

Department of Data Science
Weekly Data Science Bytes

**Game-Changing New Technology Can Squeeze Hydrogen
From Seawater**



- We developed a novel, multi-layered electrode that can extract hydrogen directly from seawater efficiently and sustainably. Traditional methods face a host of problems, mainly corrosion and performance degradation caused by chloride ions in seawater,” said Dr. Tanveer Ul Haq, Assistant Professor in the Department of Chemistry at the University of Sharjah and the study’s lead author.
- The team designed a custom-built electrode that, according to Dr. Ul Haq, “overcomes these issues by creating a protective and reactive microenvironment that boosts performance while resisting damage

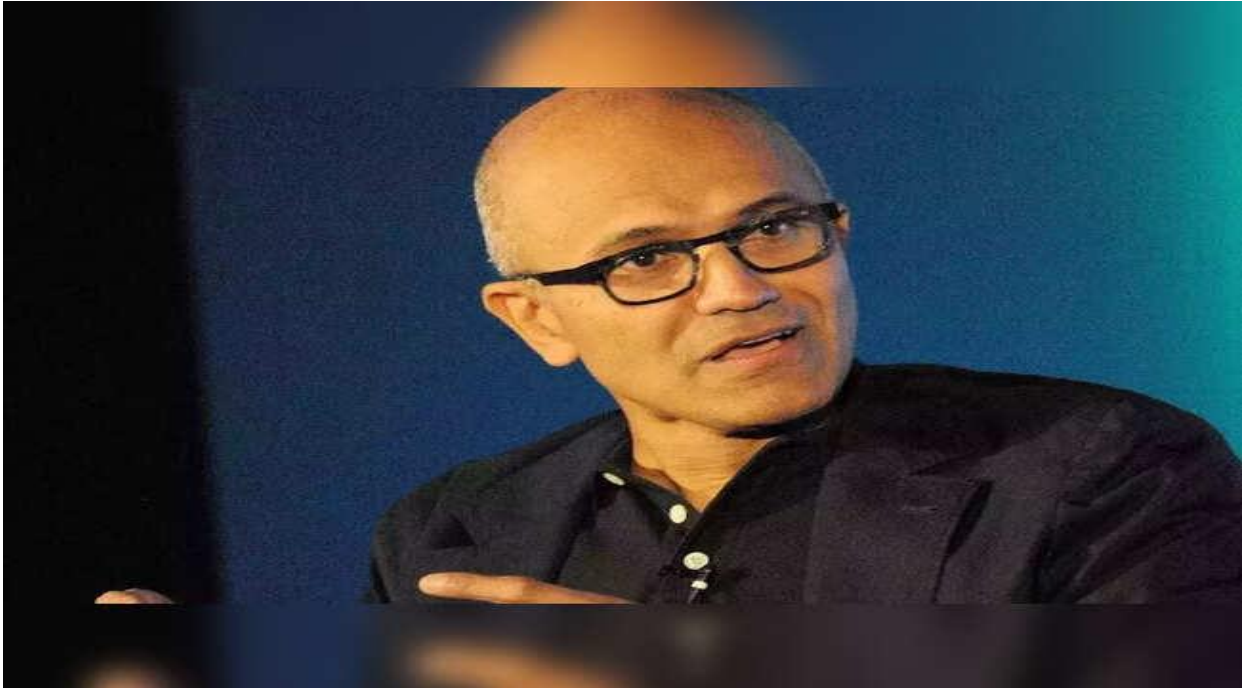
Brain-Inspired AI Learns To See Like Humans in Stunning Vision Breakthrough



Bridging the Gap Between CNNs and the Human Brain

- The human brain excels at quickly identifying important features within complex visual scenes, a level of efficiency that conventional AI systems have struggled to achieve. Convolutional Neural Networks (CNNs), the most commonly used models for image recognition, analyze images using small, fixed square-shaped filters. While effective to a degree, this design limits their ability to detect wider patterns in fragmented or variable data.
- Vision Transformers (ViTs) have more recently outperformed CNNs by evaluating entire images simultaneously. However, their success comes at a cost, they require enormous computing power and vast datasets, making them less feasible for practical, large-scale deployment.

**Computational thinking is key as AI reshapes software:
Microsoft CEO Satya Nadella**



- In a prior conversation with Meta CEO Mark Zuckerberg earlier this year, Nadella had revealed that AI already writes 20–30% of Microsoft's code across some projects. "I'd say maybe 20–30% of the code that is inside of our repos today... is probably all written by software," Nadella said at the time.

Tech narratives equally vital in AI progress



- *AI technology has been widely used in China across sectors such as education, medical care and agriculture. And many local governments are also leveraging innovation to promote the development of AI and related industries. Three experts share their views on the issue with China Daily*
- While some hail DeepSeek as a formidable competitor, others view it as a natural second-mover gaining advantage in an evolving AI landscape. The critical question is whether DeepSeek is the result of merely a second-mover's advantage or a serious path to the first-mover's narrative.

Russian intelligence says it collects WeChat data: What does that mean?



- Russian counterintelligence agents are analyzing data from the popular Chinese messaging and social media app WeChat to monitor people who might be in contact with Chinese spies, according to a Russian intelligence document obtained by The New York Times.
- The disclosure highlights the rising level of concern about Chinese influence in Russia as the two countries deepen their relationship. As Russia has become isolated from the West over its war in Ukraine, it has become increasingly reliant on Chinese money, companies and technology. But it has also faced what the document describes as increased Chinese espionage efforts.