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AI:10

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WHAT'S HOT

The key technologies that power the Metaverse

HEADLINE NEWS IN A FLASH

- ROBO TOTS Virtual reality babies will be popular in just 50 years, AI expert claims
- AI can track the health of coral reefs through their 'song', but what does it sound like?
- People could soon speak to animals thanks to state-of-the-art 'Dr Doolittle' devices
- DeepMind: Why is AI so good at language? It's something in language itself
- MIT Researchers Used AI to Make Traffic Go Smoothly and Reduce Fuel Consumption and Emissions
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INDUSTRY FOCUS

CAN ARTIFICIAL INTELLIGENCE HELP BOARDS GOVERN EFFECTIVELY?

THE KEY TECHNOLOGIES THAT POWER THE METAVERSE

What is the Metaverse?

The Metaverse is a post-reality universe that combines physical reality and digital virtual worlds in a continual and persistent multiuser environment.

The Metaverse is built on the convergence of augmented reality (AR) and virtual reality (VR) technologies, which enable multimodal interactions with digital items, virtual environments and people. As a result, the Metaverse is a web of networked immersive experiences and social in multiuser persistent platforms.

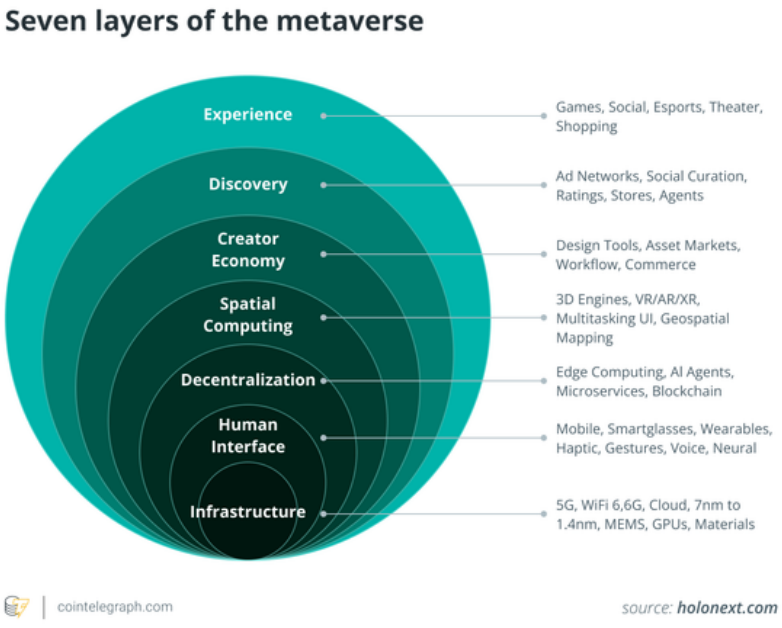
Furthermore, cryptocurrencies and nonfungible tokens (NFTs) are conceivable because of technologies like blockchain, which allow for the ownership of virtual items and real estate in metaverses like Decentraland.

Microsoft and Meta are among the companies developing technology for interfacing with virtual worlds, but they aren't the only ones. So many other significant corporations are constructing the infrastructure needed to create better virtual, more realistic worlds.

How does the Metaverse work?

Jon Radoff (an entrepreneur, novelist and game designer) proposed a seven-tiered conceptual framework to define the Metaverse market's value chain.

As per the framework, seven layers make up the Metaverse, including experience, discovery, creator economy, spatial computing, decentralization, human interface and infrastructure.



- Experience: The Metaverse will give us a plethora of three-dimensional (3D) visuals and even two-dimensional (2D) experiences that we are currently unable to enjoy.

- Discovery: Inbound and outbound discovery systems continue to exist in the Metaverse ecology. When people are actively hunting for information, this is known as inbound discovery. Meanwhile, outbound marketing refers to sending communications to people regardless of whether they requested it.

- Creator economy: Creators of earlier incarnations of the internet needed some programming knowledge to design and construct tools. However, developing web applications without coding is now possible owing to web application frameworks. As a result, the number of web creators is rapidly expanding.

- Spatial computing: Spatial computing refers to a technology that combines VR and AR. Microsoft's HoloLens is an excellent example of what this technology can accomplish. Even if you haven't been able to get your hands on Hololens yet, consider face filters on Instagram as an example of spatial computing.

- Decentralization: Developers can leverage online capabilities through a scalable ecosystem enabled by distributed computing and microservices. Moreover, smart contracts and the blockchain empower creators to their own data and products.

- Human interface: Users can receive information about their surroundings, use maps, and even build shared AR experiences by simply gazing around at the physical world using a combination of spatial computing and human interface.

- Infrastructure: Technological infrastructure is critical for the existence of other layers. It includes 5G and 6G computing to reduce network congestion and improve the network's bandwidth.

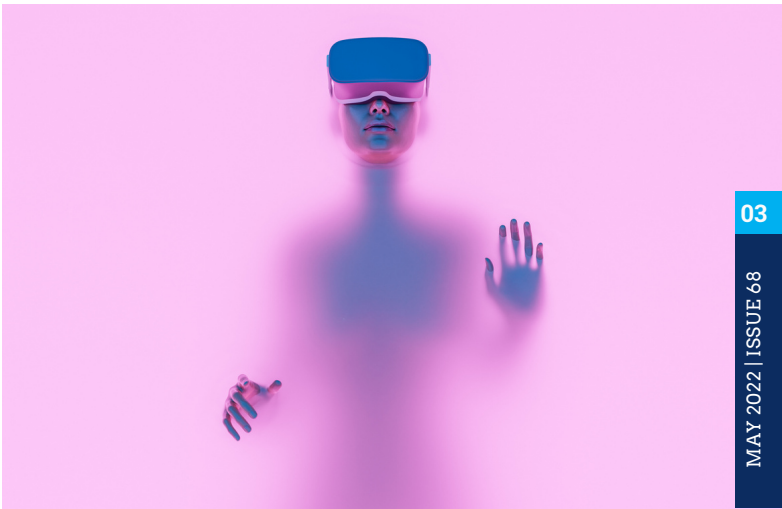
Which technology is used in the Metaverse?

The latest development of the Metaverse was made possible due to technologies like artificial intelligence (AI), the Internet of Things (IoT), AR, VR, 3d modeling, and spatial and edge computing.

Artificial intelligence: AI paired with Metaverse technology ensures the Metaverse infrastructure's stability while also delivering actionable information for the upper layers. NVIDIA technologies are a good example of how AI will be crucial in developing digital spaces where social interactions will occur in the Metaverse.

- Internet of things: While IoT will allow the Metaverse to study and interact with the real world, it will also serve as a 3D user interface for IoT devices, allowing for a more personalized IoT experience. Both the Metaverse and the Internet of Things will assist organizations in making data-driven judgments with minimal mental effort.

- Augmented and virtual reality: The idea of a Metaverse combines technologies like AI, AR and VR to let users enter the virtual world. For instance, virtual items can be embedded in the actual environment using augmented reality technology. Similarly, VR helps immerse you in a 3D virtual environment or 3D reconstruction using 3D computer modeling. While wearing a virtual reality headset or other gear isn't required in the Metaverse, experts believe VR will become an essential part of the virtual environment. However, it is essential to note that the Metaverse is different from AR and VR. If you are curious to know how you can enter the Metaverse, the answer is that augmented and virtual reality technologies are a way to get into the dynamic 3D digital world.



- 3D modeling: 3D modeling is a computer graphics approach for creating a three-dimensional digital representation of any surface or object. The Metaverse's 3D reality is crucial to ensuring the comfort of its consumers. A lot of image collecting and graphic design are required to create a 3D world. The 3D graphics in most games like The Sandbox (SAND) provide the impression that the player is actually in the game. The Metaverse needs to be built on the same foundation.

- Spatial and edge computing: The practice of leveraging physical space as a computer interface is known as spatial computing. With technologies like the HoloLens, Microsoft is a pioneer in the field of spatial computing in the metaverse space. In contrast, edge computing is a network-based cloud computing and service delivery paradigm. Edge provides end-users with computation, storage, data and application solutions like cloud computing services. To deliver the same level of experience as in reality, keeping the user interested and immersed in the Metaverse is critical. In light of this, the response time to a user's action should essentially be reduced to a level below what is detectable to humans. By hosting a series and combination of computing resources and communication infrastructures close to the users, edge computing provides quick response times.

What are the challenges of the Metaverse?

Users' cognition, emotions, and behaviors can be influenced by key technologies that enable multiple metaverses.

The expensive cost of equipment is a barrier to the widespread adoption of metaverse technologies that will hopefully be overcome in the future. Morality, physical well-being, health and safety, psychology, ethics, and data privacy are the four areas of risk associated with AR.

On a physical level, users' attention being diverted by location-based AR applications has resulted in dangerous mishaps. Overloading information is a psychological problem that must be avoided. Unauthorized augmentation and fact tampering with prejudiced perspectives are moral dilemmas. Data collection and sharing with third parties is the risk with the most severe privacy ramifications.

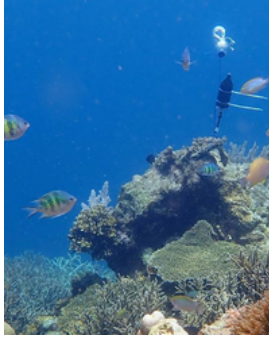
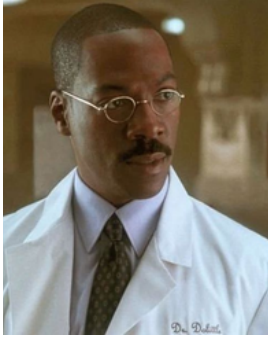
Furthermore, Metaverse actors may be enticed to collect users' biometric psychography based on user data emotions, which could be used to make unintentional behavioral assumptions and exacerbate algorithmic bias.

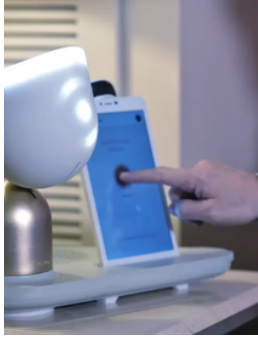
Nausea, motion sickness and dizziness are among the most regularly reported health issues associated with virtual reality. Due to the weight of VR headsets, head and neck strain is a limitation for longer use sessions. Social isolation and withdrawal from real-life activities accompanied by medical issues is also a challenge that hinders the mainstream adoption of the Metaverse.

In addition to the above, sexual harassment again women in the Metaverse is also a big problem, as evident from a gang rape case where the victim explained that men groped her avatar and sexually assaulted her. So, who is responsible for ensuring that women are safe in virtual worlds? Meta, for example, claims that it provides users with tools to help them to stay safe, effectively shifting the responsibility to them.

Therefore, users need to understand the risk-return trade-offs of participating in immersive environments, be aware of cyber threats and conduct their own research before entering into the Metaverse.//

Source: Cointelegraph

HEALDLINE NEWS IN A FLASH

ROBO TOTS VIRTUAL REALITY BABIES WILL BE POPULAR IN JUST 50 YEARS, AI EXPERT CLAIMS

By the early 2070s, one in five couples may opt for a digital tot over a real infant, Catriona Campbell reckons. The computer-generated kids will exist in the virtual metaverse — a sort of 3D internet - and come to life at the touch of a button. Parents will see and interact with them through next-generation AR (augmented reality) glasses and haptic gloves — which give a realistic sense of touch when handling virtual or holographic objects. The “kids” will speak, give simulated emotional responses, have a digital memory and will grow up in real time. They could be accessible through a subscription service for as little as £20 per month. Catriona calls them the “Tamagotchi” generation as they are a step on from the 1990s digital pet owners had to nurture from being hatched.

Source: the-sun.com

AI CAN TRACK THE HEALTH OF CORAL REEFS THROUGH THEIR ‘SONG’, BUT WHAT DOES IT SOUND LIKE?

Scientists in the UK have trained an artificial intelligence (AI) system to track the health of coral reefs - all through the power of “song”. Coral reef soundscapes are complex and diverse, with fish and other creatures contributing to a wide variety of noises that can serve as a way to monitor how healthy a particular reef is. However the process of analysing these soundscapes can often be laborious and time-consuming, and this is where AI can make a difference. As part of a new study, researchers from the University of Exeter exposed a computer algorithm to recordings of both healthy and degraded reefs, training the machine to differentiate between them. The system then analysed new recordings, and managed to correctly identify reef health 92 per cent of the time, the team said.

Source: euronews

PEOPLE COULD SOON SPEAK TO ANIMALS THANKS TO STATE-OF-THE-ART 'DR DOOLITTLE' DEVICES

Dr Yossi Yovel and his team from Tel Aviv University, Israel, used ultrasonic frequency detectors to “translate” the communicative noises of bats. He explained how bats emit mixed-frequency signals that echo off the surroundings and while they had been known to eavesdrop on others, with the help of AI humans could do so on them. Dr Yovel said: “Machine learning can revolutionise our understanding of animal communication. “ Dr Natalie Uomini, a cognitive scientist, is conducting similar research on the New Caledonian crow. She hopes the AI she is using will soon be able to discern which crow said what, and to whom.

Source: mirror.co.uk

DEEPMIND: WHY IS AI SO GOOD AT LANGUAGE? IT'S SOMETHING IN LANGUAGE ITSELF

How is it that a program such as OpenAI's GPT-3 neural network can answer multiple choice questions, or write a poem in a particular style, despite never being programmed for those specific tasks? It may be because the human language has statistical properties that lead a neural network to expect the unexpected, according to new research by DeepMind, the AI unit of Google. Natural language, when viewed from the point of view of statistics, has qualities that are "non-uniform," such as words that can stand for multiple things, known as "polysemy". And words that sound the same can stand for different things, known as homonyms, like "here" and "hear." Those qualities of language are the focus of a paper posted on arXiv this month, "Data Distributional Properties Drive Emergent Few-Shot Learning in Transformers," by DeepMind scientists.

Source: zdnet

MIT RESEARCHERS USED AI TO MAKE TRAFFIC GO SMOOTHLY AND REDUCE FUEL CONSUMPTION AND EMISSIONS

The Massachusetts Institute of Technology (MIT) researchers have found a way for drivers to avoid idling at red lights through Artificial Intelligence (AI). In a new study, MIT researchers demonstrate a machine-learning approach that can help control a fleet of autonomous vehicles as they approach a signalized intersection to help traffic go smoothly. The researchers performed simulations that not only will the approach help with traffic, but can also reduce fuel consumption and emissions will improve the average vehicle speed. The algorithm tells each vehicle how to accelerate and decelerate. In the simulations, there are more cars than they made through in a single green phase, which resulted in bigger fuel consumption and emissions reductions.

Source: techtimes

NEW YORK STATE OFFICIALS ARE GIVING COMPANION ROBOTS TO MORE THAN 800 SENIOR CITIZENS TO HELP COMBAT LONELINESS

The New York State Office for the Aging (NYSOFA) announced that it would work with its local partners to identify which adults would most benefit from the service, as the government department works to tackle social isolation. The robots are known by the name ElliQ and made by Israeli firm Intuition Robotics. They use AI technology to support senior citizens, offering wellness activity suggestions and initiating conversation to build a sense of relationship with the device, according to the NYSOFA.

Source: businessinsider

CAN ARTIFICIAL INTELLIGENCE HELP BOARDS GOVERN EFFECTIVELY?

Artificial Intelligence and boards and its impact on corporate governance is a relatively new field. However, AI tools are showing signs that they can help board members predict trends and make better decisions - Jo Ellis reports.

As the years go by, technology continues to advance. Society is more advantaged than ever before, and recent progress has allowed humans to automate a significant amount of their workloads. Engineers and computer scientists have been hard at work perfecting the technology behind AI, bringing about incredible discoveries of the ways AI can support business operations.

AI is now transforming how companies operate by facilitating organisation, decision-making, and risk management. Executives, board members, and directors can use AI tools to enhance corporate governance and effective leadership strategies.

By incorporating AI tools into board meetings, business strategy, decision-making and operations, they can ensure all aspects of their establishment are running as efficiently as possible.

Ways AI tools can support corporate governance

AI tools can support corporate governance in several ways, making this technology practical in daily business operations. Director training programs often encourage professionals to make use of these tools. Although it is possible for a company to successfully operate without the help of AI technology, using these tools can help simplify director training for everybody involved.

Here are some ways that AI tools can improve your everyday work practices:

Market predictions

AI technology can predict trends within the market. With the input of past market patterns and statistics, programmers have created tools that monitor patterns and trends. These tools can make predictions and optimise financial decision-making for a company. Those responsible for corporate governance can use these predictions to scale the business and increase profits. Market prediction tools are also beneficial for investment analysis and business plan development.

Risk-management

Using risk modelling and data science, AI tools can act as risk-management assistance to enhance corporate governance practices. You can use risk-management AI technology to mitigate crises and decrease liability risks within your business strategy.

These tools monitor risks in real-time, allowing executives and company directors to easily stay on top of what's happening within the company. AI technology can analyse and assess each potential risk so leadership can address any issues as soon as possible.

Data-driven decision-making

AI makes corporate governance simpler with data-driven decision-making capabilities. Companies can input relevant data into decision-making AI tools to help analyse patterns and trends. The program can leverage this data to assess the most-effective approach to each operation.

Whether it's used for investment analysis or assistance with general counsel during board meetings, AI is transforming companies' approaches to corporate governance.

The accuracy, consistency, and high speed of these decision-making AI tools make them much more reliable than traditional data analysis methods.

Financial assessments

AI is highly effective when it comes to documenting and assessing finances. Companies can use financial AI tools to help build financially sustainable business practices. These tools lend extra support to finances as other AI technology provides intelligent insights and predictions.

You can also use AI tools to create operating models that help make real-time business strategy decisions based on financial trends during board meetings. Technology is much more reliable than the human brain for mathematical processing, and it's significantly more efficient for your business operations.

How to bring together Artificial Intelligence and boards

Effective corporate governance entails utilising all available tools to improve efficiency, facilitate director training, and scale your business. Corporate governance is more straightforward when companies incorporate AI technology into their business practices.

Staying up-to-date on the latest AI technology for business management is the best way for executives to improve corporate governance. Although AI technology will never fully replace the efforts of human beings, it can make the workload and operations easier for everyone.

The future of corporate governance and AI

When technology advances, it becomes more efficient, reliable, and valuable. AI has had a significantly positive impact on corporate governance and will most likely continue to do so. As time goes on, AI will become even more integrated into everyday living.

Currently, engineers and AI specialists are developing forms of AI technology that can further advance how businesses handle their finances, decision-making, fraud detection, and data analysis. Soon, companies will be able to use AI technology for talent acquisition, training, and relationship management.

Some people fear that as AI technology continues to expand, it will take jobs away from people and negatively affect employment rates. However, AI tools have the potential to create more jobs than they replace, overall improving the economy.

Source: thecorporategovernanceinstitute

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