



SmartLivingPlat

Plataforma Tecnológica de la Domótica
y las Ciudades Inteligentes



Boletín de Vigilancia Tecnológica

MARZO - ABRIL 2025

SMART BUILDINGS
SMART CITIES
INDUSTRIA 4.0

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NOTICIAS

Japan unveils world's first solar super-panel: More powerful than 20 nuclear reactors

Publicada en japanenergyevent.com, 30/04/2024

Renewable energy in Japan will receive a seismic shift via perovskite solar cells, the latest development that would change the way solar energy is viewed. Lightweight, flexible, and adaptable, these solar cells will provide a more viable means to producing energy within a city, responding to shortages of land and sustainable issues. Let's see how Japan is benefiting from the PSC technology to bring about a green future.

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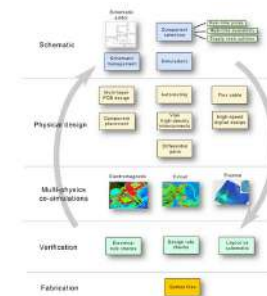


What Is Electronic Design Automation And Why Do You Need It?

Publicada en semiengineering.co 24/04/2025

As data speeds push into the multi-gigabit range and requirements on digital systems grow more complex, cutting down the time-to-market while also ensuring error-free reliable designs seems impossible. Traditional design tools and practices can result in failed prototypes, costly respins, delayed time-to-market, missed market opportunities, and subpar performance

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Research examines how aerial robots could revolutionise the construction industry

Publicada en bristol.ac.uk, 23/04/2025

New research led by Imperial College London and co-authored by the University of Bristol, has revealed that aerial robotics could provide wide-ranging benefits to the safety, sustainability and scale of construction. The research examines the emerging field of using drones for mid-air material deposition in the construction industry – a process known as Aerial Additive Manufacturing (Aerial AM).

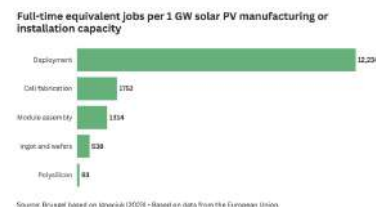


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Do imports of cheap solar panel and other technologies help or hurt domestic jobs in clean energy?

Publicada en sustainabilitybynumbers.com, 21/04/2025

If you want to grow a domestic job market for clean energy, importing cheaper solar panels, wind turbines, and batteries from other countries (mostly China) seems like a bad idea. A manufacturing job that could be done by an American or a European is being offshored to a Chinese worker instead.



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China bans 'smart' and 'autonomous' driving terms from vehicle ads

Publicada en autoworldjournal.com, 17/04/2025

China Tightens Rules on Advanced Driver Assistance and OTA Updates While Banning Misleading Advertising Terms in the Automotive Sector to Ensure Consumer Safety. China is implementing a ban on terms such as 'smart driving' and 'autonomous driving' in car advertisements.

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America's Last Stand: China's Smart Battery Dominance

Publicada en realcleardefense.com, 15/04/2025

America remains perilously unaware as it approaches a catastrophic ambush—a savvy, ruthless strategy designed to eliminate credible competition in the critical energy and rare earth domain. Contemporary Amperex Technology Limited (CATL) is aggressively orchestrating a \$5 billion+ initial public offering (IPO) in Hong Kong. Bolstered by powerful global financial syndicate, which includes Bank of America and JPMorgan, CATL is deliberately targeting the most influential, global investors, including America's largest asset managers, BlackRock, Prudential, State Street, and Vanguard.

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Trump tariffs won't entice companies to expand US manufacturing, economic experts warn

Publicada en abcnews.go.com, 10/04/2025

"Trump has a fundamental misunderstanding of how trade works," one said. It's an argument President Donald Trump makes repeatedly as an end goal of his sweeping tariffs: America needs to bring companies and their manufacturing jobs – back to the U.S.

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Smart Cities Marketplace Takes Part In European Energy Communities Facility Strategic Dialogue

Publicada en smart-cities-marketplace.ec.europa.eu, 6/03/2025

The European Energy Communities Facility aims to empower and support the development of emerging energy communities across Europe. Small lump sum grants (45.000 euros) will assist at least 140 energy communities in developing and implement solid business plans for their sustainable energy projects. The first call for applications will be launched in June 2025, and a second call will follow in September 2026.

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Commission opens access to EU supercomputers to speed up AI development

Publicada en <https://smart-cities-marketplace.ec.europa.eu>,
6/03/2025

The Horizon Europe BUILDSPACE project has been welcomed to the Smart Cities Marketplace, reinforcing its mission to drive data-driven sustainability in urban environments. BUILDSPACE equips stakeholders with cutting-edge tools to monitor building energy performance and enhance city resilience against climate change, focusing on urban heat and flood risks.

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EMPRESAS Y MERCADOS

Siemens expands global electronics intelligence reach and Supplyframe portfolio with Wevolver acquisition

Publicada en press.siemens.com, 30/04/2025

Siemens Digital Industries Software announced today its intention to acquire Wevolver, expanding its audience reach, enhancing the Supplyframe product portfolio, and combining digital marketing and integrated campaign programs that include go-to-market support and content creation. Acquired by Siemens in 2021, the Supplyframe™ DSI platform is a rich intelligence resource for the electronics industry and leverages billions of continuous signals of design intent, demand, supply and risk factors.

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Waymo and Toyota Outline Strategic Partnership to Advance Autonomous Driving Deployment

Publicada en waymo.com, 29/04/2025

Toyota Motor Corporation (“Toyota”) and Waymo reached a preliminary agreement to explore a collaboration focused on accelerating the development and deployment of autonomous driving technologies. Woven by Toyota will also join the potential collaboration as Toyota’s strategic enabler, contributing its strengths in advanced software and mobility innovation. This potential partnership is built on a shared vision of improving road safety and delivering increased mobility for all.

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Xiaomi's Robot Factory Works 24/7 Without Lights, Breaks, or People

Publicada en yourstory.com, 28/04/2025

In a world where factories don't sleep and machines fix themselves, the real question is — are we ready to innovate at the speed of thought? Curious to learn how dark factories will transform your everyday life? Stay tuned — the future is already assembling itself. When you hear “dark factory,” you might imagine something out of a dystopian sci-fi movie — giant machines whirring in eerie darkness.



Read more at: <https://yourstory.com/2025/04/xiaomis-robot-factory-works-24-7-without-lights-breaks-people>

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Digital Twin Consortium Showcases Digital Twin-Enabled Microfactory for Smart Manufacturing

Publicada en metrology.news, 21/04/2025

The Digital Twin Consortium (DTC) has announced NTT Data's Technology Showcase titled Digital Twin-Enabled Microfactory for Smart Manufacturing. The showcase demonstrates the capabilities and benefits of composable digital twins in asset-intensive industries, including manufacturing, mining, oil and gas, and utilities. It also demonstrates how digital twins can improve operational efficiency, predictive maintenance, and automation in production lines.



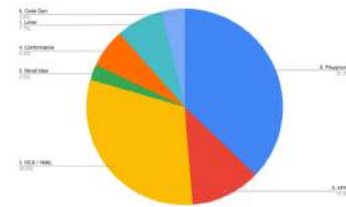
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Announcing Accord Project Agent Interface

Publicada en accordproject.org, 17/04/2025

Accord Project (AP) Technical Steering Committee and maintainers wrapped up two days of intensive planning meetings for 2025, and are excited to announce Accord Project Agent Interface (APAI). Accord Project Agent Interface defines how human or computer agents can use Model Context Protocol (MCP) servers to create, read, update and query Accord Project templates and agreements. Look out for more details soon on an open-source framework for agentic agreement management!

[Ver más..](#)



ASUS Announces VivoWatch 6 AERO

Publicada en asus.com, 11/04/2025

ASUS today announced VivoWatch 6 AERO, the world's first smart band that's able to take blood pressure and electrocardiogram (ECG) measurements via a fingertip. This state-of-the-art device packs health monitoring features into a sleek wearable, making it the ultimate choice for personal health insights.

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Industrial AI in action: How AI agents and digital threads will transform the manufacturing industries

Publicada en microsoft.com, 25/03/2025

Manufacturing is set for a major transformation with AI agents. These AI agents are programs that interact with their environment, perceive data, and act on that data, enabling organizations to gain insights, speed up innovation, and transform value chains. At Hannover Messe 2025, Microsoft and our partners will showcase how these technologies are creating a more connected, efficient, and intelligent future for the industry.

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Radiology AI software provider Gleamer expands into MRI with two M&A transactions

Publicada en techcrunch.com, 10/3/2025

Medical imaging is a broad term that encompasses several distinct technologies. After working on AI-powered tools to enhance X-rays and mammographies, French startup Gleamer now aims to tackle magnetic resonance imaging (MRI).

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Agibot unveils AI model that allows humanoid robots to perform real-world tasks

Publicada en scmp.com, 10/03/2025

Agibot, founded by Huawei Technologies' former "Genius Youth" recruit Peng Zhihui, has launched a general artificial intelligence (AI) model that can enable humanoid robots to understand and perform real-world tasks quickly. The Shanghai-based start-up unveiled Genie Operator-1 (GO-1)

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Cendyn goes bold with AI across hotel analytics platforms

Publicada en hospitalitynet.org, 4/03/2025

BERLIN, Germany – Cendyn, a global integrated hotel technology company, has advanced its business intelligence solutions with AI-enabled analysis to deliver hotels smarter data with practical commercial insights.

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PATENTES

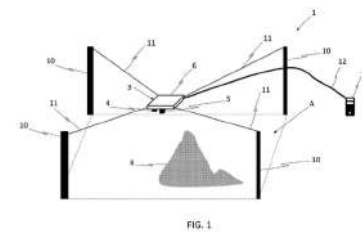
Apparatus And Method For Measuring A Volume Of A Piled Material

Publicada en Espacenet, 30/04/2025

Solicitante: VICOMTECH [ES]; FUNDACION TECNALIA [ES]

An apparatus and a method for measuring a volume of a piled material (8). The apparatus comprises: a cable-driven robot (3) which comprises a movable structure (6); a controller (4) which is configured to control a movement and a positioning of the structure (6) over an area (A) according to scanning instructions; a LiDAR system (5) which is attached to said structure (6) and is configured

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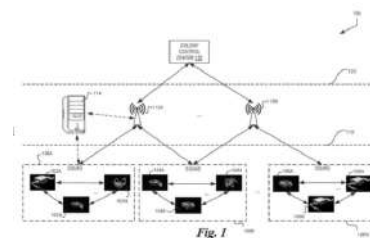
Systems And Methods For Swarm Intelligence In Industrial Robotics

Publicada en Espacenet, 24/04/2025

Solicitante: OFF WORLD INC [US]

Systems and methods for industrial robotic platforms. Squads of industrial robots autonomously communicate and work together. A control center may monitor the autonomous operations. Software at the control center, squad, and robot levels forms a distributed control system that analyzes various data related to the platform for monitoring of the various systems.

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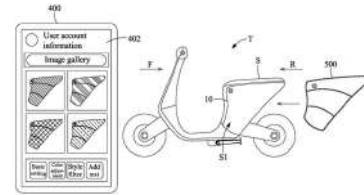
Smart Display Device Displaying An Appearance Of A Transportation Vehicle, Setting Method, Method Of Use, And Non-Transitory Computer-Readable Recording Medium Thereof

Publicada en Espacenet, 24/04/2025

Solicitante: COMPAL ELECTRONICS INC [TW]

A smart display device displaying an appearance of a transportation vehicle comprises a display element, a user interface, and a smart display device. The display element is located in multiple regions along a contour of a vehicle body. The user interface includes a status display region and a function display region, a user defines electronic display contents in the function display region according to preferences, and previews the electronic display contents in the status display region

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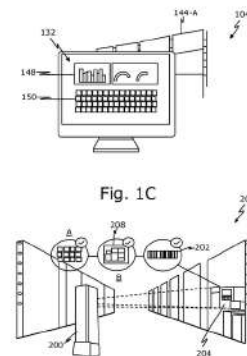
Autonomous warehouse monitoring robot, storage system and method for storage system

Publicada en Espacenet, 23/04/2025

Solicitante: DEXORY LTD [GB]

An autonomous warehouse monitoring robot 100 comprises a propulsion system 106, 108, 110, a processing unit 112 and a first scanner array 114, wherein the processing unit is configured to receive scanner data from the first scanner array wherein the scanner data relates to an article 116, 118, 120, stored in the warehouse 104, a horizontal location

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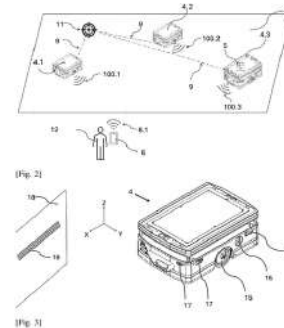
Systeme Robotique Et Procede De Gestion D'une Flotte De Robots Autonomes

Publicada en Espacenet, 18/04/2025

Solicitante: ROBOTIQUE OCCITANE ROBOCC [FR]

SYSTEME ROBOTIQUE ET PROCEDE DE GESTION D'UNE FLOTTE DE ROBOTS AUTONOMES L'invention concerne un système robotique (1) destiné à équiper une zone de navigation (2) prédéterminée, comprenant une flotte (3) de robots roulants autonomes (4.1; 4.2; 4.3). Chaque robot (4.1; 4.2; 4.3) inclut une unité de calcul, des moyens de communication, une mémoire

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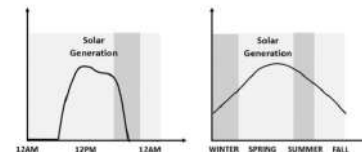
Intelligent Solar Power Generation And Distribution System Using Digital Twin

Publicada en Espacenet, 17/04/2025

Solicitante: NEC LAB AMERICA INC [US]

Disclosed are twin-based systems and methods for predicting solar power generation and optimizing power generation and distribution processes. Employed are a digital twin model of a solar power plant, which includes detailed representations of various components, such as solar panels, inverters, and transformers, as well as real-time weather data and historical data.

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Method And Device For Predicting Cybersickness In Virtual Reality By Using Multimodal And Time-Series Data

Publicada en Espacenet, 10/04/2025

Solicitante: IUCF HYU [KR]

The method for predicting cybersickness in virtual reality by using multimodal and time-series data includes the steps in which a prediction device: receives an input of information on a subject; inputs the information on a subject to a neural network model; and predicts a cybersickness level of the subject on the basis of an output value of the neural network model.

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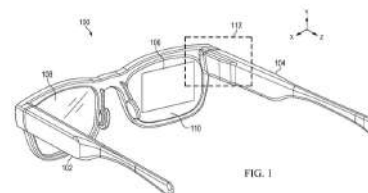
Antenna Arrangement For Eyewear

Publicada en Espacenet, 10/04/2025

Solicitante: GOOGLE LLC [US]

An augmented reality (AR) or mixed reality (MR) eyewear display utilizes an antenna arrangement for eyewear that optimizes the performance of the antenna without sacrificing the functionality or modularity of the eyewear. In one implementation, the antenna arrangement includes a first conductor that functions as a ground for the antenna, a second conductor configured to help retain a lens, and an antenna feed configured to excite the second conductor, causing the second conductor to act as an antenna.

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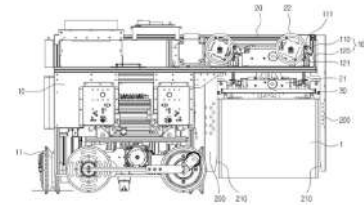
Structure For Preventing Slippage Of Pick-Up Belt Of Pick-Up Robot

Publicada en Espacenet, 3/04/2025

Solicitante: ATEC AP CO LTD [KR]

As a structure for preventing the slippage of a pick-up belt of a pick-up robot, comprising: a body unit in which a plurality of wheels are rotatably installed and which moves to a set position along a track; a support arm which protrudes from the upper portion of the outer surface of one side of the body unit along the lateral direction of the body unit and in which a belt roller having a pick-up belt wound thereon is rotatably installed

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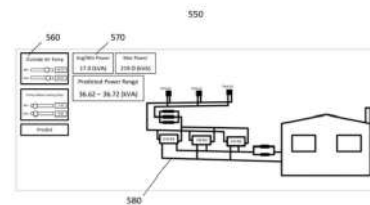
Digital Twin Systems Management

Publicada en Espacenet, 3/04/2025

Solicitante: CBRE INC [US]

At least one processor may receive data descriptive of operation of equipment and store the data in a data store. the at least one processor may build a digital twin of the equipment using the data by training at least one machine learning model on at least a portion of the data in the data store and building a model accessible by a user interface and comprising at least one parameter determined by the trained machine learning model.

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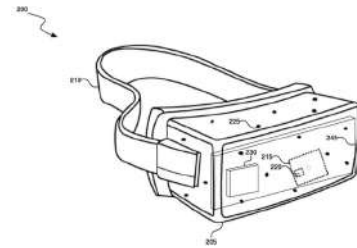
Immersive System With Mixed Reality And Virtual Reality Modes

Publicada en Espacenet, 02/04/2025

Solicitante: META PLATFORMS INC [US]

Aspects of the present disclosure are directed to managing mixed reality and virtual reality operating modes using an artificial reality system. An artificial reality system can be capable of operating in a virtual reality mode, where the environment displayed to a user is computer generated, or mixed reality mode, where the environment displayed to a user represents

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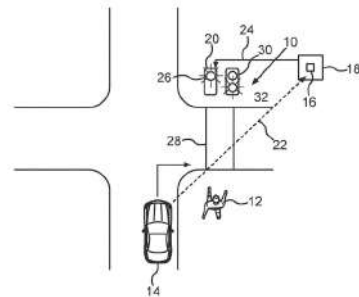


A method for warning a pedestrian about a crossing of an at least in part autonomous motor vehicle

Publicada en Espacenet, 2/04/2025

Solicitante: MERCEDES BENZ GROUP AG [DE]

A method for warning a pedestrian (12) about a crossing of an at least in part autonomous motor vehicle (14) by a warning system (10), comprising the steps of: receiving a crossing message (22) from the motor vehicle (14) by a receiving device (16) of the warning system (10); generating an operation signal (24) for a warning device (20) of the warning system (10) by an electronic computing device (18) of the warning system (18); and outputting a warning signal (26) for the pedestrian (



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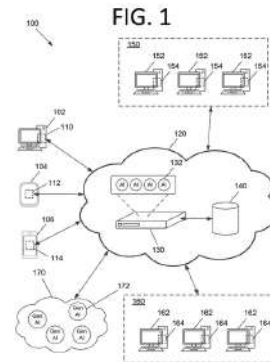
Using A Cognitive Artificial Intelligence Layer To Perform Robotic Process Automation Robot Repair

Publicada en Espacenet, 27/03/2025

Solicitante: UIPATH INC [US]

Using a cognitive artificial intelligence (AI) layer (e.g., a generative AI model and one or more other AI/ML models) to perform robotic process automation (RPA) robot repair is disclosed. Computer vision (CV) and/or optical character recognition (OCR) models may be called by RPA robots when performing activities in RPA workflows to identify graphical elements and text, respectively, in a user interface (UI)

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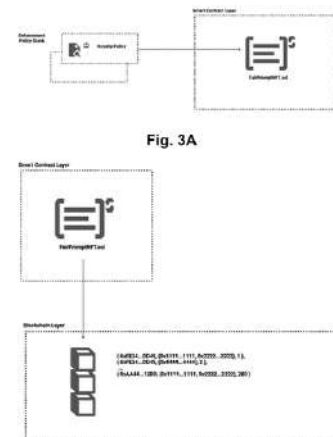
AI Prompt Enforcement Method, System And Computer Programs

Publicada en Espacenet, 27/03/2025

Solicitante: TELEFONICA INNOVACION DIGITAL S L
[ES]

An AI prompt enforcement method, system and computer program are provided. The method comprises receiving, from a prompt generator, an AI prompt for the AI model; performing a natural language processing analysis over the received AI prompt to recognize features thereof; selecting an enforcement policy, comprising conditions for the AI prompt

Ver más..



BIM-Based System For Evaluating The Entire City Course

Publicada en Espacenet, 23/03/2025

Solicitante: INDUSTRY UNIV COOPERATION FOUNDATION HANYANG UNIV ERICA CAMPUS [KR]

A BIM-based urban life cycle assessment system comprising: a BIM modeling unit that constructs a BIM model for urban life cycle assessment; a data conversion unit that converts the BIM model into data; and an LCA system unit that integrates and operates the converted data, conducts a life cycle assessment using the integrated data through the constructed database, and provides the assessment results in a report format.

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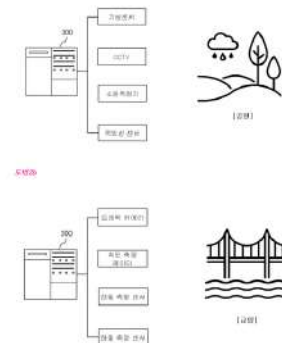
Data Integration And Filtering System For Smart City

Publicada en Espacenet, 20/03/2025

Solicitante: BISTELLIGENCE INC [KR]

The present invention relates to a system for collecting, integrating, and filtering various data of a smart city, and particularly belongs to the field of control system technology that applies artificial intelligence algorithms for real-time data analysis and event detection

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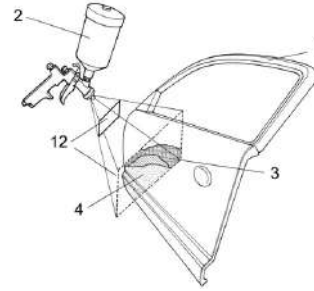
Method And System For Simulating Spraying Painting Operations In Virtual Reality, Augmented Reality, Or Mixed Reality Environments

Publicada en Espacenet, 14/03/2025

Solicitante: SEABERY SOLUCIONES S L [ES]

Method and system for simulating spray painting operations in virtual reality, augmented reality or mixed reality environments. The present invention relates mainly to a method for simulating spray painting operations, adapted to calculate paint projection surfaces (12) on a simulated workpiece (1), from the position and orientation of a physical workpiece (1') and a physical tool (2'); and to resolve the shape and volume of a paint coating

Ver más..



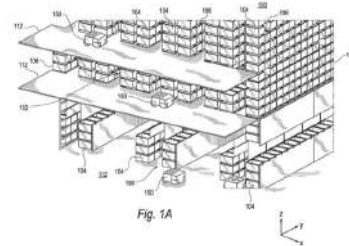
Systems And Methods For Creating Safety Zones Using Mobile Robots

Publicada en Patentscope, 13/03/2025

Solicitante: WALMART APOLLO LLC [US]

There are provided systems and methods for creating safety zones at facilities using mobile robots. In one form, the system may include a facility with pathways and with a guide system for facilitating movement along the pathways and mobile robots configured to move along the pathways. Each mobile robot may include a locomotion system for movement of each mobile robot along the pathways and an extendable and retractable member for engaging a support adjacent to a pathway.

Ver más..



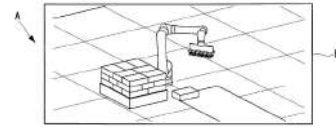
Robot Operation Device And Action Program

Publicada en Espacenet, 13/03/2025

Solicitante: FANUC CORP [JP]

This robot operation device comprises: a display unit; a screen image control unit that displays a UI screen image on the display unit and controls the UI screen image; and a command control unit that generates a command on the basis of an operation performed on the UI screen image and transmits the command to a robot. The UI screen image includes a graphic of the robot and cargo, and an operation screen image for receiving an operation performed by a user

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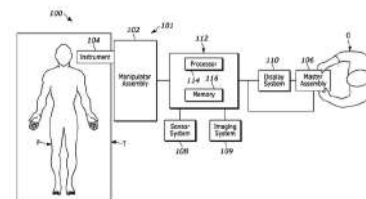
Workflow For An Ultrasound Guided Percutaneous Needle Robot

Publicada en Espacenet, 13/03/2025

Solicitante: INTUITIVE SURGICAL OPERATIONS [US]

Systems and methods are described for ultrasound guided robotic percutaneous instrument insertion into a subject. The method may include (i) obtaining images of a target volume of a subject, the images obtained by a sensing probe physically positioned by a probe holder that is coupled to a repositionable structure; (ii) reconstructing a three-dimensional (3D) representation of the target volume from the images of the target volume

[Ver más..](#)



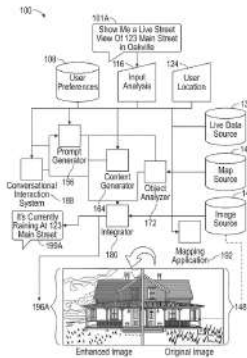
Generative Artificial Intelligence Prompt Creation, Smart Information Integration, And Application Of Resultant Artifacts For Navigation And Enhanced Content Generation

Publicada en Espacenet, 13/03/2025

Solicitante: ADEIA GUIDES INC [US]

Methods and systems are described for automatic content generation, imaging, and navigation. Inputs including mapping data, original imagery, live information, and user-generated information are received. The inputs are processed to generate prompts as an intermediate output. The inputs and the generated prompts are input into generative AI systems

[Ver más..](#)



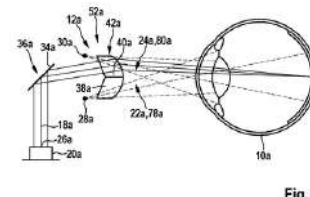
Method For Three-Dimensional Eye Tracking Of An Eye Of A User Of A Virtual Retinal Display, Virtual Retinal Display And Smart Glasses

Publicada en Espacenet, 13/03/2025

Solicitante: BOSCH GMBH ROBERT [DE]

The invention relates to a method for three-dimensional eye tracking of an eye (10a-c) of a user of a virtual reality retinal display (12a-c) (retinal scan display), for example in smart glasses (14a-c), by means of stereoscopy which is based on an evaluation of perspectively different images (16a-c) of the same eye (10a-c), which images are recorded by means of laser feedback interferometry (LFI)

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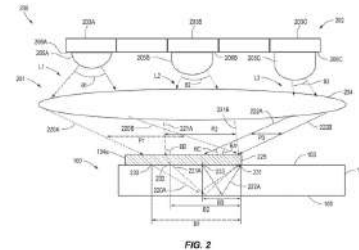
MicroLens Display Apparatus For Use In An Augmented Reality System

Publicada en Espacenet, 6/03/2025

Solicitante: APPLIED MATERIALS INC [US]

Embodiments of the present disclosure generally relate to augmented reality (AR) systems. More specifically, embodiments described herein provide for an AR projection system and AR devices having the projection system. In one or more embodiments, an augmented reality device includes a projection system.

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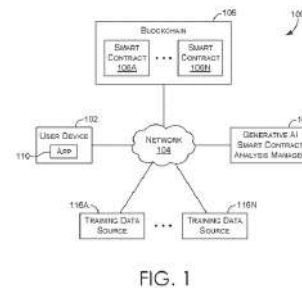
Using Generative Artificial Intelligence For Automated Analysis Of Smart Contracts On Blockchain

Publicada en Patentscope, 6/03/2025

Solicitante: ADOBE INC [US]

Methods and systems are provided for using generative AI for automated analysis of smart contracts on blockchain. In embodiments described herein, smart contract code for a smart contract is accessed in blockchain via a retriever component. The smart contract code includes a condition of the smart contract in a programming language format. A language model generates natural language content based on the smart contract code. The natural language content is then displayed.

[Ver más..](#)



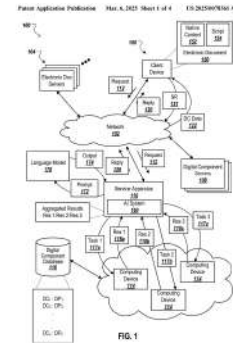
Using Generative Artificial Intelligence To Edit Images Based On Contextual Data

Publicada en Espacenet, 6/03/2025

Solicitante: GOOGLE LLC [US]

Methods, systems, and apparatus, including computer programs encoded on a computer storage medium, for controlling an agent interacting with an environment. In one aspect, a method comprises: receiving a user text sequence that characterizes a robotic task to be performed by the agent in the environment

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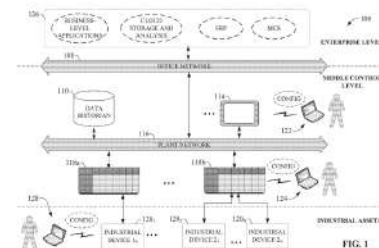
Generative AI For Industrial Automation Design Environment Test

Publicada en Patentscope, 6/03/2025

Solicitante: ROCKWELL AUTOMATION TECH INC [US]

An integrated development environment (IDE) for designing, programming, and configuring aspects of an industrial automation system uses a generative artificial intelligence (AI) model and associated neural networks to generate portions of an industrial automation project in accordance with functional requirements provided to the industrial IDE system in intuitive formats, such as spoken or written plain language text.

[Ver más..](#)



Robotic Arm For Loading And Unloading Bins

Publicada en Espacenet, 5/03/2025

Solicitante: FORD GLOBAL TECH LLC [US]

A vehicle for delivering a plurality of packages disposed in a plurality of bins is described. The vehicle includes a grid of a plurality of motorized tiles configured to enable movement of the plurality of bins within the vehicle. The vehicle further includes a robotic arm disposed at a vehicle rear portion. The robotic arm may be configured to load or unload a bin to or from the grid of the plurality of motorized tiles.

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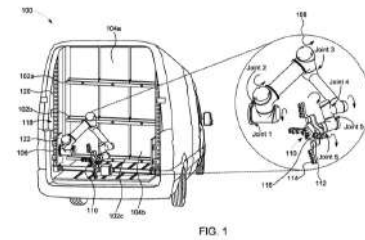


FIG. 1

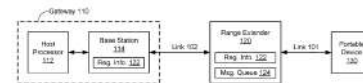
Range Extender For Home Automation Network

Publicada en Patentscope, 5/03/2025

Solicitante: SYNAPTICS INC [US]

This disclosure provides methods, devices, and systems for wireless communications. The present implementations more specifically relate to range extenders for digital enhanced cordless telecommunications (DECT) ultra low energy (ULE) home automation networks (HANs) that can extend the range of wireless communications

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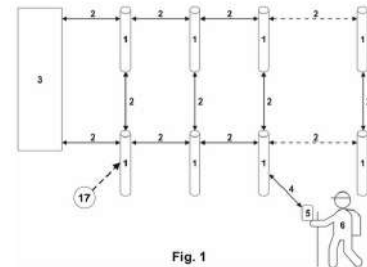
Support infrastructure for communications and services in natural and tourist environments

Publicada en Espacenet, 04/03/2025

Solicitante: IMPLASER 99 S L L [ES]

Support infrastructure for communications and services in natural and tourist environments, associated with a user-oriented product-service logic, suitable for mountain routes and environments without mobile telephone coverage, providing connectivity for user guidance and location services and supporting rescue in emergency situations. It comprises a plurality of geopositioned interaction points, distributed throughout the territory to be covered and linked to each other by means of a digital wireless mesh communications network

[Ver más..](#)



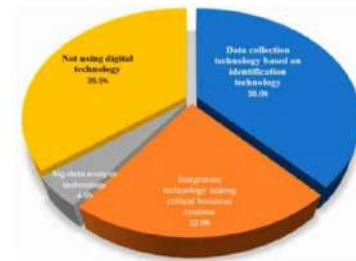
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Overcoming digital transformation barriers: Chinese SMMEs in the sharing economy

Publicada en frontiersin.org, 25/04/2025

Digital transformation is critical for small and medium-sized manufacturing enterprises (SMMEs) in China to enhance competitiveness within the sharing economy, particularly in the production capacity domain, which accounts for 32.75% of the sharing economy market. However, SMMEs face significant technological, financial, organizational, and cultural barriers that hinder their digitalization efforts.

[Ver más...](#)



Smart Irrigation Systems: An Overview of Current Trends and Technologies

Publicada en ieeexplore.ieee.org, 27/03/2025

Md. Rawshan Habib, et al. Nowadays, irrigation accounts for almost 70% of global water usage. Therefore, it is essential to design irrigation systems in such a way that it can reduce water usage as well as the expense. Making eco-friendly irrigation systems is another challenge for researchers. To overcome these problems, a variety of appliances and systems combining state-of-the-art software and hardware features have been developed. Yet, research on smart irrigation systems is ongoing. To have a comprehensive understanding of the prospective and continuing instance, this study presents an overview of recent advancements in smart irrigation systems.

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A Survey of Challenges and Sensing Technologies in Autonomous Retail Systems

Publicada en arxiv.org, 17/03/2025

Shimmy Rukundo, David Wang, Front Wongnonthawitthaya, Youssouf Sidib'e, Minsik Kim, Emily Su, Jiale Zhan Autonomous stores leverage advanced sensing technologies to enable cashier-less shopping, real-time inventory tracking, and seamless customer interactions. However, these systems face significant challenges, including occlusion in vision-based tracking, scalability of sensor deployment, theft prevention, and real-time data processing. To address these issues, researchers have explored multi-modal sensing approaches, integrating computer vision, RFID, weight sensing, vibration-based detection, and LiDAR to enhance accuracy and efficiency. This survey provides a comprehensive review of sensing technologies used in autonomous retail environments, highlighting their strengths, limitations, and integration strategies.

[Ver más...](#)

Revolutionizing Traffic Management with AI-Powered Machine Vision: A Step Toward Smart Cities

Publicada en arxiv.org, 4/03/2025

The rapid urbanization of cities and increasing vehicular congestion have posed significant challenges to traffic management and safety. This study explores the transformative potential of artificial intelligence (AI) and machine vision technologies in revolutionizing traffic systems. By leveraging advanced surveillance cameras and deep learning algorithms, this research proposes a system for real-time detection of vehicles, traffic anomalies [Ver más..](#)

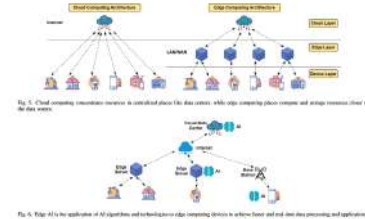


Optimizing Edge AI: A Comprehensive Survey on Data, Model, and System Strategies

Publicada en arxiv.org, 4/03/2025

Xubin Wang, Weijia Jia The emergence of 5G and edge computing hardware has brought about a significant shift in artificial intelligence, with edge AI becoming a crucial technology for enabling intelligent applications. With the growing amount of data generated and stored on edge devices, deploying AI models for local processing and inference has become increasingly necessary. However, deploying state-of-the-art AI models on resource-constrained edge devices faces significant challenges that must be addressed.

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S2H-securing smart homes: A blockchain-based preservation approach

Publicada en sciencedirect.com, 1/03/2025

Smart home systems are becoming more prevalent and popular in modern society, as they can provide convenience, comfort, and efficiency to the users. The proliferation of the Internet of Things (IoT) creates a network of interconnected devices generating vast amounts of data in real-world applications like smart cities, connected appliances, and supply chain management.

[Ver más..](#)

Application of smart home system in building thermal optimization simulation: A low-carbon building design scheme

Publicada en sciencedirect.com, 1/03/2025

This study aims to explore the application of smart home systems in building thermal optimization simulation and propose a low-carbon building design scheme with the goal of reducing energy consumption. The research began with an analysis of current low-carbon building energy consumption monitoring and related work in the field of thermal science.

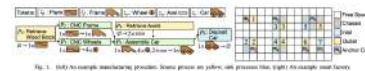
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Jointly Assigning Processes to Machines and Generating Plans for Autonomous Mobile Robots in a Smart Factory

Publicada en arxiv.org, 1/03/2025

Christopher Leet, Aidan Sciortino, Sven Koenig A modern smart factory runs a manufacturing procedure using a collection of programmable machines. Typically, materials are ferried between these machines using a team of mobile robots. To embed a manufacturing procedure in a smart factory, a factory operator must a) assign its processes to the smart factory's machines and b) determine how agents should carry materials between machines.

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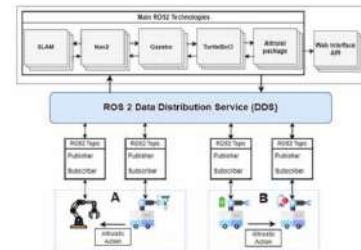


Implementing Altruistic Collaborative Healing in Smart Manufacturing: Context, Simulation, and Analysis

Publicada en ieeexplore.ieee.org, 21/02/2025

L. A. Estrada-Jimenez, Joaquim S. Macuacua, Sanaz Nikghadam-Hojjati, José Barata The rapid transformation of manufacturing companies and frequent market disruptions have significantly increased the complexity of industrial engineering process design. To address these challenges, innovative approaches such as biologicalisation—the integration of biological principles into manufacturing processes—are emerging. Building on this research direction, our research group has been developing the concept of “altruistic collaborative healing.”

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The Future of E-Commerce Fulfillment: Harnessing Advanced Robotics and System Optimization in U.S. Retail

Publicada en <https://ijsrem.com>, 17/02/2025

Shyamkuma r Parikh The rapid expansion of e-commerce has driven an unprecedented demand for efficient, accurate, and scalable fulfilment solutions. Traditional warehouse operations, reliant on manual labour and conventional logistics systems, are increasingly being augmented by advanced robotics and system optimization technologies. This paper explores how autonomous mobile robots (AMRs), robotic picking systems, AI-driven warehouse management, and predictive analytics are reshaping e-commerce fulfilment in the U.S. retail sector.

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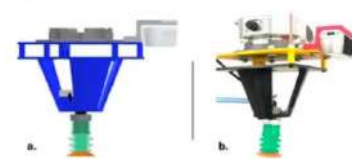
Vision-based manipulation of transparent plastic bags in industrial setups

Publicada en frontiersin.org, 27/01/2025

Rajkumar Muthusamy, K. Ramanathan, Ganesan Subramanian, F. Adetunji, A. Karukayil, P. Samant, S. Shabana, F. Varghese, U. Upadhyay, R. A. Yadav, A. Partridge, E. Pendleton, R. Plant, Y. R. Petillot, M. Koskinopoulou
Introduction This paper addresses the challenges of vision-based manipulation for autonomous cutting and unpacking of transparent plastic bags in industrial setups, contributing to the Industry 4.0 paradigm. Industry 4.0, emphasizing data-driven processes, connectivity, and robotics, enhances accessibility and sustainability across the value chain.

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Figure 1



Scalable and energy-efficient task allocation in industry 4.0: Leveraging distributed auction and IBPSO

Publicada en journals.plos.org, 16/01/2025

Qingwen Li, T. Fan, Lam Sui Kei, Zhaobin Li
Industry 4.0 has transformed manufacturing with the integration of cutting-edge technology, posing crucial issues in the efficient task assignment to multi-tasking robots within smart factories. The paper outlines a unique method of decentralizing auctions to handle basic tasks. It also introduces an improved variant of the improved Binary Particle Swarm Optimization (IBPSO) algorithm to manage complicated tasks that require multi-robot collaboration.

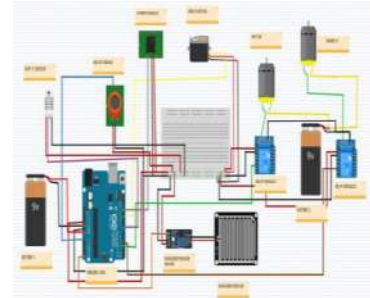
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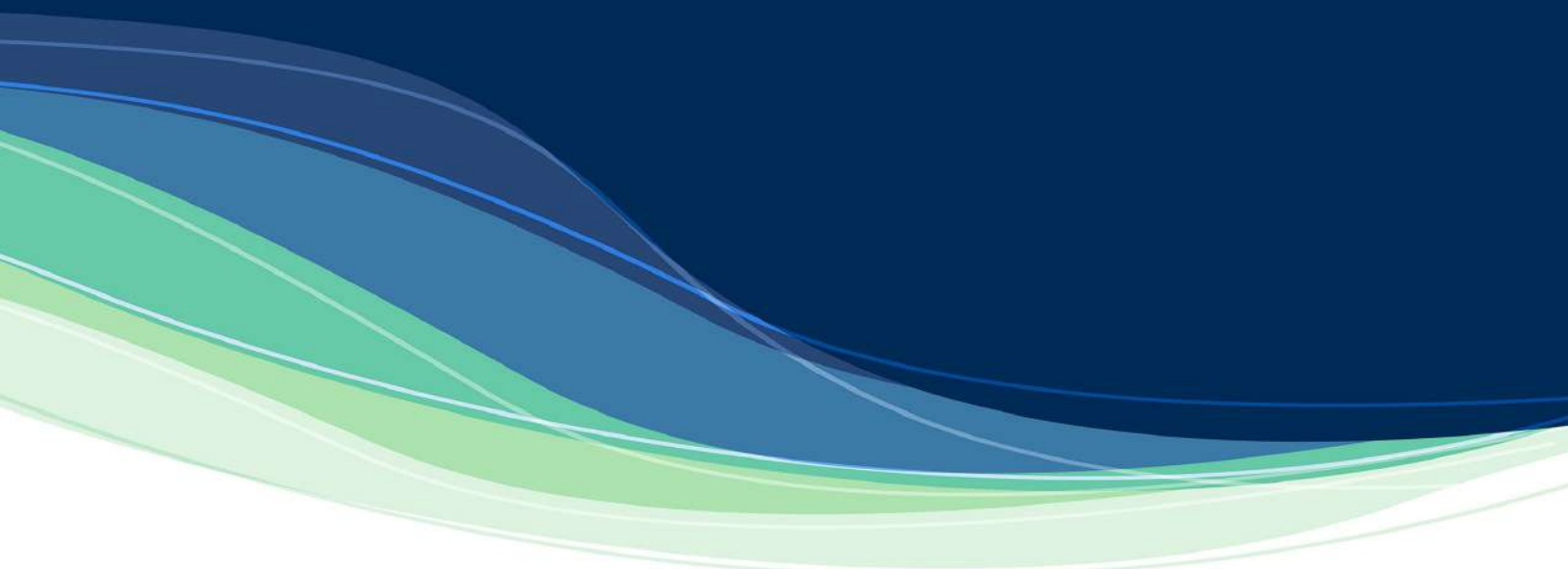
Home Automation using Artificial Intelligent and Internet of Things

Publicada en arxiv.org, 18/03/2024

Vijaya Bhasker Reddy, Balk Dinesh, B. Manikyam, Gayatri, Shravan Kumar, P. Surekha, Sami Anand Nowadays home automation is based on the automation process or else the Internet of Things. This paper presents combination of artificial intelligence and the Internet of things-based automation system. Here we develop some fundamental algorithms of artificial intelligence and then integrate them with electronic sensors. The main part of the Internet of Things is a Controller, we are using an Arduino based controller module here.

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