



SmartLivingPlat

Plataforma Tecnológica de la Domótica
y las Ciudades Inteligentes



Boletín de Vigilancia Tecnológica

ENERO - FEBRERO 2025

SMART BUILDINGS
SMART CITIES
INDUSTRIA 4.0

Ayuda PTR2024-002933 financiada por:



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CONTENIDOS

NOTICIAS	5
Smart Cities Marketplace Takes Part In European Energy Communities Facility Strategic Dialogue	5
Commission opens access to EU supercomputers to speed up AI development	5
What's next for AI agents? 4 trends to watch in 2025	6
OOKLA report: Slow legacy Wi-Fi CPEs thwart the gigabit fibre experience in Europe	6
Alianza estratégica en simulación de procesos de fabricación avanzada entre IMDEA Materiales y CIMNE	7
How to Implement Blockchain in Supply Chain Management	7
The best smart home tech at CES 2025	8
Drones, Digital Twins Boost Collaboration on Complex Project	8
2025 IoT Breakthrough Winners	9
Best garage security systems in 2025	9
EMPRESAS Y MERCADOS	10
Cendyn goes bold with AI across hotel analytics platforms	10
Appteronik's humanoid robots take the first steps toward building themselves	10
Chinese e-scooter brands Ninebot, Niu integrate DeepSeek AI for smarter rides	11
Meta revoluciona la IA: Modelos capaces de convertir la actividad cerebral en texto	11
Siempelkamp and SMARTECH Partner to Present Revolutionary Prod-IQ · Smart-Press at EPF and WMF Events	12
Multiverse Computing and Kinesis Network Unite to Redefine AI Optimization	12
Invelon: Caso de éxito en el Hospital de la Santa Creu i Sant Pau	13
Siemens unveils breakthrough innovations in industrial AI and digital twin technology at CES 2025	13
PATENTES	14
Range Extender For Home Automation Network	14
System And Method For Controlling A Wearable Robotic Device	14
System And Method For Training, Tagging, Recommending, And Generating Digital Content Based On Biometric Data	15
Robot system	15

Home Automation System For Controlling Swimming Pools And Water Plants In General	16
Fall Risk Mitigation System	16
Integrity and Privacy-Preserving Federated Learning in a Smart Factory Using Smart Contracts and Merkle Tree-Based Key Management	17
Hierarchical Polytope Workspace Mapping For Human-Robot Collaboration	17
Machine Learning And Augmented-Reality For Proactive Thermal Amelioration	18
Modular Control Assembly For Home Automation System	18
Garment Fabrication Using Machine Learning	19
Robot móvil para uso en un espejo tubular y método para mover dicho robot en un espejo tubular	19
Smart Lighting And Appliance Control System With Location And Calendar Awareness	20
Smart Digital Interactions With Augmented Reality And Generative Artificial Intelligence	20
Radio Wave Controller For Residential Lighting Automation And Control System For Residential Lighting Automation	21
Countertop Appliance With Physical And Remote Motor Control	21
Dispositivo de accionamiento para un robot y robot con dicho dispositivo de accionamiento	22
Surgical Robotic System And Method For Defining A Restricted Access Volume For Such A Surgical Robotic System	22
Techniques for intruder detection	23
Robotic Assisted Ophthalmic Surgery System	23
Systems And Methods For Personalized Home Automation And Device Control Various	24
Training Vision-Language Neural Networks For Real-World Robot Control	24
Robotic Camera Movement Filming Solution	25
Method And System For Property Improvement Recommendations	25
Device And Method For Gesture Control Of Motorized Blinds	26
Controlling Smart Environments Based On A Semantic Control Model	26
Robot Head For Mounting Clip-Type Components And Installation For Mounting Clip-Type Components	27
Detachable smart curtain opening and closing device control method and system	27
IoT smart plug-in integrated management system with VPN function	28
Folding support device for smart doors	28
System And Method For Managing And Controlling 5G-Enabled Autonomous Mobile Robots	29
Apparatus And Method For Controlling Home Appliance In Response To Waking Up In Middle Of Sleep	29

Robot autonome pour la protection incendie	30
Collaborative Human-Robot Error Correction And Facilitation	30
Robotic Assembly For A Surgical System	31

PUBLICACIONES CIENTÍFICAS **32**

Revolutionizing Traffic Management with AI-Powered Machine Vision: A Step Toward Smart Cities	32
S2H-securing smart homes: A blockchain-based preservation approach	32
Application of smart home system in building thermal optimization simulation: A low-carbon building design scheme	33
Leveraging Multimodal-LLMs Assisted by Instance Segmentation for Intelligent Traffic Monitoring	33
Optimization under Attack: Resilience, Vulnerability, and the Path to Collapse	34
Data-driven Modality Fusion: An AI-enabled Framework for Large-Scale Sensor Network Management	34
Network-Wide Traffic Flow Estimation Across Multiple Cities with Global Open Multi-Source Data: A Large-Scale Case Study in Europe and North America	35
AIoT-based smart traffic management system	35
Intelligent Sensing-to-Action for Robust Autonomy at the Edge: Opportunities and Challenges	36
Leveraging LLMs for Dynamic IoT Systems Generation through Mixed-Initiative Interaction	36
Light commodity devices for building vehicular ad hoc networks: An experimental study	37
Framework to analyze and exploit the smart home IoT firmware	37
Impact of the Smarter Safer Homes Solution on Quality of Life and Health Outcomes in Older People Living in Their Own Homes: Randomized Controlled Trial	38
Technological applications of social robots to create healthy and comfortable smart home environment	38

NOTICIAS

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

Publicada en <https://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.

[Ver más..](#)



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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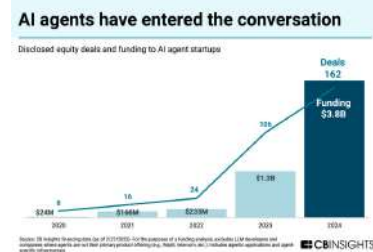


What's next for AI agents? 4 trends to watch in 2025

Publicada en cbinsights.com, 28/02/2025

From increasing specialization to rising infrastructure markets, here's where the opportunities lie across the AI agent landscape. Where is this data coming from? AI agents are dominating the conversation. Mentions on corporate earnings calls grew 4x quarter-over-quarter in Q4'24. And they're on pace to double again this quarter.

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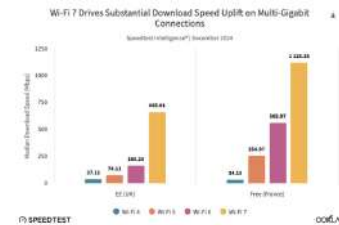


OOKLA report: Slow legacy Wi-Fi CPEs thwart the gigabit fibre experience in Europe

Publicada en wifinowglobal.com, 27/02/2025

Parts of Europe are leading the pack globally when it comes to rolling out gigabit fibre broadband to the home – but sadly, much of this is to no avail. Most European broadband service providers are still stuck operating legacy Wi-Fi CPEs, which undermine the potential benefits of multi-gigabit fibre infrastructure. This is the conclusion of an OOKLA research report published this week.

[Ver más..](#)



Alianza estratégica en simulación de procesos de fabricación avanzada entre IMDEA Materiales y CIMNE

Publicada en materiales.imdea.org, 25/02/2025

El pasado jueves, 21 de febrero, recibimos en IMDEA Materiales la visita de una delegación del Centro Internacional de Métodos Numéricos en Ingeniería (CIMNE), centro de investigación de referencia internacional en su campo. El objetivo de la visita, además de que la delegación de CIMNE conociera de primera mano los laboratorios y actividades de IMDEA Materiales, fue la de explorar sinergias e identificar mecanismos de colaboración.

[Ver más..](#)



How to Implement Blockchain in Supply Chain Management

Publicada en datafloq.com, 27/02/2025

Blockchain can solve major supply chain issues like inefficiencies, lack of transparency, and fraud. It creates secure, tamper-proof records, improves tracking, and automates processes with smart contracts. Companies like Walmart and Deloitte already use blockchain to cut costs, speed up operations, and ensure compliance.

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The best smart home tech at CES 2025

Publicada en appleinsider.com 15/01/2025

We've completed our trek across the vast halls of CES 2025 to round up the best smart home devices for Apple users. From robot vacuums to pocketable projectors, here's what we've found. After nearly a week of wandering the halls — and filling our Apple Watch rings — we've surfaced from CES with our top finds. We focused primarily on Apple Home or Matter-enabled products, but there are some others that we threw in too.

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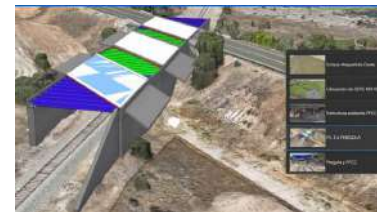


Drones, Digital Twins Boost Collaboration on Complex Project

Publicada en esri.com 14/01/2025

Miguel Américo believes that poor data sharing and lack of coordination are major culprits behind the global construction industry's long-standing productivity issues. "Information is power, [but] it's very difficult to exchange information among the members of the value chain, which is something that happens all the time in other industries,"

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2025 IoT Breakthrough Winners

Publicada en iotbreakthrough.com, 31/12/2024

Recognizing the world's best IoT companies, products and people. 3,850 SUBMISSIONS 100 + AWARDS 13 CATEGORIES

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Best garage security systems in 2025

Publicada en cybernews.com, 31/12/2024

Besides cars, we all store stuff in our garages, especially when you don't have enough storage space in your home. Garages hold many valuable items, from tools to extra furniture and old gadgets you use occasionally. Unfortunately, we often overlook our garages when considering home security — and burglars know this. So, a simple lock won't cut it anymore.

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EMPRESAS Y MERCADOS

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.

[Ver más..](#)



Apptронik's humanoid robots take the first steps toward building themselves

Publicada en techcrunch.com, 25/02/2025

Apptронik, an Austin-based maker of humanoid robots, on Tuesday announced a new pilot partnership with American supply chain/manufacturing stalwart, Jabil. The deal arrives two weeks after Apptронik announced a \$350 million Series A financing round aimed at scaling up production of its Apollo robot.

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Chinese e-scooter brands Ninebot, Niu integrate DeepSeek AI for smarter rides

Publicada en scmp.com, 17/02/2025

Ninebot and Niu Technologies both claim to be the first to put DeepSeek tech in electric two-wheelers, following moves from EV makers. China's leading electric two-wheeler brands, Ninebot and Niu Technologies, are racing to integrate artificial intelligence (AI) models from DeepSeek in a bid to enhance their smart-riding capabilities.



[Ver más..](#)

Meta revoluciona la IA: Modelos capaces de convertir la actividad cerebral en texto

Publicada en wwwwhatsnew.com, 14/02/2025

Meta, en colaboración con investigadores internacionales, ha logrado un hito en la comprensión de la inteligencia humana. A través de dos estudios innovadores, han desarrollado modelos de inteligencia artificial (IA) capaces de leer e interpretar señales cerebrales para reconstruir frases escritas y mapear el proceso neurológico de conversión de pensamientos en palabras.



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Siempelkamp and SMARTECH Partner to Present Revolutionary Prod-IQ · SmartPress at EPF and WMF Events

Publicada en smartech.com, 4/02/2025

Siempelkamp in partnership with SMARTECH, proudly presented their innovative Prod-IQ · SmartPress solution for autonomous production lines at the prestigious European Wood-Based Panel Symposium (EPF) in Hamburg and China International Furniture Machinery & Woodworking Machinery Fair (WMF) in Shanghai. This groundbreaking solution is designed to transform production processes, enhancing efficiency, automation, and allowing autonomous decision-making capabilities

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Multiverse Computing and Kinesis Network Unite to Redefine AI Optimization

Publicada en multiversecomputing.com, 17/01/2025

Amid headlines about corporations investing in nuclear power plants to meet the insatiable energy needs of AI workloads, two pioneering companies, Multiverse Computing and Kinesis Network Inc. ("Kinesis") have joined forces to provide a groundbreaking alternative—optimizing AI performance while drastically reducing resource consumption. The partnership comes as demand for AI capabilities grows exponentially, and organizations worldwide face mounting challenges related to power demands for these models.

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Invelon: Caso de éxito en el Hospital de la Santa Creu i Sant Pau

Publicada en invelon.com, 15/01/2025

“La integración de la Realidad Virtual y la Realidad Mixta en el Hospital Sant Pau ha revolucionado nuestra práctica clínica. Estas tecnologías nos han permitido avanzar hacia una atención médica más personalizada y de vanguardia, mejorando los resultados y la experiencia del paciente en general.”

[Ver más..](#)



Siemens unveils breakthrough innovations in industrial AI and digital twin technology at CES 2025

Publicada en press.siemens.com, 6/01/2025

Siemens is showcasing its vision for the future where data, AI and software-defined automation will converge to enable unprecedented flexibility, optimization and continuous improvement across the world's industries, for companies of any size. This ambition is at the heart of Siemens' presence at CES 2025, the world's most influential tech event. Siemens – the global leader in industrial software – demonstrated how its technologies are empowering customers to take bold leaps in industrial innovation.

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PATENTES

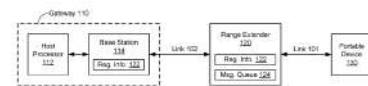
Range Extender For Home Automation Network

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

[Ver más..](#)



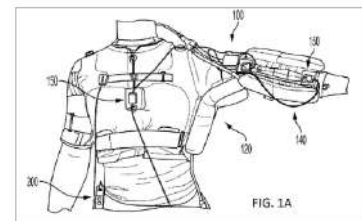
System And Method For Controlling A Wearable Robotic Device

Publicada en Espacenet, 27/02/2025

Solicitante: HARVARD COLLEGE [US]

Systems and methods related to the operation of wearable robotic systems are disclosed. In one embodiment, a user intention model is developed to accurately identify the intentions of a user in real-time. Utilizing data from multiple wearable sensors, including Inertial Measurement Units (IMUs) and capacitive deformation sensors, a neural network-based approach is employed to capture both kinematic-related and kinetic-related signals.

[Ver más..](#)



System And Method For Training, Tagging, Recommending, And Generating Digital Content Based On Biometric Data

Publicada en Espacenet, 27/02/2025

Solicitante: STORYUP INC [US]

The disclosure relates to systems and methods for training, tagging, recommending and/or generating digital content, such as but not limited to virtual reality ("VR"), augmented reality ("AR"), mixed reality ("MR") content, audio content, spatial audio content, video content (e.g., 2-dimensional ("2D") and/or flat video content)

Ver más..

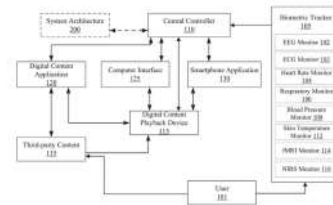


FIG. 1

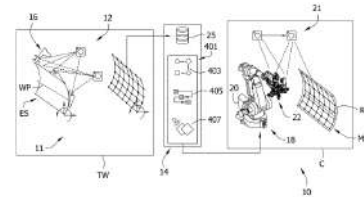
Robot system

Publicada a Patentscope, 20/02/2025

Titular: SPIRIT AEROSYS INC [US]

A robot automation system facilitates automated robotic manufacturing processes by employing a teaching subsystem including a tracking assembly that tracks movement of the mapping tool in a teaching workspace. A computing device in communication with the tracking assembly and the mapping tool receives tracking data from the tracking assembly and the mapping tool indicating movement of the mapping tool along a working path.

Ver más..



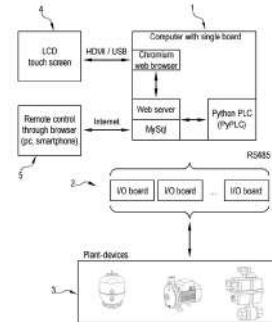
Home Automation System For Controlling Swimming Pools And Water Plants In General

Publicada en Espacenet, 20/02/2025

Solicitante: ERREBI GROUP S R L [IT]

The present invention relates to an automation system which allows remote control of a water plant, such as a swimming pool.

[Ver más..](#)



Fall Risk Mitigation System

Publicada en Espacenet, 20/02/2025

Solicitante: CHRISTIANA CARE HEALTH SYSTEM INC [US]

A fall risk mitigation system includes a sensor gathering data associated with a person's bodily movements, and a control system that processes the sensor data and assesses the person's fall risk. The sensor may be integrated into a wearable device, or may be integrated into the person's environment as a camera/imaging device, a sensor in a floor tile or mat, etc

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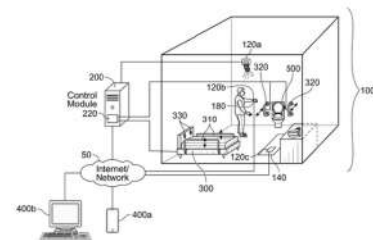


FIG. 1

Integrity and Privacy-Preserving Federated Learning in a Smart Factory Using Smart Contracts and Merkle Tree-Based Key Management

Publicada en Espacenet, 20/02/2025

Solicitante: UNIV SOUTH FLORIDA [US]

An example system and method that can provide integrity and privacy-preserving communication and integrated operation in smart factory and other IOT applications using smart contracts in blockchain and Merkle Tree-based key management operations.

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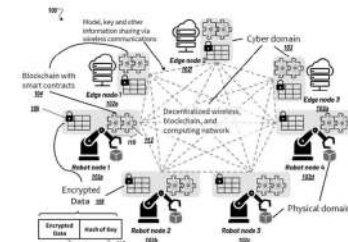


FIG. 1

Hierarchical Polytope Workspace Mapping For Human-Robot Collaboration

Publicada en Espacenet, 20/02/2025

Solicitante: DE LA GUARDIA GONZALEZ RAFAEL [MX]; CAMPOS MACIAS LEOBARDO [MX]; GONZALEZ AGUIRRE DAVID [US]; FELIP LEON JAVIER [US]

Various aspects of techniques, systems, and use cases for robot movement within human-robot collaboration (HRC) areas are disclosed. Convex free-space regions around points of interest in the HRC are detected and updated using one or more sensors.

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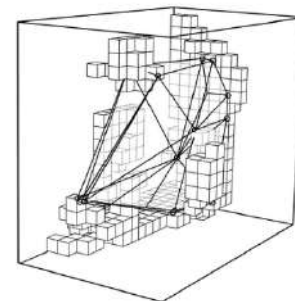


FIG. 1

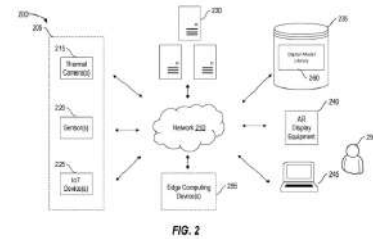
Machine Learning And Augmented-Reality For Proactive Thermal Amelioration

Publicada en Patentscope, 20/02/2025

Solicitante: IBM [US]

Method and apparatus for utilizing machine learning models to simulate and predict proactive actions in digital modeling. Data is collected from one or more sensors in a physical environment. A digital model depicting physical machinery in the physical environment is generated based on the sensor data. One or more operations of the physical machinery is simulated based on the digital model and the sensor data.

[Ver más..](#)



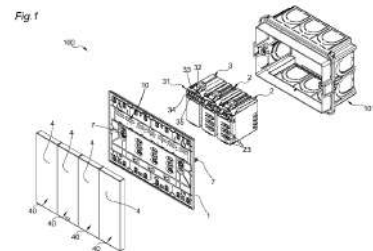
Modular Control Assembly For Home Automation System

Publicada en Espacenet, 19/02/2025

Solicitante: VIMAR SPA [IT]

A modular control assembly for a home automation system comprises a support frame, at least one actuation unit configured in such a way as to provide an actuation signal of an electrical utility to a connection bus of the home automation system, a power supply unit configured in such a way as to power said actuation unit, and at least one control module operable in such a way as to generate an actuation signal.

[Ver más..](#)



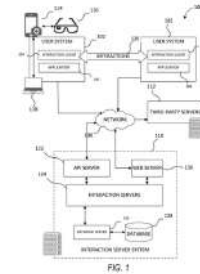
Garment Fabrication Using Machine Learning

Publicada en Espacenet, 6/02/2025

Solicitante: SNAP INC [US]

Methods and systems are disclosed for generating a physical garment using a machine learning model. The methods and systems receive a plurality of parameters of an optimization problem, the plurality of parameters describing a fashion item, and form a prompt based on values of the plurality of parameters.

Ver más..



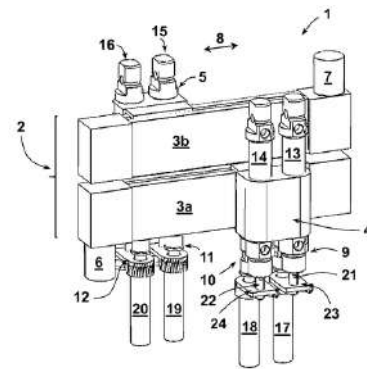
Robot móvil para uso en un espejo tubular y método para mover dicho robot en un espejo tubular

Publicada en Espacenet, 13/02/2025

Solicitante: SK2 ROBOTICS UG HAFTUNGS-
BESCHRAENKT [DE]

The invention relates to a mobile robot, wherein the robot 1 is intended to move independently on a pipe mirror 31, for example in an industrial reactor, having at least one carrier 2 and at least one foot 9, 10, 11, 12, wherein the foot 9, 10, 11, 12 is adjustable relative to the carrier 2 in the intended direction of movement

[Ver más..](#)



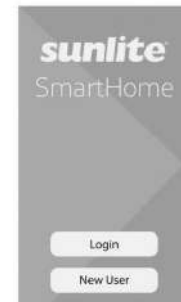
Smart Lighting And Appliance Control System With Location And Calendar Awareness

Publicada en Espacenet, 13/02/2025

Solicitante: LIGHTING & SUPPLIES INC [US]

A Smart Lighting and Home Automation System and methods for controlling the illumination and related electrical devices located in a space through the use of Smart hardware devices including lamps, lights, sensors, switches and dimmers, and a cellular smartphone or remote computer running a software application to control the Smart devices.

[Ver más..](#)



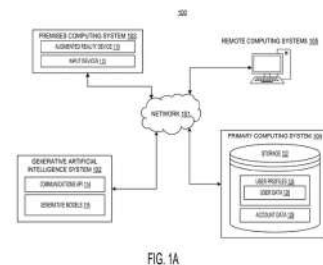
Smart Digital Interactions With Augmented Reality And Generative Artificial Intelligence

Publicada en Espacenet, 06/02/2025

Solicitante: WELLS FARGO BANK NA [US]

Systems, methods, and devices for smart digital interactions with augmented reality and generative artificial intelligence are disclosed. A method includes authenticating a user according to one or more authentication settings provided to the premises computing system. The authentication settings can authorize presentation and processing of a subset of the user data records.

[Ver más..](#)



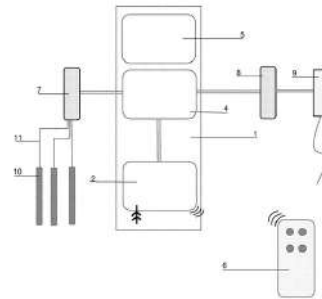
Radio Wave Controller For Residential Lighting Automation And Control System For Residential Lighting Automation

Publicada en Espacenet, 06/02/2025

Solicitante: CARLOS DA RE ANDRE [BR]; ERNESTO ROVELLA FARTO DIEGO [BR]

The present application pertains to a radio wave controller for residential lighting automation and a control system for residential lighting automation, said controller being used in residential lighting automation systems employing solid-state lighting (SSL) fixtures and/or lamps, LEDs in this case

[Ver más..](#)



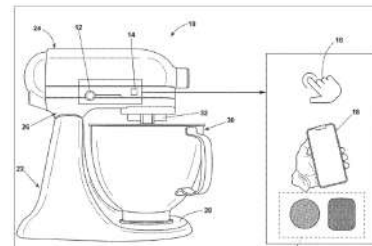
Countertop Appliance With Physical And Remote Motor Control

Publicada en Espacenet, 6/02/2025

Solicitante: WHIRLPOOL CO [US]

A countertop appliance is provided that has a motor and an actuator for setting an operational criteria of the motor, such as motor speed. The position of the actuator can be set physically by a user adjacent to the countertop appliance or via a signal received from a remote device,

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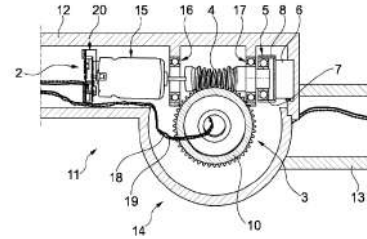


Dispositivo de accionamiento para un robot y robot con dicho dispositivo de accionamiento

Publicada en Patentscope, 6/02/2025

Solicitante: SCHAEFFLER TECHNOLOGIES AG [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..](#)



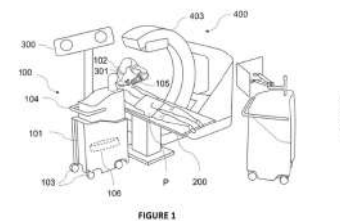
Surgical Robotic System And Method For Defining A Restricted Access Volume For Such A Surgical Robotic System

Publicada en Espacenet, 29/01/2025

Solicitante: ECENTIAL ROBOTICS [FR]

The invention relates to a method for determining a restricted access volume for a surgical robotic system comprising a robotic arm and an end-effector, a registration phantom comprising a set of radiopaque fiducials, the registration phantom being located in proximity to the region of interest, the method comprising the following steps: acquiring at least one 2D X-ray image

[Ver más..](#)



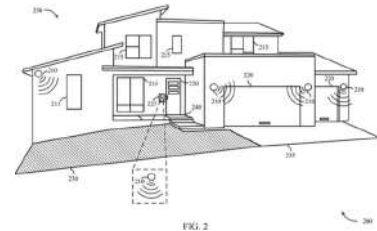
Techniques for intruder detection

Publicada en Espacenet, 28/01/2025

Solicitante: VIVINT INC [US]

Methods, systems, and devices for intruder detection are described. A security and automation system may include a camera configured to monitor a zone of a premises. The security and automation system may detect a person in the zone, for example using the camera, a motion sensor, or another sensor. The security and automation system may determine that the person has remained in the zone

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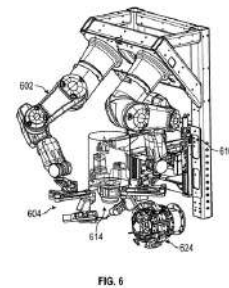
Robotic Assisted Ophthalmic Surgery System

Publicada en Espacenet, 23/01/2025

Solicitante: HORIZON SURGICAL SYSTEMS INC [US]

Devices, methods, and systems related to a robot-assisted ophthalmic surgical platform for cataract surgery are provided. For example, there is a computer-controlled ophthalmic robotic surgical system including: a multimodal visualization subsystem; a tool exchange system; a plurality of robotic arms configured to receive and manipulate surgical tools

[Ver más..](#)



Systems And Methods For Personalized Home Automation And Device Control Various

Publicada en Espacenet, 23/01/2025

Solicitante: PLUME DESIGN INC [US]

Disclosed are systems and methods that, via the disclosed functionality, can involve receiving, via a wearable device, biometric data associated with a wearer of the wearable device. The systems and methods may additionally include receiving, from a management device communicatively coupled to at least one managed device, data representative of a device state

[Ver más..](#)

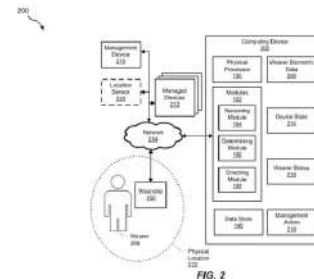


FIG. 2

Training Vision-Language Neural Networks For Real-World Robot Control

Publicada en Espacenet, 23/01/2025

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

[Ver más..](#)

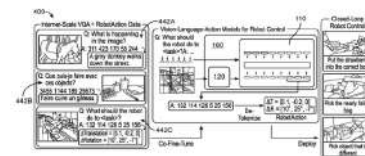


FIG. 4

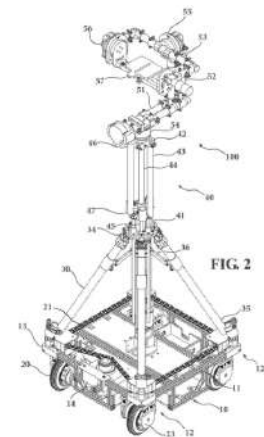
Robotic Camera Movement Filming Solution

Publicada en Espacenet, 23/01/2025

Solicitante: ATMATA LLC [US]

The present technology relates to a robotic filming system that provides an intelligent camera movement solution. The present robotic filming system may be highly portable and scalable, providing a user friendly, intelligent, and repeatable camera motion control solution. In certain embodiments, the robotic filming system may include a mechanical system

[Ver más..](#)



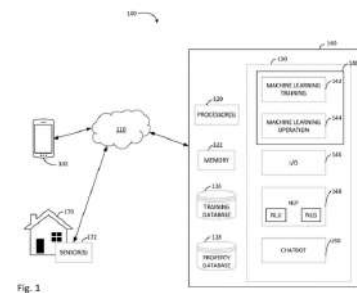
Method And System For Property Improvement Recommendations

Publicada en Patentscope, 23/01/2025

Solicitante: STATE FARM MUTUAL AUTOMOBILE INSURANCE CO [US]

Apparatuses, systems and methods are disclosed for providing property improvement recommendations. The method comprises: (1) receiving, by one or more processors from a user, a first prompt associated with a property; (2) generating, by the one or more processors, a second prompt based upon the first prompt, data associated with the property

[Ver más..](#)



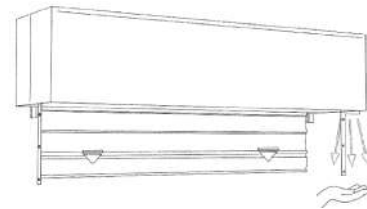
Device And Method For Gesture Control Of Motorized Blinds

Publicada en Espacenet, 22/01/2024

Solicitante: IOT FENSTER S L [ES]

The invention relates to a gesture control method and device for motorized blinds comprising two different circuits: (a) a power circuit; and (b) a control circuit, wherein the power circuit is configured to be coupled to the shaft of the blind motor; and wherein the control circuit comprises at least one positioning sensor, which is a presence detection sensor for detecting presence by means of a laser array

[Ver más..](#)



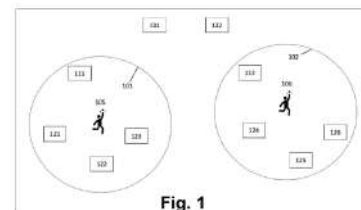
Controlling Smart Environments Based On A Semantic Control Model

Publicada en Patentscope, 15/01/2025

Solicitante: KONINKLIJKE PHILIPS NV [NL]

This invention relates to apparatuses and methods for controlling a smart environment, wherein a semantic control model (such as a (generative) artificial intelligence (AI) or machine learning (ML) model) is used to efficiently control smart devices, wherein the smart devices may be configured to store the semantic control model.

[Ver más..](#)



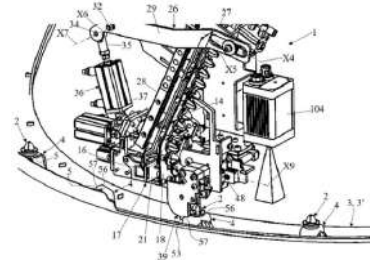
Robot Head For Mounting Clip-Type Components And Installation For Mounting Clip-Type Components

Publicada en Espacenet, 15/01/2025

Solicitante: TECHNOVATIS [FR]

L'invention concerne une tête de robot (1) pour le montage de composants (2) comprenant une tête (10) configurée pour être engagée dans une encoche (5, 8) d'une zone d'engagement (4, 7) d'une pièce et un corps (9) configuré pour être engagé dans un support lors d'un agrafage ultérieur sur ce support, la tête (10) et le corps (9) s'étendant selon un premier axe (X1). La tête de robot

[Ver más..](#)



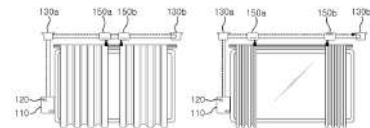
Detachable smart curtain opening and closing device control method and system

Publicada en Espacenet, 14/01/2025

Solicitante: CLOMOUNT CO LTD [KR]

La presente invención se refiere a un sistema de control de dispositivo de apertura/cierre de cortina inteligente desmontable, que comprende: un soporte fijado a al menos uno de un marco de ventana y una pared; un cuerpo principal montado en el soporte y operado para abrir/cerrar una cortina controlando una cuerda

[Ver más..](#)



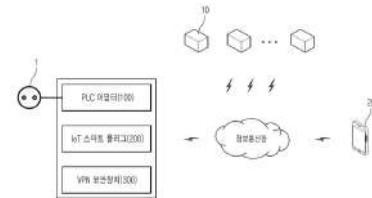
IoT smart plug-in integrated management system with VPN function

Publicada en Espacenet, 14/01/2025

Solicitante: REDMOUSE [KR]

La presente invención se refiere a un sistema de gestión integrado enchufable inteligente de IoT equipado con una función VPN, que incluye un adaptador PLC que se conecta a una toma de corriente para conectarse de manera directa o desmontable a un cableado eléctrico y recibe una señal de comunicación

[Ver más..](#)



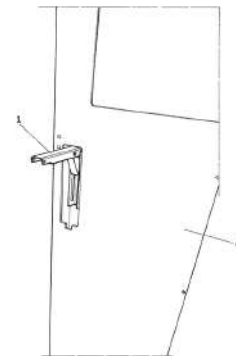
Folding support device for smart doors

Publicada en Espacenet, 9/01/2025

Solicitante: GRANA DOMINGUEZ DANIEL [ES]

A hinged support device for smart doors comprising: a folding element (1) that can rotate between an inactive and an active position, a fastening element (2) which is fixed to the inside of the door leaf (A) and to which the folding element (1) is hinged at a first hinge point (3), and driving means (4) acting on the folding element

[Ver más..](#)



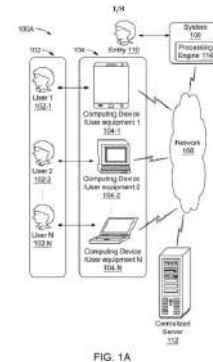
System And Method For Managing And Controlling 5G-Enabled Autonomous Mobile Robots

Publicada en Espacenet, 9/01/2025

Solicitante: JIO PLATFORMS LTD [IN]

The present invention provides a system (108) and method (500) for centrally managing and controlling a fleet of Autonomous Mobile Robots (AMRs). The system (108) comprises a network module (210) configured to provide a private network coverage for each of the plurality of AMRs, a Fleet Management System (FMS) (212) deployed over an edge of network

[Ver más..](#)



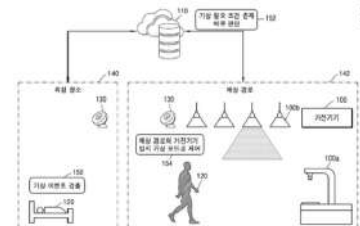
Apparatus And Method For Controlling Home Appliance In Response To Waking Up In Middle Of Sleep

Publicada en Espacenet, 9/01/2025

Solicitante: SAMSUNG ELECTRONICS CO LTD [KR]

According to one aspect of an embodiment of the present disclosure, a method for controlling a home appliance is provided. The method for controlling a home appliance includes the steps of: monitoring a sleep state of a first user; upon detecting a wake-up event in which the first user wakes up in the middle of sleep

[Ver más..](#)



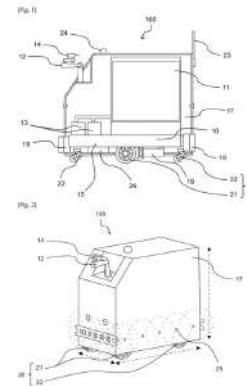
Robot autonome pour la protection incendie

Publicada en Espacenet, 3/01/2025

Solicitante: ELWEDYS [FR]

Robot (100) pour la protection incendie comprend : - un moteur (16) et au moins une roue (20) pour le déplacement du robot (100) sur le sol, - un moyen (14) de confirmation d'une zone de début d'incendie, - un réservoir principal (11) pour recevoir de l'eau et un canon à eau (12) raccordé au réservoir au moyen d'une pompe de distribution (13), et - un dispositif (15) de contrôle autonome connecté au moteur (16), au moyen de confirmation (14)

[Ver más..](#)



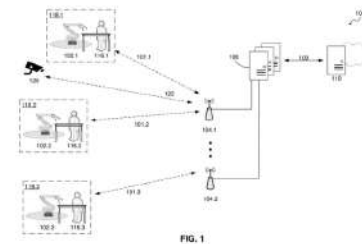
Collaborative Human-Robot Error Correction And Facilitation

Publicada en Espacenet, 2/01/2025

Solicitante: INTEL CORP [US]

Techniques are disclosed for task error correction for robots, such as collaborative robots (cobots). A controller of a robot may include an error detector to detect an error in a performance of a human-robot collaborative task, and an error corrector to correct the detected error. The error corrector may include a correction planner and a facilitator.

[Ver más..](#)



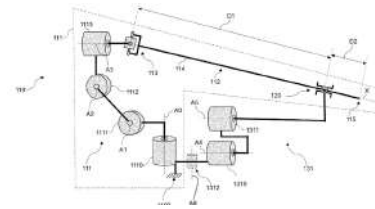
Robotic Assembly For A Surgical System

Publicada en Espacenet, 1/01/2025

Solicitante: ZENTACT ROBOTICS [FR]

The present invention concerns a robotic assembly (110) comprising: a robotic arm (111) with at least two motorized degrees of freedom, one medical instrument (112) coupled with the robotic arm (111), wherein the medical instrument (112) is coupled with a flange of the robotic arm (111), this flange comprising a joint (113) configured for the transmission of at least one angular rotation and wherein the medical instrument (112) extends between the joint (113)

[Ver más..](#)



PUBLICACIONES CIENTÍFICAS

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..](#)



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.

[Ver más..](#)

Leveraging Multimodal-LLMs Assisted by Instance Segmentation for Intelligent Traffic Monitoring

Publicada en arxiv.org, 16/02/2025

A robust and efficient traffic monitoring system is essential for smart cities and Intelligent Transportation Systems (ITS), using sensors and cameras to track vehicle movements, optimize traffic flow, reduce congestion, enhance road safety, and enable real-time adaptive traffic control.

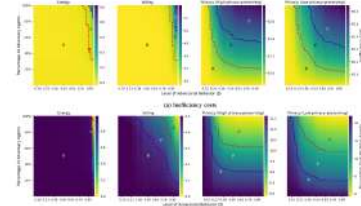
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Optimization under Attack: Resilience, Vulnerability, and the Path to Collapse

Publicada en arxiv.org, 9/02/2025

Optimization is instrumental for improving operations of large-scale socio-technical infrastructures of Smart Cities, for instance, energy and traffic systems. In particular, understanding the performance of multi-agent discrete-choice combinatorial optimization under distributed adversary attacks is a compelling and underexplored problem



[Ver más..](#)

Data-driven Modality Fusion: An AI-enabled Framework for Large-Scale Sensor Network Management

Publicada en arxiv.org, 7/02/2025

The development and operation of smart cities rely heavily on large-scale Internet-of-Things (IoT) networks and sensor infrastructures that continuously monitor various aspects of urban environments. These networks generate vast amounts of data, posing challenges related to bandwidth usage, energy consumption, and system scalability.

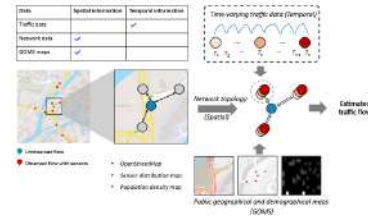
[Ver más..](#)

Network-Wide Traffic Flow Estimation Across Multiple Cities with Global Open Multi-Source Data: A Large-Scale Case Study in Europe and North America

Publicada en arxiv.org, 6/02/2025

Network-wide traffic flow, which captures dynamic traffic volume on each link of a general network, is fundamental to smart mobility applications. However, the observed traffic flow from sensors is usually limited across the entire network due to the associated high installation and maintenance costs.

[Ver más..](#)



AIoT-based smart traffic management system

Publicada en arxiv.org, 4/02/2025

This paper presents a novel AI-based smart traffic management system de-signed to optimize traffic flow and reduce congestion in urban environments. By analysing live footage from existing CCTV cameras, this approach eliminates the need for additional hardware, thereby minimizing both deployment costs and ongoing maintenance expenses.

[Ver más..](#)

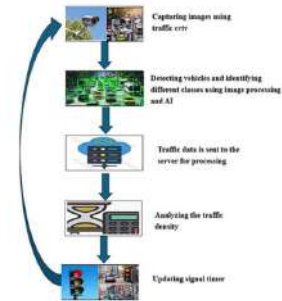


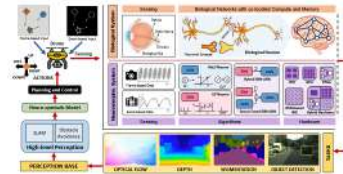
Figure 1. Flow diagram of the system.

Intelligent Sensing-to-Action for Robust Autonomy at the Edge: Opportunities and Challenges

Publicada en arxiv.org, 4/02/2025

Autonomous edge computing in robotics, smart cities, and autonomous vehicles relies on the seamless integration of sensing, processing, and actuation for real-time decision-making in dynamic environments. At its core is the sensing-to-action loop, which iteratively aligns sensor inputs with computational models to drive adaptive control strategies.

[Ver más..](#)

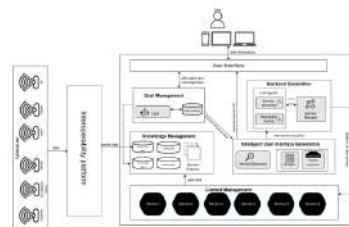


Leveraging LLMs for Dynamic IoT Systems Generation through Mixed-Initiative Interaction

Publicada en arxiv.org, 2/02/2025

IoT systems face significant challenges in adapting to user needs, which are often under-specified and evolve with changing environmental contexts. To address these complexities, users should be able to explore possibilities, while IoT systems must learn and support users in the process of providing proper services

[Ver más..](#)



Light commodity devices for building vehicular ad hoc networks: An experimental study

Publicada en arxiv.org, 21/01/2025

Vehicular communication networks represent both an opportunity and a challenge for providing smart mobility services by using a hybrid solution that relies on cellular connectivity and short range communications. The evaluation of this kind of network is overwhelmingly carried out in the present literature with simulations.

[Ver más..](#)

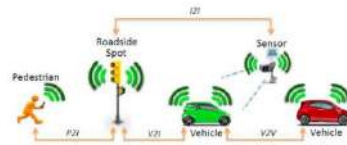


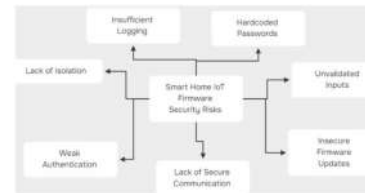
Fig. 1. Communication scheme between nodes in a VANET.

Framework to analyze and exploit the smart home IoT firmware

Publicada en sciencedirect.com, 21/10/2024

Thousands of smart gadgets are linked to the internet each month, and due to various privacy and security issues, such devices may be vulnerable to evil attackers. Currently, there are around 8 billion devices online, and by the beginning of 2025, there will likely be 25 to 35 billion IoT devices globally. Despite this, the security of the devices is not receiving any more attention.

[Ver más..](#)



Impact of the Smarter Safer Homes Solution on Quality of Life and Health Outcomes in Older People Living in Their Own Homes: Randomized Controlled Trial

Publicada en pubmed.ncbi.nlm.nih.gov, 1/01/2025

An increasingly aging population, accompanied by a shortage of residential aged care homes and workforce and consumer feedback, has driven a growing interest in enabling older people to age in place through home-based care. In this context, smart home technologies for remote health monitoring have gained popularity for supporting older people to live in their own homes.

[Ver más..](#)

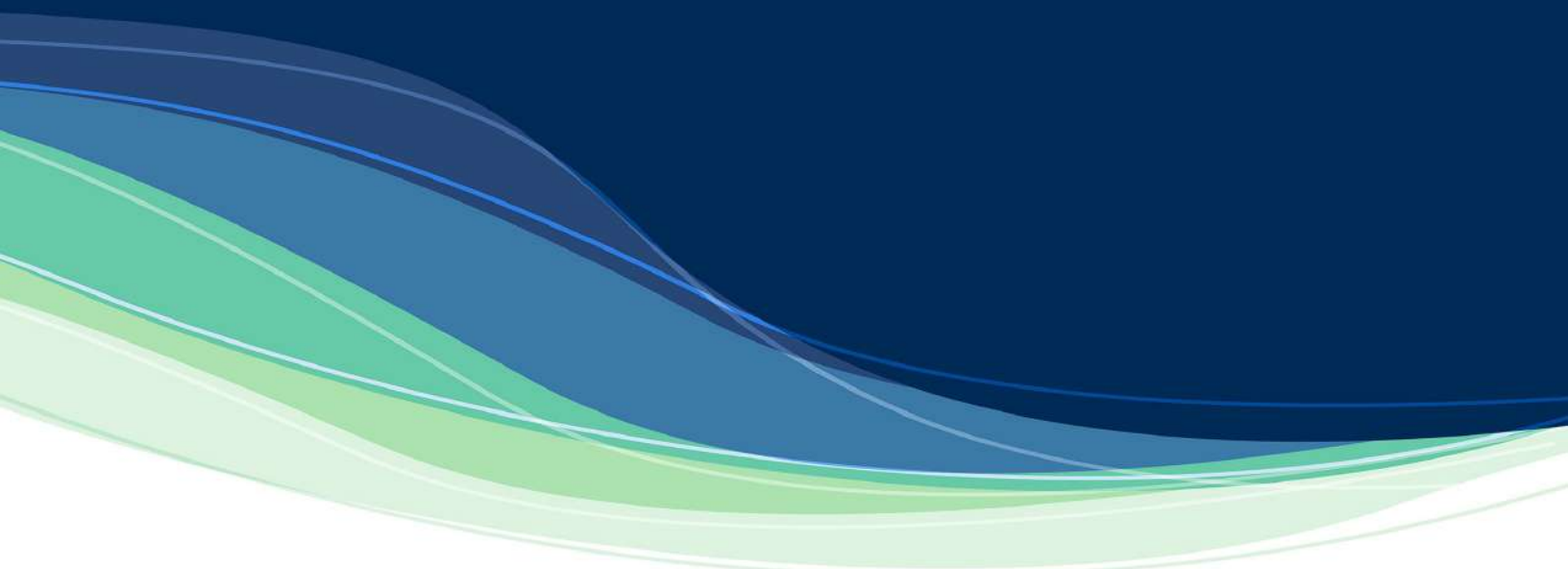
Technological applications of social robots to create healthy and comfortable smart home environment

Publicada en sciencedirect.com, 1/01/2025

The increasing demand for healthy and comfortable living environments has driven significant advancements in smart home technology. However, current developments often overlook the importance of users' social-emotional needs and the contextual dynamics within the home environment.

[Ver más..](#)





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