability against malware attacks.

ver más...

Detecting Anomalies within Smart Buildings using Do-It-Yourself Internet of Things

Publicada en https://arxiv.org, 04/10/2022.

Detecting anomalies at the time of happening is vital in environments like buildings and homes to identify potential cyber-attacks. This paper discussed the various mechanisms to detect anomalies as soon as they occur. We shed light on crucial considerations when building machine learning models. We constructed and gathered data from multiple self-build (DIY) IoT devices with different in-situ sensors and found effective ways to find the point, contextual and combine anomalies.

ver más...

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Location-aware green energy availability forecasting for multiple time frames in smart buildings: The case of Estonia

Publicada en https://arxiv.org, 04/10/2022.

Renewable Energies (RE) have gained more attention in recent years since they offer clean and sustainable energy. One of the major sustainable development goals (SDG-7) set by the United Nations (UN) is to achieve affordable and clean energy for everyone. Among the world's all renewable resources, solar energy is considered as the most abundant and can certainly fulfill the target of SDGs.

ver más...

Power Management in Smart Residential Building with Deep Learning Model for Occupancy Detection by Usage Pattern of Electric Appliances

Publicada en https://arxiv.org, 27/09/2022.

With the growth of smart building applications, occupancy information in residential buildings is becoming more and more significant. In the context of the smart buildings' paradigm, this kind of information is required for a wide range of purposes, including enhancing energy efficiency and occupant comfort. In this study, occupancy detection in residential building is implemented using deep learning based on technical information of electric appliances.

ver más...

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FaRO 2: an Open Source, Configurable Smart City Framework for Real-Time Distributed Vision and Biometric Systems

Publicada en https://arxiv.org, 26/09/2022.

Recent global growth in the interest of smart cities has led to trillions of dollars of investment toward research and development. These connected cities have the potential to create a symbiosis of technology and society and revolutionize the cost of living, safety, ecological sustainability, and quality of life of societies on a world-wide scale. Some key components of the smart city construct are connected smart grids, self-driving cars, federated learning systems, smart utilities, large-scale public transit, and proactive surveillance systems.

ver más...

Blockchain technologies in the design of Industrial Control Systems for Smart Cities

Publicada en https://arxiv.org/, 24/09/2022.

The proliferation of sensor technologies in Industrial Control Systems (ICS) helped to transform the environment towards better automation, process control and monitoring. However, sensor technologies expose the smart cities of the future to complex security challenges. Luckily, the sensing capabilities also create opportunities to capture various data types, which apart from operational use can add substantial value to developing mechanisms to protect ICS and critical infrastructure. We discuss Blockchain (BC), a disruptive technology with applications ranging from cryptocurrency to smart contracts and the value of integrating BC technologies into the design of ICS to support modern digital forensic readiness.

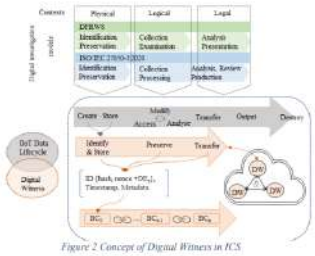

Figure 2 Concept of Digital Witness in ICS

ver más...

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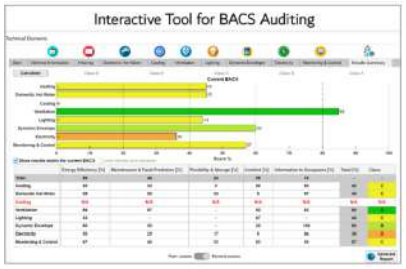
Design, Development and Implementation of a Novel Parallel Automated Step Response Testing Tool for Building Automation Systems

Publicada en https://www.mdpi.com/, 17/09/2022.

The digital transformation has paved the path for new services and efficient management across the value chain of the whole energy sector. For applications behind the meter, buildings stand out as a major contributor to energy consumption and corresponding emissions. Therefore, Building Automation Control Systems (BACS) have been proposed in order to mitigate building performance issues.

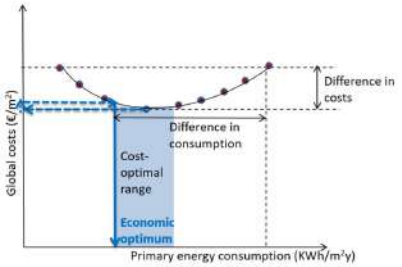


ver más...

Review of the Cost-Optimal Methodology Implementation in Member States in Compliance with the Energy Performance of Buildings Directive

Publicada en https://www.mdpi.com, 17/09/2022.

he building sector has a central role in achieving the European goals of a zero-emission and fully decarbonized stock by 2050. Among the provisions of the Energy Performance of Buildings Directive (EPBD) recast, the implementation of the cost-optimal methodology marked a novel approach in the establishment of minimum energy performance requirements for new and existing buildings.



ver más...

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Quantitative and Qualitative Analysis of Applying Building Information Modeling (BIM) for Infrastructure Design Process

Publicada en https://www.mdpi.com, 14/09/2022.

Building information modeling (BIM) has opened up many possibilities for the construction industry. However, most studies focus mainly on its overall uses and management areas. By investigating real projects that could utilize BIM in the design phases for railway construction, the authors examine the possible advantages and disadvantages in BIM implementation.

ver más...

A Low-Cost Multi-Agent System for Physical Security in Smart Buildings

Publicada en https://arxiv.org/, 01/09/2022.

Modern organizations face numerous physical security threats, from fire hazards to more intricate concerns regarding surveillance and unauthorized personnel. Conventional standalone fire and intrusion detection solutions must be installed and maintained independently, which leads to high capital and operational costs.

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