

MCA

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TECHNICAL NEWS

Department of Computer Applications

NEWSLETTER

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WEEKLY EDITION

World's first AI news anchor unveiled in China

China's state news agency Xinhua this week introduced the newest members of its newsroom: AI anchors who will report "tirelessly" all day every day, from anywhere in the country.

Chinese viewers were greeted with a [digital version of a regular Xinhua news anchor](#) named Qiu Hao. The anchor, wearing a red tie and pin-striped suit, nods his head in emphasis, blinking and raising his eyebrows slightly.

"Not only can I accompany you 24 hours a day, 365 days a year. I can be endlessly copied and present at different scenes to bring you the news," he says.

Xinhua also presented an English-speaking AI, based on another presenter, who adds: "The development of the media industry calls for continuous innovation and deep integration with the international advanced technologies ... I look forward to bringing you brand new news experiences."

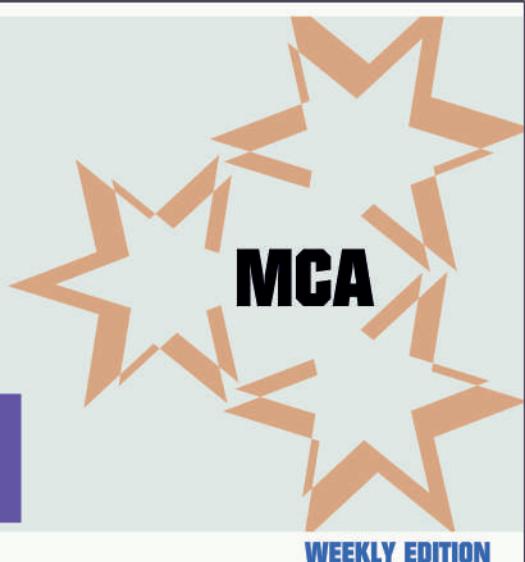
Developed by Xinhua and the Chinese search engine, Sogou, the anchors were developed through **machine learning** to simulate the voice, facial movements, and gestures of real-life broadcasters, to present a "a lifelike image instead of a cold robot," according to Xinhua.

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WEEKLY EDITION

NASA to Use Blockchain Technology for Air Traffic Management

US space agency NASA is planning to advance its technology by adding Blockchain to secure air traffic services and support, the media reported. The agency will work with an open source Blockchain platform called "Hyperledger Fabric" that is specifically designed for enterprise transactions that resemble typical air traffic management interactions, Ronald J. Reisman, an aero-computer engineer at the NASA Ames Research Centre, said in a statement.

Blockchain would address the potential issues of privacy, prevent spoofing, denial of service and other attacks, Reisman said. He asserted that Blockchain presents an engineering prototype that embodies a design and method that may be applied to mitigate security issues. "The design innovation is the use of an open source permissioned Blockchain framework to enable aircraft privacy and anonymity while providing a secure and efficient method for communication with air traffic services, operations support, or other authorised entities," he noted.

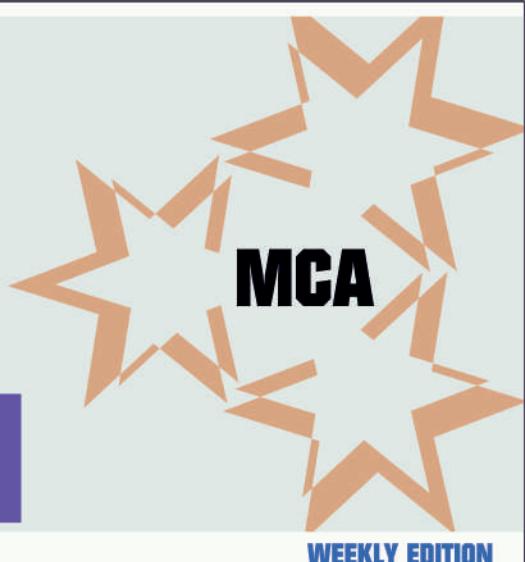
The new framework also features certificate authority, smart contract support, and higher-bandwidth communication channels for private information that may be used for secure communication between any specific aircraft and any particular authorised member. The prototype demonstrates how this method can be economically and rapidly deployed in a scalable modular environment, Reisman said.

IoT, cloud and machine learning giving elevator giants a lift

Kone is one of a number of leading elevator manufacturers that have been loading their lifts and escalators with **cloud-connected IoT devices and applying machine learning** to the readings. Kone is one of a number of leading elevator manufacturers that have been loading their lifts and escalators with cloud-connected IoT devices and applying machine learning to the readings. The effort is allowing them to predict when faults will occur, and fix them before any disruption occurs.

“Normally what happens is the elevator breaks down, we identify the fault and we fix it. Now we're able to get information prior to the breakdown, maybe detecting a contact slightly failing or aging, where we wouldn't have seen that before; or a door system wearing and making more reopenings than it would have done,” explains Jim Hastings, Kone ANZ maintenance director.

“So instead of going there when people are getting inconvenienced and potentially trapped in the elevator, we're actually fixing that item ahead of time,” he adds.



Bangalore's Sagar Hospitals Push the Use of AI, Usher in the Era of 'Internet of Medical Things'

Hospitals and other medical institutions collect heaps of data on every patient that comes in for treatment, providing a roadmap for AI with access to structured datasets. It comes as no surprise that [AI](#) is already being heavily utilised in the healthcare sector to treat patients and streamline a lot of processes.

The latest to jump on the AI bandwagon in the healthcare sector is Sagar Group of Hospitals. This is due to the fact that the Indian government is also [pushing heavily](#) for the adoption of new-age technologies like AI, blockchain and the Internet of Things in hopes that it will leapfrog issues with administration and corruption. Owing to this, Sagar Hospitals has adopted a positive attitude towards the advancements made in [healthcare](#) regarding AI.

AI in healthcare

Ishiqa Multani, the Executive Director of Sagar Hospitals, recently spoke about the hospital's approach to the various cutting-edge technology that is emerging in the field currently. She revealed how the [data](#) collected is stored in a structured way, and how traditional database systems have already made this process efficient.

Multani further explained the process of machine learning and deep learning and how it is applied to data, build algorithms that can learn to [detect patterns](#) and come up with a diagnosis or a prediction.

Moreover, they can also engage in decision-making and draw conclusions, providing doctors with a helping hand in prognosis.

The Director also spoke about the "immense amount of research and work" happening in the field. This includes technology such as wearables with AI technology for early detection, mammography results that can detect future risks of breast cancer or even scans that can detect an early symptom of cardiovascular episodes.

Rise Of 'Internet of Medical Things'

Just as the world is slowly moving towards creating an Internet of Things, the healthcare is moving towards creating something known as the Internet of Medical Things. This will be done through a machine-to-machine communication using sensors, that capture an event and then wait for the receiver to take an action on said event, explained Multani.

Moreover, this can be monitored remotely by a healthcare provider using machine-to-machine technology. This technology can also make room for more efficient management of beds, managing costs more effectively, and timely intervention due to earlier response rates. This will prove to be a "lifesaver" in the case of road accidents, stated Multani.

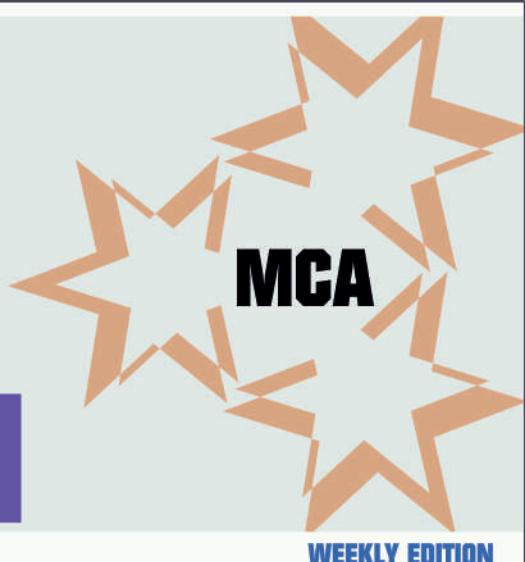
Converting Wi-Fi signals to electricity with New 2-D materials

Imagine a world where smartphones, laptops, wearable's, and other electronics are powered without batteries. With the first fully flexible device that can convert energy from Wi-Fi signals into electricity that could power electronics.

Devices that convert AC electromagnetic waves into DC electricity are known as “retinas.” The researchers demonstrate a new kind of recent, described in a study appearing in *Nature* today that uses a flexible radio-frequency (RF) antenna that captures electromagnetic waves — including those carrying Wi-Fi — as AC waveforms.

The antenna is then connected to a novel device made out of a two-dimensional semiconductor just a few atoms thick. The AC signal travels into the semiconductor, which converts it into a DC voltage that could be used to power electronic circuits or recharge batteries.

In this way, the battery-free device passively captures and transforms ubiquitous Wi-Fi signals into useful DC power. Moreover, the device is flexible and can be fabricated in a roll-to-roll process to cover very large areas.



WEEKLY EDITION

Cryptocurrency

“A faster, more efficient cryptocurrency”

Cryptocurrencies, such as the popular Bitcoin, are networks built on **the blockchain**, a financial ledger formatted in a sequence of individual blocks, each containing transaction data. These networks are decentralized, meaning there are no banks or organizations to manage funds and balances, so users join forces to store and verify the transactions.

But decentralization leads to a scalability problem. To join a cryptocurrency, new users must download and store all transaction data from hundreds of thousands of individual blocks. They must also store these data to use the service and help verify transactions. This makes the process slow or computationally impractical for some.

In a paper being presented at the Network and Distributed System Security Symposium next month, the MIT researchers introduce Vault, a cryptocurrency that lets users join the network by downloading only a fraction of the total transaction data. It also incorporates techniques that delete empty accounts that take up space, and enables verifications using only the most recent transaction data that are divided and shared across the network, minimizing an individual user's data storage and processing requirements.

In experiments, Vault reduced the bandwidth for joining its network by 99 percent compared to Bitcoin and 90 percent compared to Ethereum, which is considered one of today's most efficient cryptocurrencies. Importantly, Vault still ensures that all nodes validate all transactions, providing tight security equal to its existing counterparts.

“Currently there are a lot of cryptocurrencies, but they're hitting bottlenecks related to joining the system as a new user and to storage. The broad goal here is to enable cryptocurrencies to scale well for more and more users,” says co-author Derek Leung, a graduate student in the Computer Science and Artificial Intelligence Laboratory (CSAIL).

Engineers translate brain signals directly into speech

Advance marks critical step toward brain-computer interfaces that hold immense promise for those with limited or no ability to speak. In a scientific first, neuroengineers have created a system that translates thought into intelligible, recognizable speech. This breakthrough, which harnesses the power of speech synthesizers and **artificial intelligence**, could lead to new ways for computers to communicate directly with the brain.

Designed By:-MCA Dept.