



SmartLivingPlat

Plataforma Tecnológica de la Domótica
y las Ciudades Inteligentes



Boletín de Vigilancia Tecnológica

MARZO - ABRIL 2024

SMART BUILDINGS
SMART CITIES
INDUSTRIA 4.0

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NOTICIAS

Tsinghua Uni just released Vidu, a text-to-video model as good as Sora

Publicada en axios.com, 27/04/2024

China's Shengshu Technology and Tsinghua University have unveiled Vidu, a text-to-video model capable of generating 16-second clips at 1080p resolution with a single click.

[Ver más..](#)

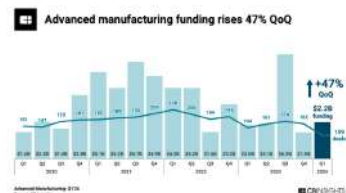


Humanoids and industrial cybersecurity are driving a surge in advanced manufacturing funding

Publicada en cbinsights.com, 25/04/2024

Advanced manufacturing funding soared in Q1'24, rebounding 47% QoQ to reach \$2.2B. Driving the upswing: Humanoid robot funding has reached a record annual level just 4 months into the year, while investment in the operational technology (OT) security tools that can help protect them has already outpaced the previous 2 years combined.

[Ver más..](#)

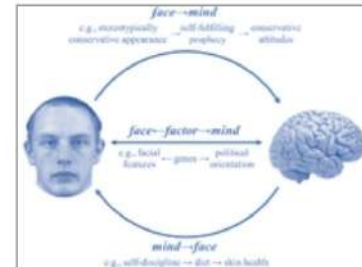


AI Can Tell Your Political Affiliation Just by Looking at Your Face

Publicada en gizmodo.com, 24/04/2024

A study recently published in the peer-reviewed American Psychologist journal claims that a combination of facial recognition and artificial intelligence technology can accurately assess a person's political orientation by simply looking at that person's blank, expressionless face.

[Ver más..](#)



La IA irrumpe en un Advanced Factories de récord

Publicada en thenewbarcelonapost.com, 10/04/2024

El salón expone múltiples soluciones enfocadas a la robotización y automatización de la industria para propulsar su productividad, y las ilustra mediante la experiencia de empresas que han implementado estas tecnologías para optimizar su producción

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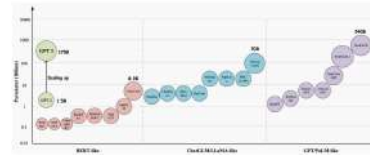


The Open Medical-LLM Leaderboard: Benchmarking Large Language Models in Healthcare

Publicada en huggingface.co, 19/04/2024

Over the years, Large Language Models (LLMs) have emerged as a groundbreaking technology with immense potential to revolutionize various aspects of healthcare. These models, such as GPT-3, GPT-4 and Med-PaLM 2 have demonstrated remarkable capabilities in understanding and generating human-like text, making them valuable tools for tackling complex medical tasks and improving patient care.

[Ver más..](#)



Chemists invent a efficient way to extract lithium from mining sites

Publicada en phys.org, 16/04/2024

Chemists at the Department of Energy's Oak Ridge National Laboratory have invented a more efficient way to extract lithium from waste liquids leached from mining sites, oil fields, and used batteries. They demonstrated that a common mineral can adsorb at least five times more lithium than can be collected using previously developed adsorbent materials.

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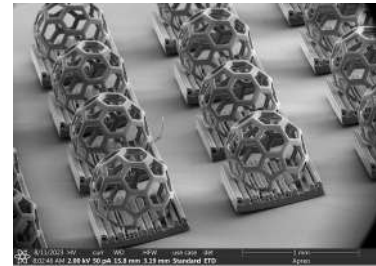


High-speed microscale 3D printing

Publicada en news.stanford.edu, 13/03/2024

A new process for microscale 3D printing creates particles of nearly any shape for applications in medicine, manufacturing, research and more – at the pace of up to 1 million particles a day. 3D-printed microscopic particles, so small that to the naked eye they look like dust, have applications in drug and vaccine delivery, microelectronics, microfluidics, and abrasives for intricate manufacturing.

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EMPRESAS Y MERCADOS

NHTSA opens investigation into Ford's BlueCruise after software linked to fatal crash

Publicada en theverge.com, 29/04/2024

Ford's BlueCruise hands-free driver-assist system was active in two crashes that resulted in multiple deaths. Now, the system is under investigation. The National Highway Traffic Safety Administration (NHTSA) has opened an official investigation into Ford's BlueCruise advanced driver-assistance software after it's been linked to multiple fatalities while in use.

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Humanoid robots are learning to fall well

Publicada en techcrunch.com, 28/04/2024

Boston Dynamics and Agility are teaching their bipedal robots to brace for the inevitable. The savvy marketers at Boston Dynamics produced two major robotics news cycles last week. The larger of the two was, naturally, the electric Atlas announcement.

[Ver más..](#)



Apple reportedly cuts Vision Pro production due to low demand

Publicada en theverge.com, 23/04/2024

Apple is reportedly cutting its Vision Pro headset shipment forecast for the rest of the year due to cooling demand. Apple analyst Ming-Chi Kuo writes that Apple cut orders for the Vision Pro even before it launched outside of the US.

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NHTSA Tesla Report (2024)

Publicada en static.nhtsa.gov, 25/04/2024

EA22002 (upgraded from PE21020) was opened to conduct extensive crash analysis, human factors analysis, and vehicle evaluations, and to assess vehicle control authority and driver engagement technologies. After discussions with NHTSA, Tesla filed a Defect Information Report (Recall 23V838) on December 12, 2023, applicable to all Tesla models produced and equipped with any version of its Autopilot system.

[Ver más..](#)

Nvidia acquires AI workload management startup Run:ai

Publicada en techcrunch.com, 24/04/2024

Nvidia is acquiring Run:ai, a Tel Aviv-based company that makes it easier for developers and operations teams to manage and optimize their AI hardware infrastructure.

[Ver más..](#)



Moderna and OpenAI Collaborate To Advance mRNA Medicine

Publicada en investors.modernatx.com, 24/04/2024

Moderna, Inc. and OpenAI today announced their ongoing collaboration to co-innovate with a shared vision of AI's transformative potential in the future of business and healthcare. Moderna is a digital-first company that has leveraged the power of machine learning since its beginnings.



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DOCOMO, NTT, NEC and Fujitsu Develop Top-level Sub-terahertz 6G Device Capable of Ultra-high-speed 100 Gbps Transmission

Publicada en docomo.ne.jp, 11/04/2024

NTT DOCOMO, INC., NTT Corporation, NEC Corporation and Fujitsu Limited jointly announced today the development of a top-level1 wireless device capable of ultra-high-speed 100 Gbps transmissions in the 100 GHz and 300 GHz sub-terahertz bands.



[Ver más..](#)

Apple might make a robot for your home

Publicada en qz.com, 4/04/2024

Fresh off dumping its electric vehicles project, Apple appears to be pivoting to something fairly different: household robots. Engineers at the iPhone company have been working on some sort of “personal robotics” device that can cohabitate with you and follow you around, Bloomberg reported Thursday. So, basically a robo-roommate.



[Ver más..](#)

With Pure Storage, the City of Bloomington Reduces Data Center Footprint by 85%, While Driving Financial Flexibility and IT Performance

Publicada en purestorage.com, 2/04/2024

Pure Storage® (NYSE: PSTG), the IT pioneer that delivers the world’s most advanced data storage technologies and services, announced that the City of Bloomington, located in the heart of Central Illinois, is leveraging Pure Storage’s platform to drive financial flexibility, on-demand scale, and sustainability, while improving citizen services in the digital age.

[Ver más..](#)

Bako Motors lanza triciclos urbanos solares para conquistar las calles de Tunes

Publicada en ecoinventos.com, 29/03/2024

La micro-movilidad, que abarca los patinetes eléctricos, bicicletas eléctricas y triciclos eléctricos, emerge como una solución poderosa frente a la congestión urbana, las emisiones contaminantes y la polución acústica.

[Ver más..](#)



Amazon and Anthropic deepen their shared commitment to advancing generative AI

Publicada en aboutamazon.com, 27/03/2024

Amazon concludes \$4 billion investment in Anthropic. Customers of all sizes and industries are using Claude on Amazon Bedrock to reimagine user experiences, reinvent their businesses, and accelerate their generative AI journeys.

[Ver más..](#)



PATENTES

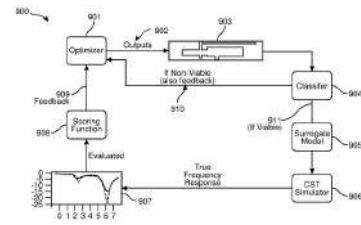
Antenna Design Using Artificial Intelligence

Publicada en Espacenet, 24/04/2024

Solicitante: META PLATFORMS TECH LLC [US]

The disclosed computer-implemented method may include accessing various antenna elements (210) and identifying parameters for an antenna that is to be formed using the accessed antenna elements (220). The method may also include assembling the antenna elements (230), using an artificial intelligence (AI) instance,

[Ver más..](#)



Method And Smoke Detector For Providing A Predictive Maintenance Alert

Publicada en Espacenet, 24/04/2024

Solicitante: BOSCH GMBH ROBERT [DE]

The present disclosure relates to a method and smoke detector comprising a microphone and an electronic data processor arranged to: capture a microphone signal for sampling an ambient sound sample over a period of time; process the captured ambient sound sample with a pre-trained machine-learning model to determine whether the captured ambient sound



Fig. 3

[Ver más..](#)

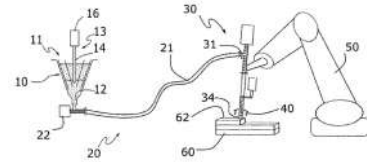
System For Extruding Building Material, Provided With A Device For Measuring The Width Of Extruded Beads

Publicada en Espacenet, 18/04/2024

Solicitante: XTREEE [FR]

Disclosed is a system for extruding beads of building material for a robot (50) for the additive manufacturing of architectural structures (60), comprising: a printhead (30) for printing beads of building material, comprising an inlet mouth (31) and an extrusion nozzle (34) configured to form a bead (62) of building material, said printhead (30) being intended to be moved by the robot (50) along a pre-determined path, from upstream to downstream

[Ver más..](#)



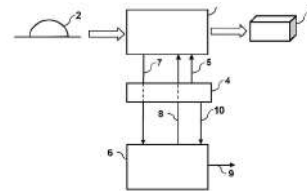
Supervision Method And System For Predicting Defects During Additive Manufacturing Processes

Publicada en Espacenet, 17/04/2024

Solicitante: ATOS FRANCE [FR]

Method for supervising an additive manufacturing process performed by an additive manufacturing device (1), comprising- providing a set of data to a supervision system (6), said set of data comprising product geometry data, production data, production history data, and measurements (7) from said additive manufacturing device (1), and, at said supervision system (6):- predicting the occurrence of a defect (S1) from said set of data,- when an occurrence of a defect is predicted

[Ver más..](#)



Apparatus And Method For Unique Identification Of An Object Using Near-Field Communication (NFC)

Publicada en Espacenet, 11/04/2024

Solicitante: LOFT LABS LLC [US]

An apparatus for unique identification of an object using near-field communication (NFC), the apparatus includes at least a processor and a memory, wherein the memory contains instructions configuring the at least a processor to receive object manufacture data associated with a first object containing an NFC tag

[Ver más..](#)

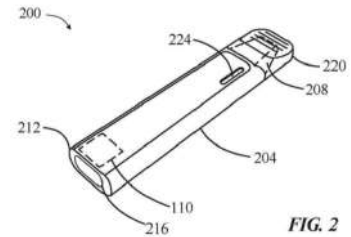


FIG. 2

Disaster detection and recovery

Publicada en Espacenet, 11/04/2024

Solicitante: VIVINT INC [US]

Apparatuses, methods, systems, and program products are disclosed for disaster detection and recovery. An apparatus includes at least one sensor unit of a home automation system, a processor, and a memory that stores code executable by the processor. The code is executable by the processor to cause the apparatus to detect a disaster event using data captured by the at least one sensor unit

[Ver más..](#)

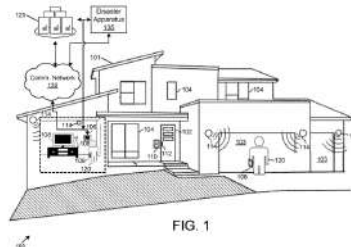


FIG. 1

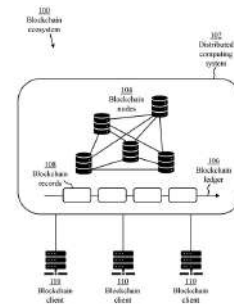
Smart Contract Behavior Classification

Publicada en Espacenet, 11/04/2024

Solicitante: ERICSSON TELEFON AB L M [SE]

A computer-implemented method is described. The method comprises receiving data representative of an event that occurs as a result of execution of a smart contract deployed on a blockchain. The method further comprises classifying a type of behavior

[Ver más..](#)



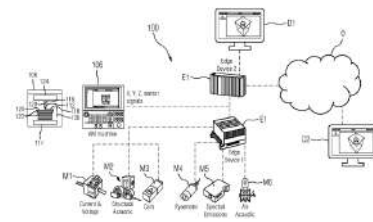
Additive manufacturing techniques

Publicada en Espacenet, 10/04/2024

Solicitante: SIEMENS AG [DE]

A, preferably computer-implemented, method of assisting, operating, monitoring, and/or controlling an additive manufacturing process, the method comprising the steps of: obtaining operational data (OD) captured during the additive manufacturing process, assigning the operational data (OD) to nodes

[Ver más..](#)



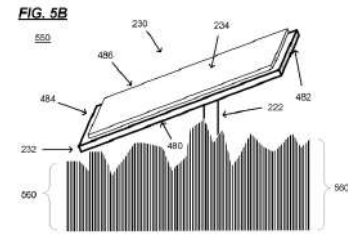
Autonomous vehicle panel and post detection

Publicada en Espacenet, 09/04/2024

Solicitante: RENU ROBOTICS CORP [US]

Disclosed are solutions for an autonomous vehicle to real-time detect and determine dynamic and/or obscured obstacles to support navigation and services to within a desired proximity of said obstacles. Certain such implementations are specifically directed to autonomous mowers, for example, capable of real-time object detection to determine location and orientation of solar panels in a solar farm

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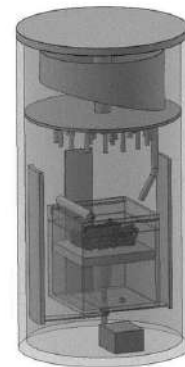
Method For The Volumetric Printing Through Holograms Using High Wavelength Radiation

Publicada en Espacenet, 04/04/2024

Solicitante: INNOMAQ 21 S L [ES]

The present invention relates to volumetric additive manufacturing (3D printing) through holograms for manufacturing high performance components with high mechanical properties at low cost and with low environmental impact from a wide variety of different materials, including but not limited to metallic materials, ceramic materials, polymeric materials and/or combinations thereof.

[Ver más..](#)



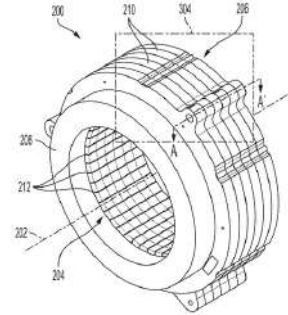
Methods And Systems For Non-Destructive Evaluation Of Stator Insulation Condition

Publicada en Espacenet, 04/04/2024

Solicitante: FORD GLOBAL TECH LLC [US]

Methods and systems are provided for an insulation system of a stator. In one example, a method may include receiving images of the stator at an automated tool implemented at a processor of a computing system, the images depicting slots in an inner surface of the stator, and processing the images using image processing and deep learning algorithms to provide processed images.

[Ver más..](#)



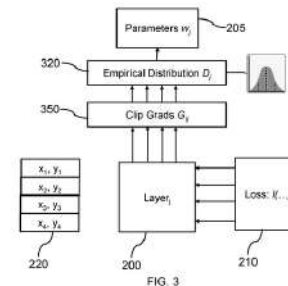
Training a Machine Learning Algorithm

Publicada en Espacenet, 04/04/2024

Solicitante: KONINKLIJKE PHILIPS NV [NL]

Proposed concepts provide schemes, solutions, concepts, designs, methods and systems pertaining to improving the utilization of privacy-sensitive datasets (i.e. increasing security and/or concealment) for training a machine-learning algorithm. In particular, embodiments may address the technical problem of protecting privacy-sensitive datasets

[Ver más..](#)



Method And Device For Determining An Additive Production Process Of A Component And Additive Production Process Of The Component

Publicada en Espacenet, 03/04/2024

Solicitante: SIEMENS AG [DE]

The invention relates to a method and a device for determining an additive manufacturing process for the additive manufacturing of a component, in which at least one manufacturing station is passed through in the additive manufacturing process, in which at least one precursor of the component is processed with the help of at least one processing machine. In order to determine the additive manufacturing process, a machine teach-in tool is used to teach the processing machine for the processing of the precursor product.

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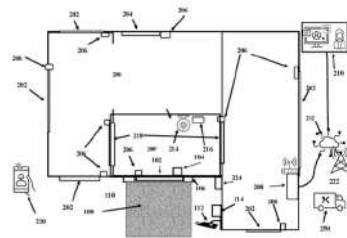
Machine Learning for thermal detectors

Publicada en Espacenet, 03/04/2024

Solicitante: VERISURE SARL [CH]

Provided is a method in a security monitoring system to secure at least part of a perimeter of a premises. The method classifies input data by a machine-learning model comprising a convolutional neural network (CNN) to produce a classification result, and generates output data based at least in part on the classification result. The input data is based at least in part on a time-dependent infrared signal measured by a presence and/or movement detector

[Ver más..](#)



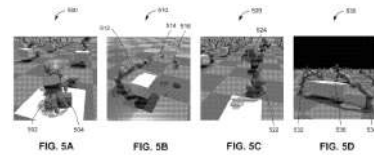
Ai-Based Control For Robotics Systems And Applications

Publicada en Espacenet, 28/03/2024

Solicitante: NVIDIA CORP [US]

Systems techniques to control a robot are described herein. In at least one embodiment, a machine learning model for controlling a robot is trained based at least on one or more population-based training operations or one or more reinforcement learning operations. Once trained, the machine learning model can be deployed and used to control a robot to perform a task.

[Ver más..](#)



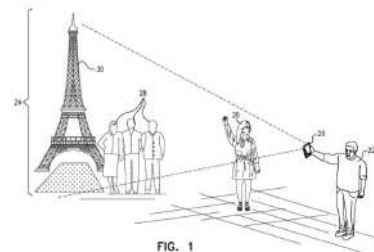
Extended depth of field using deep learning

Publicada en Espacenet, 28/03/2024

Solicitante: APPLE INC [US]

A method for image enhancement includes capturing multiple input images of a scene, including at least a first input image having a first field of view (FOV) captured with a first focal depth and a second input image having a second FOV captured with a second focal depth.

[Ver más..](#)



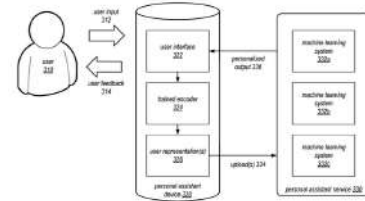
Low-dimensional neural-network-based entity representation

Publicada en Espacenet, 26/03/2024

Solicitante: AMAZON TECH INC [US]

Systems and methods are disclosed to implement a neural network training system to train a multitask neural network (MNN) to generate a low-dimensional entity representation based on a sequence of events associated with the entity. In embodiments, an encoder is combined with a group of decoders to form a MNN to perform different machine learning tasks on entities.

[Ver más..](#)



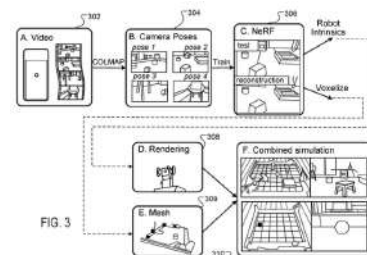
Training policy neural networks in simulation using scene synthesis machine learning models

Publicada en Patentscope, 21/03/2024

Solicitante: DEEPMIND TECH LTD [GB]

Methods, systems, and apparatus, including computer programs encoded on a computer storage medium, for training a policy neural network for use in controlling a robot. In particular, the policy neural network can be trained in simulation using images generated by a scene synthesis machine learning model.

[Ver más..](#)



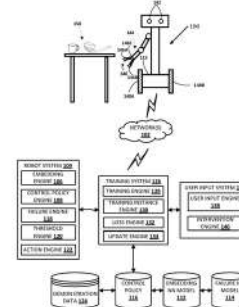
System(S) And Method(S) Of Using Behavioral Cloning Value Approximation In Training And Refining Robotic Control Policies

Publicada en Espacenet, 21/03/2024

Solicitante: GOOGLE LLC [US]

Implementations described herein relate to training and refining failure neural network (NN) models and robotic control policies using imitation learning techniques. A failure NN model and a robotic control policy can initially be trained based on human demonstrations of various robotic tasks. In many implementations, an instance of vision data capturing the environment of the robot can be processed using an embedding model to generate an embedding.

[Ver más..](#)



Controlling Robots Using Language Model Generated Programs

Publicada en Espacenet, 21/03/2024

Solicitante: GOOGLE LLC [US]

Methods, systems, and apparatus, including computer programs encoded on a computer storage medium, for controlling a robot using language model programs. A language model program is computer program generated from an output of a code generation neural network, e.g., one that has been trained on a language modeling objective on computer code data.

[Ver más..](#)

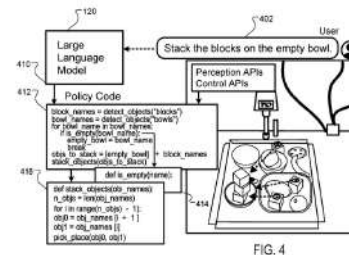


FIG. 4

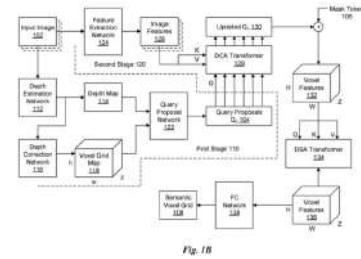
Sparse Voxel Transformer For Camera-Based 3d Semantic Scene Completion

Publicada en Espacenet, 14/03/2024

Solicitante: NVIDIA CORP [US]

An artificial intelligence framework is described that incorporates a number of neural networks and a number of transformers for converting a two-dimensional image into three-dimensional semantic information.

[Ver más..](#)



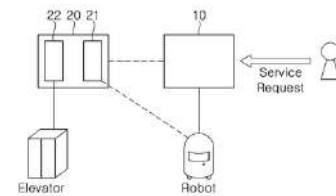
Robot Interlocking Elevator Control System

Publicada en Espacenet, 13/03/2024

Solicitante: HYUNDAI ELEVATOR CO LTD [KR]

Disclosed is a robot interlocking elevator control system for efficient control of elevators operated in association with robots autonomously moving in a building. The present invention provides a method of setting the most efficient elevator line to be exclusive for robots in consideration of traffic volume in the building

[Ver más..](#)



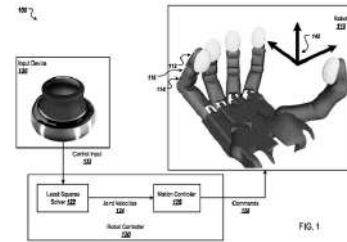
Action Abstraction Controller For Fully Actuated Robotic Manipulators

Publicada en Espacenet, 13/03/2024

Solicitante: DEEPMIND TECH LTD [GB]

Methods, systems, and apparatus, including computer programs encoded on computer storage media, for controlling a robot manipulator that has a plurality of joints. One of the methods includes obtaining a control input that comprises one or more velocity values that specify a target velocity of a reference point in a given coordinate frame

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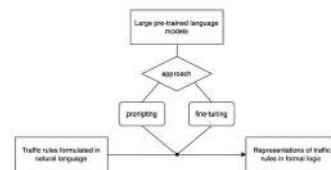
System And Method For Translating Natural Language Traffic Rules Into Formal Logic For Autonomous Moving Vehicles

Publicada en Espacenet, 07/03/2024

Solicitante: CONTINENTAL AUTOMOTIVE TECH GMBH [DE]

Method and system for translating natural language traffic rules into formal logic for autonomous moving vehicles The invention relates to a system and method for translating natural language traffic rules into formal logic including a training method for a machine learning system and can be used in the context of advanced driver assistance systems or autonomous driving systems (ADAS or AD) for vehicles or other autonomous moving vehicles

[Ver más..](#)



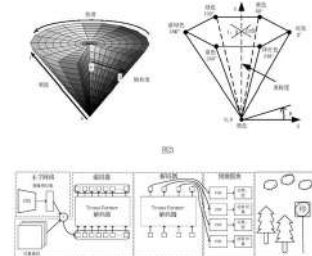
Traffic sign recognition method and device, control equipment, storage medium and product

Publicada en Espacenet, 01/03/2024

Solicitante: CHERY AUTOMOBILE CO LTD

The invention provides a traffic sign recognition method and device, control equipment, a storage medium and a product, and belongs to the technical field of artificial intelligence. According to the method, image enhancement is carried out on the obtained road image, so that the contrast, saturation, brightness and the like of the area where the traffic sign is located in the first road image

[Ver más..](#)



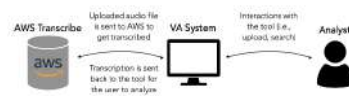
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ConFides: A Visual Analytics Solution for Automated Speech Recognition Analysis and Exploration

Publicada en arxiv.org, 30/04/2024

Confidence scores of automatic speech recognition (ASR) outputs are often inadequately communicated, preventing its seamless integration into analytical workflows. In this paper, we introduce ConFides, a visual analytic system developed in collaboration with intelligence analysts to address this issue.

[Ver más..](#)



Towards Scenario- and Capability-Driven Dataset Development and Evaluation: An Approach in the Context of Mapless Automated Driving

Publicada en arxiv.org, 30/04/2024

The foundational role of datasets in defining the capabilities of deep learning models has led to their rapid proliferation. At the same time, published research focusing on the process of dataset development for environment perception in automated driving has been scarce, thereby reducing the applicability of openly available datasets and impeding the development of effective environment perception systems.

[Ver más..](#)

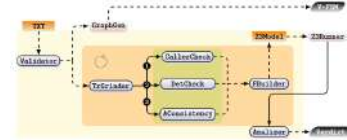


TRAC: a tool for data-aware coordination (with an application to smart contracts)

Publicada en arxiv.org, 30/04/2024

We propose TRAC, a tool for the specification and verification of coordinated multiparty distributed systems. Relying on finite-state machines (FSMs) where transition labels look like Hoare triples, the tool can specify the coordination of the participants of a distributed protocol for instance an execution model akin blockchain smart contracts (SCs).

[Ver más..](#)

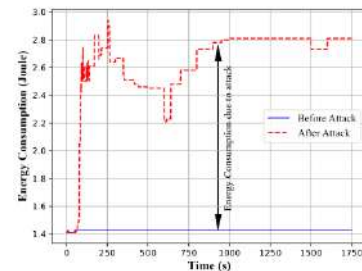


Detection of Energy Consumption Cyber Attacks on Smart Devices

Publicada en arxiv.org, 30/04/2024

With the rapid development of Internet of Things (IoT) technology, intelligent systems are increasingly integrating into everyday life and people's homes. However, the proliferation of these technologies raises concerns about the security of smart home devices. These devices often face resource constraints and may connect to unreliable networks, posing risks to the data they handle. Securing IoT technology is crucial due to the sensitive data involved.

[Ver más..](#)

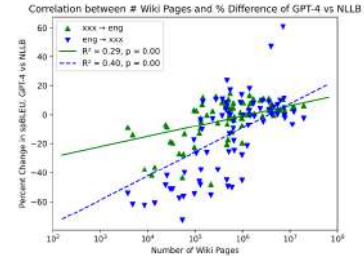


From LLM to NMT: Advancing Low-Resource Machine Translation with Claude

Publicada en arxiv.org, 22/04/2024

We show that Claude 3 Opus, a large language model (LLM) released by Anthropic in March 2024, exhibits stronger machine translation competence than other LLMs. Though we find evidence of data contamination with Claude on FLORES-200, we curate new benchmarks that corroborate the effectiveness of Claude for low-resource machine translation into English.

[Ver más..](#)

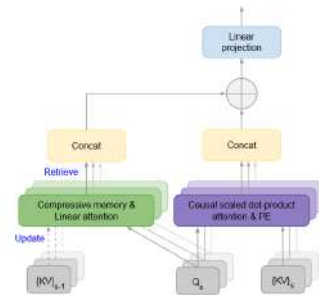


Leave No Context Behind: Efficient Infinite Context Transformers with Infini-attention

Publicada en arxiv.org, 10/04/2024

This work introduces an efficient method to scale Transformer-based Large Language Models (LLMs) to infinitely long inputs with bounded memory and computation. A key component in our proposed approach is a new attention technique dubbed Infini-attention.

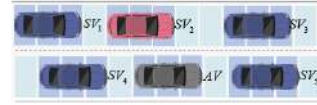
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Life-long Learning and Testing for Automated Vehicles via Adaptive Scenario Sampling as A Continuous Optimization Process

Publicada en arxiv.org, 28/03/2024

Sampling critical testing scenarios is an essential step in intelligence testing for Automated Vehicles (AVs). However, due to the lack of prior knowledge on the distribution of critical scenarios in sampling space, we can hardly efficiently find the critical scenarios or accurately evaluate the intelligence of AVs.

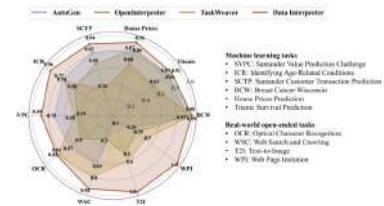


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Data Interpreter: An LLM Agent For Data Science

Publicada en arxiv.org, 12/03/2024

Large Language Model (LLM)-based agents have demonstrated remarkable effectiveness. However, their performance can be compromised in data science scenarios that require real-time data adjustment, expertise in optimization due to complex dependencies among various tasks, and the ability to identify logical errors for precise reasoning. In this study, we introduce the Data Interpreter



[Ver más..](#)

6G comprehensive intelligence: network operations and optimization based on Large Language Models

Publicada en arxiv.org, 29/04/2024

The sixth generation mobile communication standard (6G) can promote the development of Industrial Internet and Internet of Things (IoT). To achieve comprehensive intelligent development of the network and provide customers with higher quality personalized services.

[Ver más..](#)

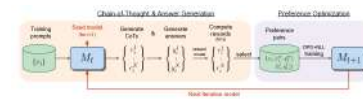


Meta: Iterative Reasoning Preference Optimization

Publicada en arxiv.org, 22/02/2024

Iterative preference optimization methods have recently been shown to perform well for general instruction tuning tasks, but typically make little improvement on reasoning tasks (Yuan et al., 2024, Chen et al., 2024). In this work we develop an iterative approach that optimizes the preference between competing generated Chain-of-Thought (CoT)

[Ver más..](#)

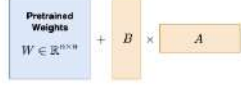


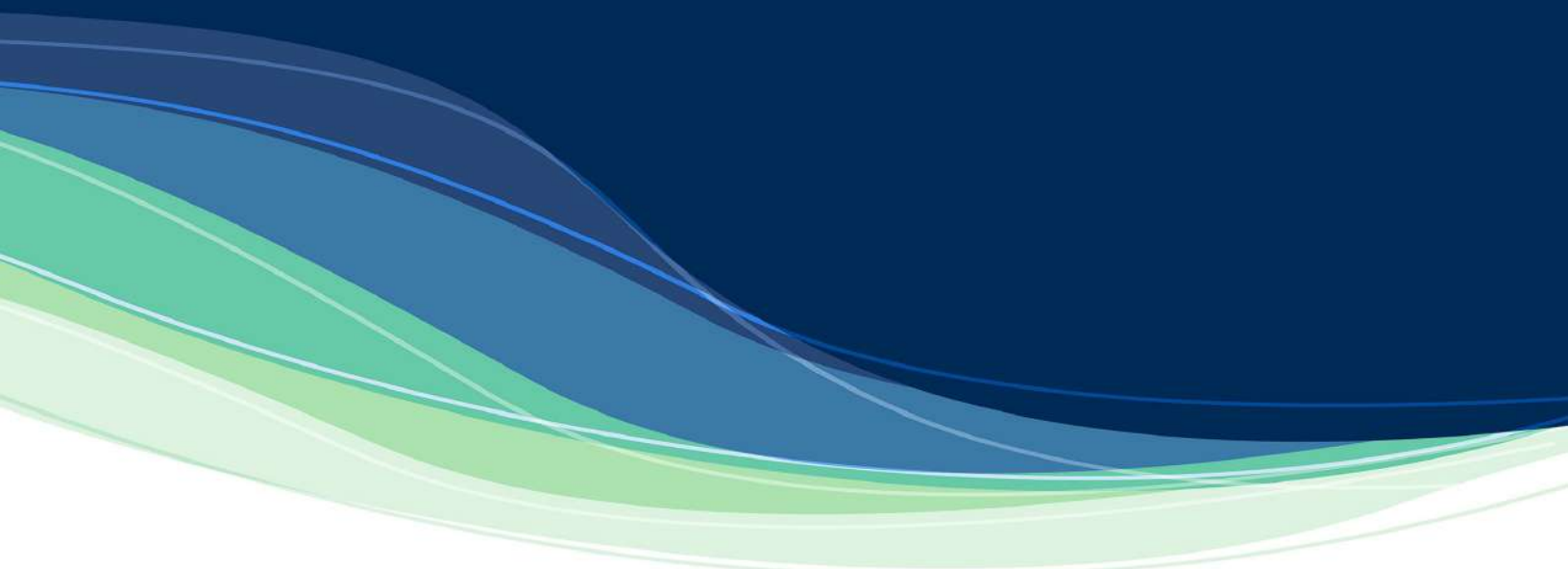
LoRA+: Efficient Low Rank Adaptation of Large Models

Publicada en arxiv.org, 19/02/2024

In this paper, we show that Low Rank Adaptation (LoRA) as originally introduced in Hu et al. (2021) leads to sub-optimal finetuning of models with large width (embedding dimension). This is due to the fact that adapter matrices A and B in LoRA are updated with the same learning rate.

[Ver más..](#)

	LoRA	LoRA+
Parameterization		
Training	$A \leftarrow A - \eta \times G_A$ $B \leftarrow B - \eta \times G_B$	$A \leftarrow A - \eta \times G_A$ $B \leftarrow B - \lambda \eta \times G_B$ $\lambda \gg 1$



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