



SmartLivingPlat

Plataforma Tecnológica de la Domótica
y las Ciudades Inteligentes



Boletín de Vigilancia Tecnológica

NOVIEMBRE - DICIEMBRE 2024

SMART BUILDINGS
SMART CITIES
INDUSTRIA 4.0

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NOTICIAS

Quick to Install and Thermally Insulated BIPV Façade Element

Publicada en ise.fraunhofer.de, 17/12/2024

Fraunhofer ISE and Fraunhofer UMSICHT have developed a prefabricated façade element with integrated photovoltaics for buildings that combines power generation, weather protection and thermal insulation. By eliminating the need for an additional substructure for the solar modules, this element can save large amounts of building materials, while speeding up installation during retrofits at the same time.

[Ver más..](#)



Chinese Robots Hit the Factory Floor

Publicada en thewirechina.com, 15/12/2024

Chinese industrial robot makers have succeeded in taking a bigger share of the domestic market. Can they compete globally? China's factories have been at the heart of the country's economic rise, helping the country come to account for nearly a third of global manufacturing and providing millions of jobs in the process.

[Ver más..](#)



The industrial software market landscape: 7 key statistics going into 2025

Publicada en [iot-analytics.com](https://www.iot-analytics.com), 3/12/2024

The global industrial software market reached \$146 billion in 2023, according to IoT Analytics' 132-page Industrial Software Landscape Report 2024–2030, and is forecasted to reach \$355 billion by the end of the decade, growing at a CAGR of 13.5%.

[Ver más..](#)



State of the Digital Decade 2024 report

Publicada en digital-strategy.ec.europa.eu, 6/11/2024

A competitive, sovereign, and resilient EU: Digital infrastructure and businesses. The yearly State of the Digital Decade report keeps track of the progress of the EU towards the objectives and targets for 2030 set by the Digital Decade Policy Programme.

[Ver más..](#)



Commission opens access to EU supercomputers to speed up AI development

Publicada en ec.europa.eu, 16/11/2024

Today the Commission and the European High-Performance Computing Joint Undertaking (EuroHPC JU) committed to open and widen access to the EU's world-class supercomputing resources for European artificial intelligence (AI) start-ups, SMEs and the broader AI community as part of the EU AI Start-Up Initiative.



[Ver más..](#)

Building materials: Council adopts law for clean and smart construction products

Publicada en consilium.europa.eu, 5/11/2024

The Council has today adopted the construction products regulation (CPR), which harmonises the EU rules for marketing of those products, facilitates their free movement in the single market, reduces administrative burdens and promotes the circular economy and technological development in that sector. This is the last step in the decision-making procedure.



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World's Best Smart Hospitals 2024

Publicada en r.statista.com, 1/11/2024

Based on a worldwide online survey of thousands of medical professionals and the Statista Smart Hospitals Maturity Survey, the 330 leading hospitals in the field of smart technologies were awarded for the third time. The list recognizes hospitals across 28 different countries. Additionally, participants had the opportunity to name a standout category for the recommended smart hospitals. The five categories were: Electronic functionalities, Telemedicine, Digital Imaging, Artificial Intelligence, and Robotics.

[Ver más..](#)



EMPRESAS Y MERCADOS

NATIX Coverage Map: See The World as NATIX Cameras Map It

Publicada en natix.network, 17/12/2024

We are thrilled to unveil the NATIX Coverage Map, a new feature that offers a global perspective on the collective progress of the NATIX Network. This interactive map showcases all the roads mapped and detections made by drivers using the Drive& app.

[Ver más..](#)



Bosch sells off its smart building product business

Publicada en eenewseurope.com, 16/12/2024

Bosch is selling its Building Technologies division's product business for security and communications technology to focus on system integration. European investment firm Triton Partners is to buy three business units covering Video, Access and Intrusion, and Communication, which were the entire product business of Bosch Building Technologies that was offered for sale back in October 2023.

[Ver más..](#)



Introducing Phi-4: Microsoft's Newest Small Language Model Specializing in Complex Reasoning

Publicada en techcommunity.microsoft.com, 13/12/2024

Learn about Phi-4, the latest small language model in Phi family, that offers high quality results at a small size (14B parameters). Today we are introducing Phi-4, our 14B parameter state-of-the-art small language model (SLM) that excels at complex reasoning in areas such as math, in addition to conventional language processing.

[Ver más..](#)



Waterfall Network raises 11.6M USD for smart contract platform development

Publicada en tech.eu, 13/12/2024

Waterfall is a layer one (L1) architecture aiming to provide a solution for security, scalability and decentralisation to support dAPP developers. Swiss smart contract platform Waterfall Network has raised \$11.6 million from Bolt's Capital, Alpha Token Capital, and Enflux.

[Ver más..](#)



ANYbotics robots take a giant step with €57 million in funding

Publicada en eu-startups.com, 12/12/2024

Zurich-based robotics startup ANYbotics has received an additional €57 million raise in funding to expand its global operations and enhance its AI-driven legged inspection robots – closing its Series B round at €104 million.

[Ver más..](#)



Electrical Grid Operator Red Eléctrica Transforms Its Design Process and Collaboration with Dassault Systèmes 3DEXPERIENCE Platform

Publicada en 3ds.com, 11/12/2024

Spain's transmission system operator will use Dassault Systèmes' 3DEXPERIENCE platform on the cloud to coordinate the design of the smart grid energy network. More than 1,500 users will be connected via a "multiscale" virtual twin to visualize the electrical asset ecosystem. Cloud-based collaboration and a common data environment will drive efficiency and innovation for a resilient grid integrating renewable energy sources

[Ver más..](#)



Proptech Next Sense secures €11.5M for its smart building platform

Publicada en tech.eu, 10/12/2024

Next Sense enables clients to decarbonise their buildings across the entire lifecycle optimising operations through AI-powered monitoring and control solutions. Proptech startup Next Sense, has closed a €11.5 million Series A investment round.

[Ver más..](#)

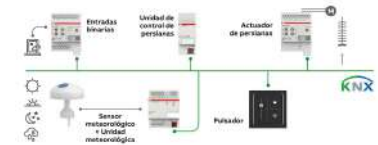


La gama de control de sombreado ABB i-bus® KNX permite una integración y puesta en servicio perfectas

Publicada en new.abb.com, 10/12/2024

ABB anuncia una gama avanzada de actuadores para persianas basados en la tecnología KNX para sus soluciones de automatización de edificios y hogares inteligentes, como parte de su gama de control de fachadas. Las últimas incorporaciones a la gama permitirán una integración perfecta en un sistema KNX para un control fiable y automatizado de persianas, además de ofrecer funciones de seguridad y ahorro energético mejoradas para permitir edificios más sostenibles.

[Ver más..](#)



Padua-based Quindi raises €525k to accelerate development of its AI Production Copilot for smart manufacturing

Publicada en eu-startups.com, 4/12/2024

Italian startup Quindi has announced the completion of the first tranche of a seed funding round, securing €525k to develop its AI Production Copilot. The investment was led by Open Venture, a venture capital vehicle specialising in industrial innovation under the Open Advisory and ELIS Group ecosystem.

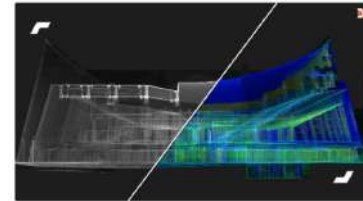


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¿Doble digital o gemelo digital de un edificio: cuáles son las diferencias?

Publicada en mydigitalbuildings.com, 21/11/2024

El término “gemelo digital” surgió en la década de 1970 en el sector industrial, coincidiendo con la llegada de las computadoras a los estudios de diseño. Inicialmente, los gemelos digitales eran réplicas precisas de procesos o equipos, creados principalmente para realizar pruebas de choque no destructivas.



[Ver más..](#)

Innovantia incorpora 24 robots Motoman de Yaskawa en el centro logístico y de producción de la ONCE

Publicada en automaticaeinstrumentacion.com, 18/11/2024

Innovantia ha automatizado el centro logístico y de producción de la Organización Nacional de Ciegos Españoles (ONCE) ubicado en Madrid mediante un nuevo sistema de gestión robotizada, más ecológica y sostenible, para distribuir a los 36.000 puntos de venta repartidos por toda España, asegurando su procesamiento individual y una trazabilidad completa desde su impresión hasta su entrega.



[Ver más..](#)

On-site document management made easy with Bricsys® and LB Aproplan

Publicada en bricsys.com, 7/11/2024

The construction industry faces several challenges regarding document management. To deliver projects on time and within budget, project managers must easily maintain document version control, manage user access to documents, and streamline approval processes. Poor document management inevitably leads to complications, delays, efficiency loss and increased costs down the line.



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PATENTES

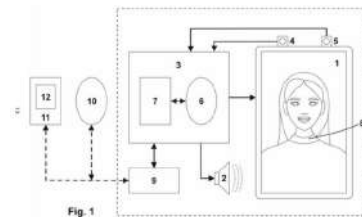
Interactive device for information management

Publicada en Espacenet, 29/12/2024

Solicitante: VIRTUAL IMMERSIVE S L [ES]

Interactive device for information management, suitable for storing, searching and later retrieving various types of information, capable of autonomous operation, equipped with a display screen, optionally behind a mirror, capable of displaying a metahuman

[Ver más..](#)



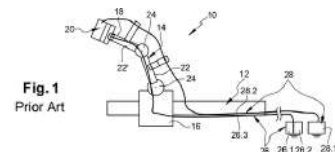
Painting Device Having A Movable Robotic Arm Carrying A Tool And A Movable Piece Of Equipment Connected By An Umbilical Connection To The Tool

Publicada en Espacenet, 26/12/2024

Solicitante: AIRBUS SAS [FR]; AIRBUS OPERATIONS SL [ES]; AIRBUS OPERATIONS GMBH [DE]

A painting device including at least one guide system, at least a first movable support configured to move along the guide system, a robotic arm secured to the first movable support, at least a first tool connected to the free end of the robotic arm

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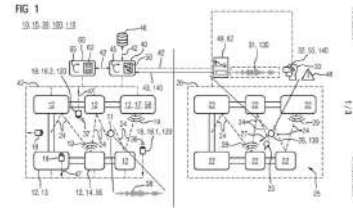
Virtual-Reality-Supported Diagnostic Method For A Facility With Computer-Based Auralisation

Publicada en Espacenet, 19/12/2024

Solicitante: SIEMENS AG [DE]

The invention relates to a method (100) for detecting an impermissible operating state of a facility (10) which comprises a plurality of components (12, 13, 14, 17) which are each designed as a sound source (56, 58), as an at least partially sound-reflecting object and/or at least partially sound-absorbing object. In the method (100), a first and a second acoustic pattern

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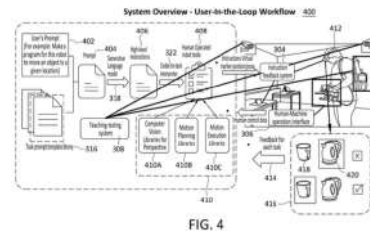
Human-In-Loop Robot Training And Testing System With Generative Artificial Intelligence (AI)

Publicada en Espacenet, 12/12/2024

Solicitante: ACUMINO [US]

A robot teaching and testing system and method that performs human-operated robot tasks according to instructions generated from generative AI models. The process starts with a user prompt and combines the user prompt with predefined prompt templates to generate well-formatted text prompts.

[Ver más..](#)

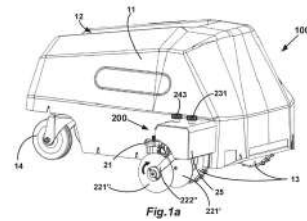


Spraying Module And Self-Propelled Autonomous Marking Robot

Publicada en Espacenet, 12/12/2024

Solicitante: TURF TANK APS [DK]

A spraying module (200) for a self-propelled autonomous marking robot (100) and a self-propelled autonomous marking robot (100) for marking the ground (600) of a sports field are disclosed. The spraying module comprises a mechanical connector (26) for engaging in a mechanical connection with the self-propelled autonomous marking robot [Ver más..](#)

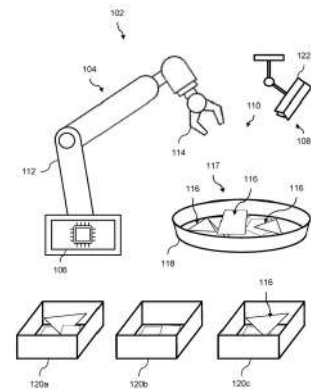


Method Of Synthesising Training Datasets For Autonomous Robotic Control

Publicada en Espacenet, 5/12/2024

Solicitante: OCADO INNOVATION LTD [GB]

The present disclosure relates to a computer-implemented method of synthesising a training dataset for training a comparison function of a machine learning service in the detection of a multi-pick event in which a robotic manipulator erroneously picks two or more items concurrently [Ver más..](#)



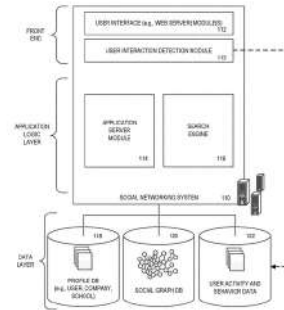
Generative Artificial Intelligence For Embeddings Used As Inputs To Machine Learning Models

Publicada en Espacenet, 5/12/2024

Solicitante: MICROSOFT TECHNOLOGY LICENSING LLC [US]

In an example embodiment, a generative artificial intelligence (GAI) model is used to generate embeddings, eliminating the need for a separately trained embedding model or layer. These embeddings may then be used as input to another machine learning model.

[Ver más..](#)



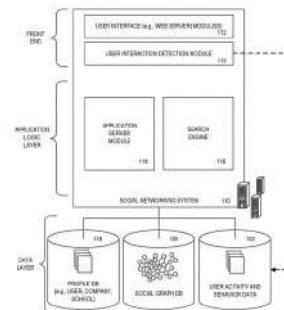
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[Ver más..](#)



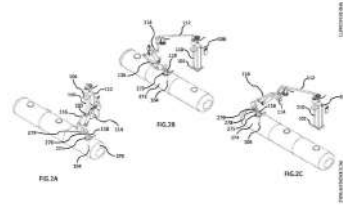
Loading Device For Transferring Fluids

Publicada en Patentscope, 5/12/2024

Solicitante: GASSO EQUIPMENTS S A [ES]

The present invention relates to a robotic loading device (100, 400) for transferring fluids between a first zone and a second zone (270,272,274,374). The device (100, 400) includes a loading arm comprising a first section (112, 412) configured to rotate about a fixed inlet portion (110, 410)

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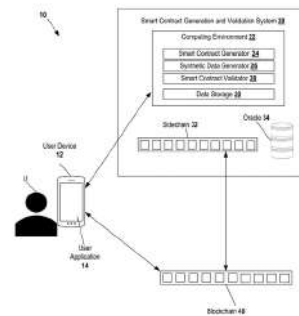
Smart Contract Creation And Management Using Generative Artificial Intelligence With Model Merging

Publicada en Espacenet, 28/11/2024

Solicitante: U S BANK NAT ASSOCIATION [US]

Methods and systems for smart contract creation, validation, and monitoring using generative artificial intelligence models are described. In example implementations, such models may be constructed as merged models from base models and secondary models. The secondary models may be fine-tuned and task-specific.

[Ver más..](#)



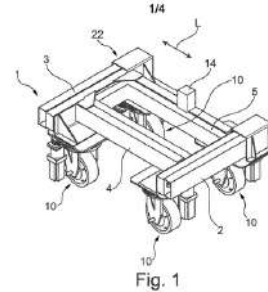
Autonomous Mobile Robot And Method For Controlling A Robot Of This Kind

Publicada en Espacenet, 21/11/2024

Solicitante: SCHAEFFLER TECHNOLOGIES AG [DE]

The invention relates to an autonomous mobile robot (1) comprising - a chassis (22) having a front sliding module (2), a rear sliding module (3), an outer sliding module (4) and an inner sliding module (5), - at least one first linear guide mechanism (6) which is designed to move the outer sliding module (4) relative to the inner sliding module (5), - at least one second linear guide mechanism

[Ver más..](#)



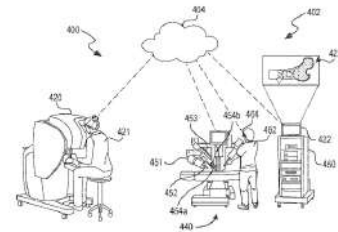
Robotic surgical system for virtual reality based robotic telesurgical operations

Publicada a Patentscope, 19/11/2024

Titular: IX INNOVATION LLC [US]

Methods, apparatuses, and systems for performing a virtual reality based robotic telesurgical demonstration, training, and credentialing are disclosed. A user may select from a variety of procedure simulations and perform a surgical procedure in a virtual environment.

[Ver más..](#)



Method For Controlling Autonomous Mobile Robot, And Autonomous Mobile Robot

Publicada en Espacenet, 14/11/2024

Solicitante: POSITEC POWER TOOLS SUZHOU CO LTD [CN]

The present invention relates to a method for controlling an autonomous mobile robot, and an autonomous mobile robot. An automatic working method comprises: receiving near-field obstacle information sent by at least one sensor; on the basis of the near-field obstacle information, generating a map of obstacle positions around an autonomous mobile robot

[Ver más..](#)



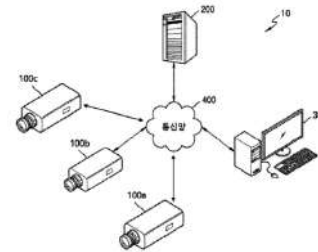
Adaptive Update Of Neural Network Model For Object Re-Identification

Publicada en worldwide.espacenet.com, 7/11/2024

Solicitante: HANWHA VISION CO LTD [KR]

A method for updating a neural network model for object re-identification is disclosed. The present specification comprises storing a pretrained neural network model for object re-identification, detecting an object from an image acquired from a newly installed site, and acquiring training data for updating according to predetermined criteria

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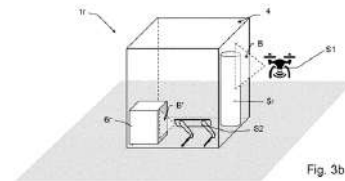


Virtual 3D-Scanning Environment

Publicada en Espacenet, 6/11/2024

Solicitante: HEXAGON TECHNOLOGY CT GMBH [CH]

The invention relates to a scanning method for 3D-laser scanning using a virtual reality scene (1r) for a remote operator wherein based on a virtual position of the user, a scan region (4) is automatically defined. The scan region is then scanned by a scanner (S1, S2), for example a robotic unmanned ground or aerial vehicle, UGV or UAV, scanner



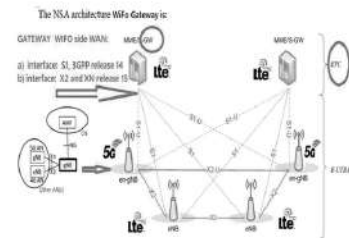
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Distributed Intermediate Control Node (Gateway) With IoT And Ai Capability, Integrated In A Multiplay Telecommunication System And Applied To Small Cells In 4g And 5g Mobile Networks

Publicada en Espacenet, 6/11/2024

Solicitante: WIFO NETWORKS S L [ES]

A distributed IoT and AI enabled intermediate control node (Gateway) integrated in a multiplay telecommunication system applied to small cell in 4 and 5G mobile networks, which this patent proposes, manages and coordinates in an intermediate equipment located between the telephone operator(s)



[Ver más..](#)

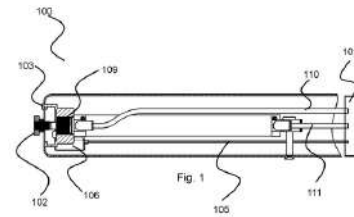
Device For Delivering Bone Cement By An Op-Robot

Publicada en Patentscope, 6/11/2024

Solicitante: HERAEUS MEDICAL GMBH [DE]

Dispositivo (100) para la dispensación mecánica de cemento óseo, que comprende una unidad de conexión (101) que está preparada para conectarse a un robot quirúrgico, una unidad de compresión (102) que está preparada para dispensar cemento óseo

[Ver más..](#)



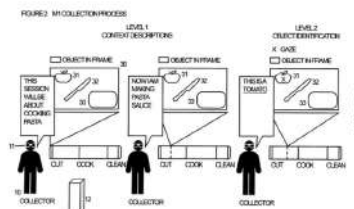
A Computer-Implemented Method Of Generating At Least One Dataset Associated With Objects Of At Least One Image Of A Real Environment For Annotating At Least One Image Frame For Training A Machine Learning Model

Publicada en Espacenet, 6/11/2024

Solicitante: RAMBLR GMBH [DE]

The invention relates to computer-implemented methods of generating at least one dataset associated with one or more objects of at least one image of a scene of a real environment, in particular egocentric video data. Such generated at least one dataset is configured for input to a computer-implemented process for annotating at least one image frame of a scene of a real environment

[Ver más..](#)



System For Controlling A Smart Home And Method For Controlling A Smart Home

Publicada en Espacenet, 6/11/2024

Solicitante: VEMMIO SP Z O O [PL]

A system (1) for controlling a smart home, comprising at least one base station (11) provided with a user identification system (116), at least one satellite station (12), at least one environmental sensor (15), at least one actuator (16), also comprising at least one preference identification module

[Ver más..](#)

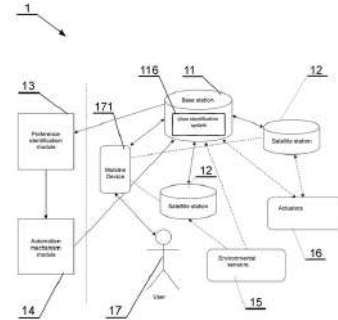


Fig. 1

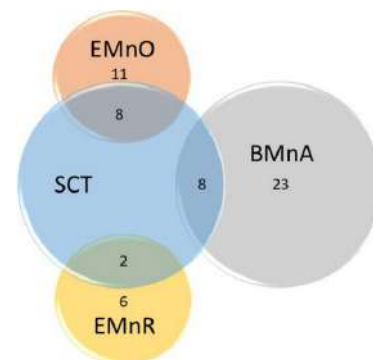
PUBLICACIONES CIENTÍFICAS

The Potential of Blockchain Technology and Smart Contracts in the Energy Sector: A Review

Publicada en mdpi.com, 27/12/2024

The energy sector is undergoing a period of technological transformation, driven by the emergence of blockchain and smart contracts. These technologies have the potential to revolutionize energy markets and significantly reduce transaction costs, improve efficiency, and increase transparency. The rising energy prices in recent years have been a cause for global concern.

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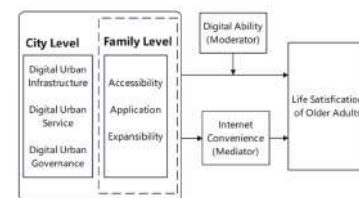


From digital cities to smart homes: how does smart older adults care affect the life satisfaction of older adults?—Evidence from CLASS 2020

Publicada en nature.com, 19/12/2024

China faces a growing challenge in providing adequate age-friendly care services due to a rapidly aging population. Smart older adults care (SOAC), developed under the concepts of age-friendly cities and communities (AFCC) and smart healthy age-friendly environments (SHAFE), aims to address this imbalance between service demand and supply. This study explored the impact of SOAC on the life satisfaction of older adults in China using a multi-level Logit model and data from CLASS 2020.

[Ver más..](#)

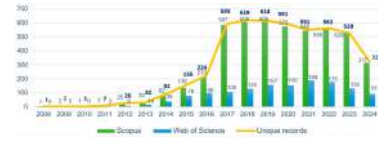


Energy in Smart Cities: Technological Trends and Prospects

Publicada en mdpi.com, 18/12/2024

Energy management in smart cities has gained particular significance in the context of climate change and the evolving geopolitical landscape. It has become a key element of sustainable urban development. In this context, energy management plays a central role in facilitating the growth of smart and sustainable cities.

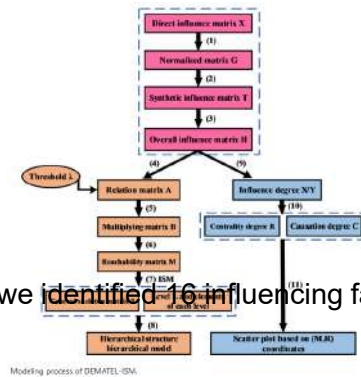
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The application obstacles of BIM technology in green building project and its key role path analysis

Publicada en nature.com, 5/12/2024

The purpose of this study is to identify and analyze the application barriers and internal mechanisms of BIM technology in green building projects. It is found that BIM technology can effectively integrate information and optimize management, but its application still faces economic externalities and requires government intervention to promote its development. Through the analysis of five aspects of technology, economy, management, policy and environment, we identified 16 influencing factors and focused on nine key factors



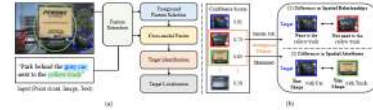
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LidaRefer: Outdoor 3D Visual Grounding for Autonomous Driving with Transformers

Publicada en arxiv.org, 7/11/2024

3D visual grounding (VG) aims to locate relevant objects or regions within 3D scenes based on natural language descriptions. Although recent methods for indoor 3D VG have successfully transformer-based architectures to capture global contextual information and enable fine-grained cross-modal fusion, they are unsuitable for outdoor environments due to differences in the distribution of point clouds between indoor and outdoor settings.

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Large Intelligent Surfaces with Low-End Receivers: From Scaling to Antenna and Panel Selection

Publicada en arxiv.org, 7/11/2024

We analyze the performance of large intelligent surface (LIS) with hardware distortion at its RX-chains. In particular, we consider the memory-less polynomial model for non-ideal hardware and derive analytical expressions for the signal to noise plus distortion ratio after applying maximum ratio combining (MRC) at the LIS.

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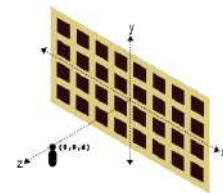


Fig. 1: Array and UE configuration with coordinate system.

Demo: Paving the Way for Smart Manufacturing with 5G/TSN Convergence and Augmented Reality

Publicada en nature.com, 7/11/2024

The fifth-generation (5G) mobile/cellular and time-sensitive networking (TSN) technologies are widely recognized as the key to shaping smart manufacturing for Industry 4.0 and beyond. Converged operation of the two offers end-to-end real-time and deterministic connectivity over hybrid wired and wireless segments.

[Ver más..](#)



Fig. 1. Demonstration setup for AR-aided remote assistance use case over a hybrid 5G and TSN system.

AI Horizon Scanning – White Paper p3395, IEEE-SA. Part III: Technology Watch: a selection of key developments, emerging technologies, and industry trends in Artificial Intelligence

Publicada en arxiv.org, 5/11/2024

Generative Artificial Intelligence (AI) technologies are in a phase of unprecedented rapid development following the landmark release of Chat-GPT, which brought the phenomenon to wide public attention.

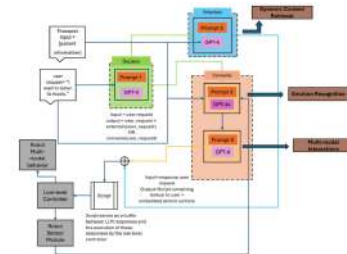
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The Future of Intelligent Healthcare: A Systematic Analysis and Discussion on the Integration and Impact of Robots Using Large Language Models for Healthcare

Publicada en arxiv.org, 5/11/2024

The potential use of large language models (LLMs) in healthcare robotics can help address the significant demand put on healthcare systems around the world with respect to an aging demographic and a shortage of healthcare professionals.

[Ver más..](#)



Towards Interoperability Testing of Smart Energy Systems – An Overview and Discussion of Possibilities

Publicada en pnas.org, 5/11/2024

Interoperability is the key to implementing a wide range of energy systems applications. It involves the seamless cooperation of different methods and components. With smart energy systems, interoperability faces challenges due to integrating different approaches and technologies.

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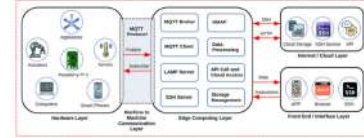
Challenges	Requirements
<i>Network of EV Charging Stations</i>	
<ul style="list-style-type: none">Fragmentation of networksComplex user experienceRoaming problems	<ul style="list-style-type: none">Standardised protocols, data models, and interface specificationsCommon principles for data sharingCompatibilitySeamless access

Internet of Things-based Home Automation with Network Mapper and MQTT Protocol

Publicada en sciencedirect.com, 5/11/2024

The increasing ability of internet-connected daily life electronic gadgets has propelled smart homes into a global trend. The Internet of Things (IoT) enables ambient devices to communicate and interact seamlessly through various sensors. Emerging technical concepts like Web3 and Industry 5.0 require decentralised and intelligent systems near the network's edge.

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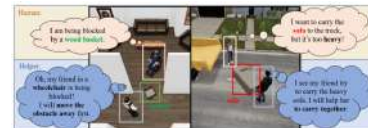


Constrained Human-AI Cooperation: An Inclusive Embodied Social Intelligence Challenge

Publicada en arxiv.org, 4/11/2024

We introduce Constrained Human-AI Cooperation (CHAIC), an inclusive embodied social intelligence challenge designed to test social perception and cooperation in embodied agents. In CHAIC, the goal is for an embodied agent equipped with egocentric observations to assist a human who may be operating under physical constraints – e.g., unable to reach high places or confined to a wheelchair

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The Enhancement of Software Delivery Performance through Enterprise DevSecOps and Generative Artificial Intelligence in Chinese Technology Firms

Publicada en arxiv.org, 4/11/2024

This study investigates the impact of integrating DevSecOps and Generative Artificial Intelligence (GAI) on software delivery performance within technology firms. Utilizing a qualitative research methodology, the research involved semi-structured interviews with industry practitioners and analysis of case studies from organizations that have successfully implemented these methodologies.

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Adaptive multi-task ensemble framework for smart home automation

Publicada en sciencedirect.com, 1/11/2024

Smart home technology has evolved rapidly with an emphasis on indoor environmental control. It aims to automate the control of the indoor environment through sensors, regulators, and other technologies in order to improve comfort, energy saving, emission reduction, safety, and intelligence.

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The evolution of volumetric video: A survey of smart transcoding and compression approaches

Publicada en onlinelibrary.wiley.com, 4/11/2024

Volumetric video, the capture and display of three-dimensional (3D) imagery, has emerged as a revolutionary technology poised to transform the media landscape, enabling immersive experiences that transcend the limitations of traditional 2D video.

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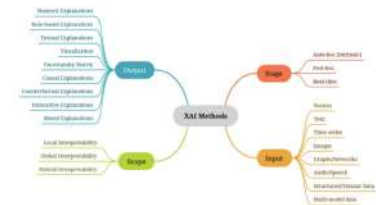


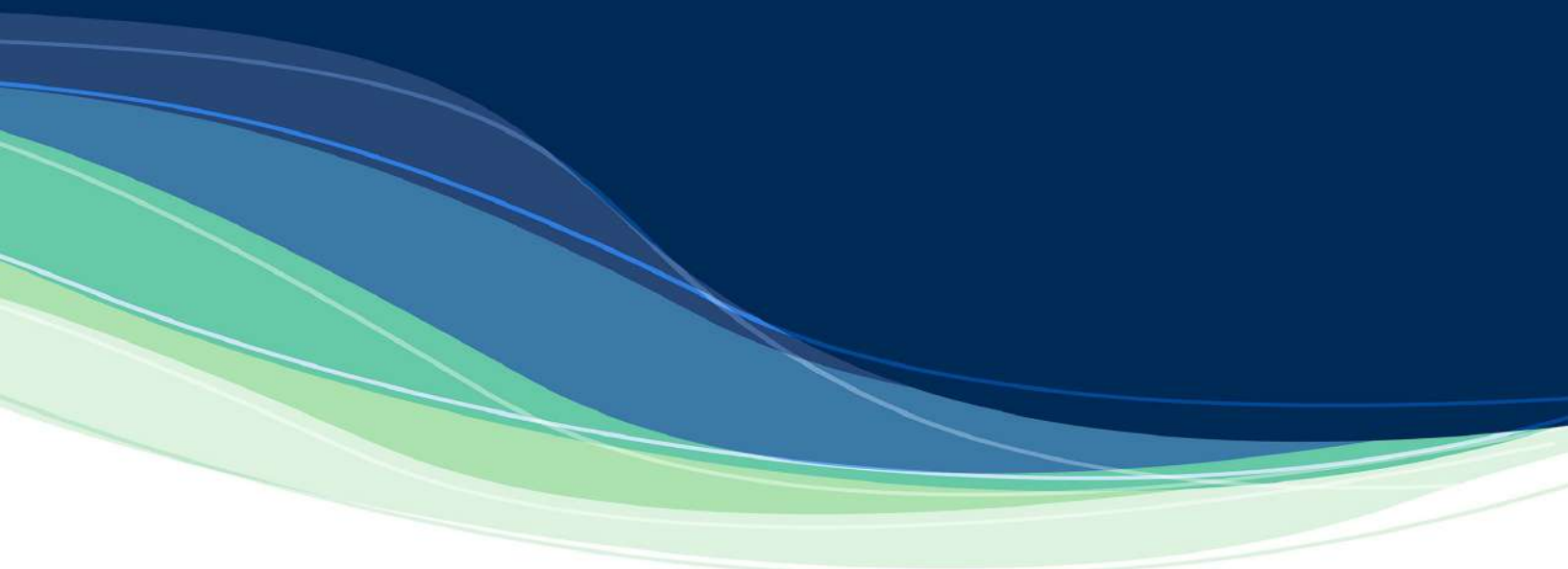
Towards next-gen smart manufacturing systems: the explainability revolution

Publicada en nature.com, 6/11/2024

The paper shares the author's perspectives on the role of explainable-AI in the evolving landscape of AI-driven smart manufacturing decisions. First, critical perspectives on the reasons for the slow adoption of explainable-AI in manufacturing are shared, leading to a discussion on its role and relevance in inspiring scientific understanding and discoveries towards achieving complete autonomy. Finally, to standardize explainability quantification

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