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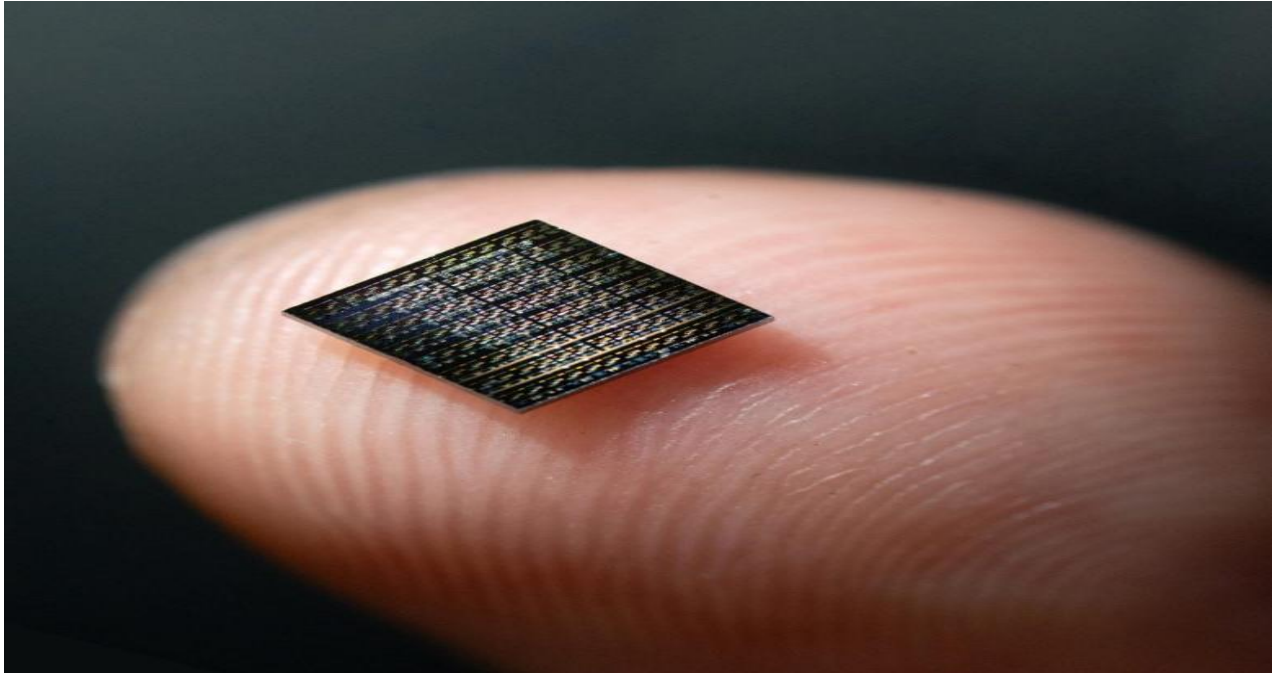HOTEL MANAGEMENT AND
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Weekly Data Science Bytes

Israeli startup CaPow powers a new era of industrial robotics

- This breakthrough technology is redefining how factories, warehouses and logistics operations manage their robotic fleets: freeing up floor space, and delivering measurable gains in efficiency and sustainability.

- For years, automation leaders have struggled with the silent cost of robotic downtime. Charging interruptions force operators to inflate capital expenses, and limit return on investment
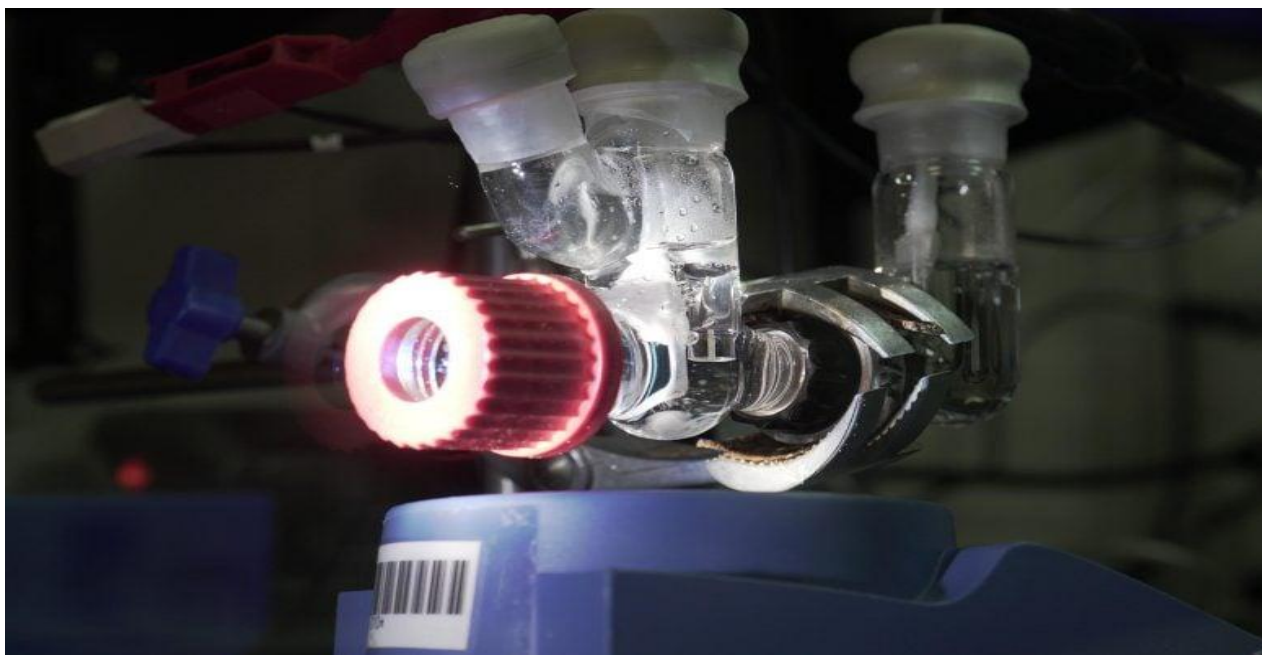
Source: https://www.ynetnews.com/tech-and-digital/article/s1hiok11l

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New Artificial Neurons Physically Replicate the Brain

- Researchers from the USC Viterbi School of Engineering and the School of Advanced Computing have created artificial neurons that closely mimic the complex electrochemical behavior of real brain cells. Their breakthrough, described in *Nature Electronics*, represents a major step forward in neuromorphic computing. This new approach could dramatically shrink chip size, cut energy use by several orders of magnitude, and bring us closer to achieving artificial general intelligence (AGI).

- Unlike standard digital processors or existing silicon-based neuromorphic chips that only simulate neural activity, these artificial neurons physically reproduce the analog processes of biological neurons. In the same way that neurochemicals trigger brain activity, specific chemicals can now be used to initiate computation in brain-inspired, or neuromorphic, hardware. Because they replicate the actual biological mechanisms rather than relying on mathematical models, these artificial neurons are fundamentally different from earlier designs.
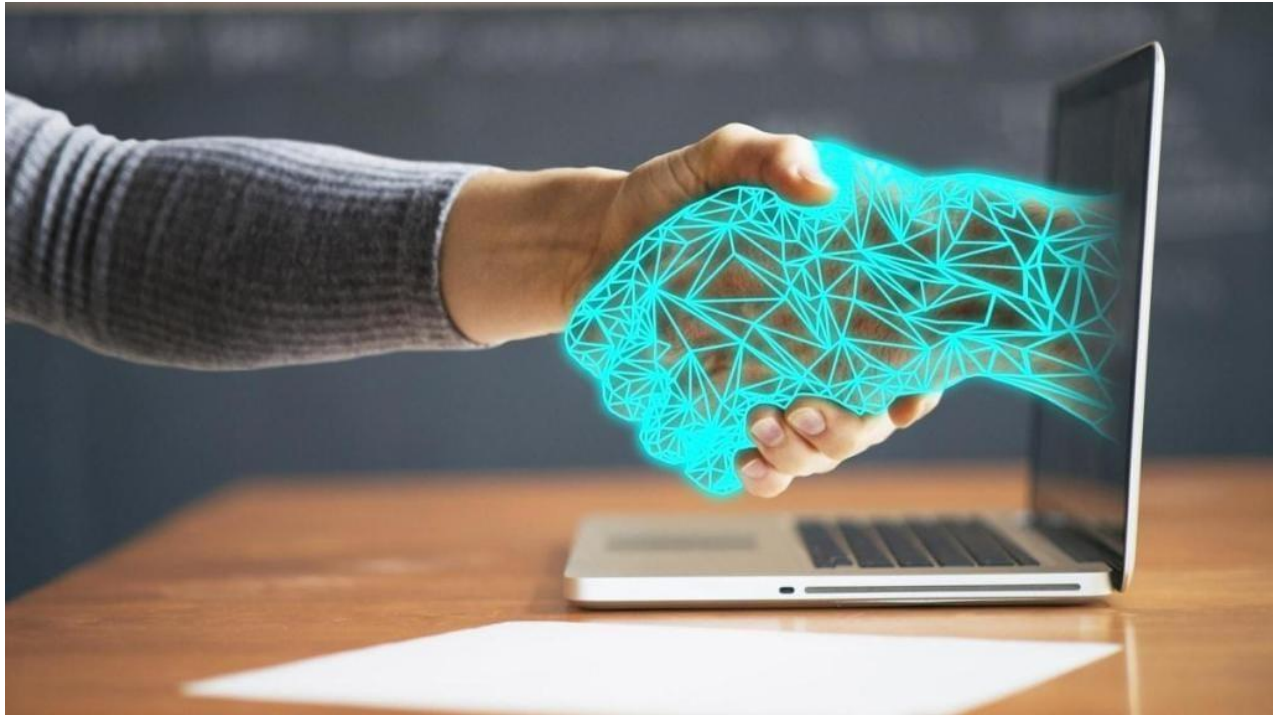
Source: https://scitechdaily.com/new-artificial-neurons-physically-replicate-the-brain/

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Scientists Create an Artificial "Leaf" That Turns CO_2 Into Useful Products

- Scientists have found a sustainable new method for producing the essential chemicals that make up thousands of products we use every day, including plastics and cosmetics.

- The global chemical industry manufactures an enormous range of compounds by transforming raw materials, most often fossil fuels, into finished goods. Because of its vast scale and reliance on these carbon-heavy resources, the sector is responsible for around 6% of global carbon emissions.

- Now, a team led by the University of Cambridge is working on innovative techniques that could eventually "de-fossilize" this crucial industry and make chemical production far more sustainable.

Source: https://scitechdaily.com/scientists-create-an-artificial-leaf-that-turns-co%E2%82%82-into-useful-products/

New AI law to be modelled on IT Act

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- After formalising rules to identify, label, and regulate deepfakes another synthetically generated content, the ministry of electronics and (MeitY) will soon bring out a comprehensive legislation on [Artificial Intelligence](#).
- Official sources told FE that once public consultation on the draft rules closes on November 6, the government will finalise them. However, to avoid possible legal challenges, a full-fledged AI law, on the lines of the Information Technology (IT) Act, 2000, will follow.
- This means a Bill will be introduced in Parliament to address issues related to deepfakes and synthetically generated content.

Source:https://www.financialexpress.com/life/technology/new-ai-law-to-be-modelled-on-it-act/4029591/

What is Genie 3, Google's latest interactive 3D AI model?

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- Google Genie 3, a new AI model that has been unveiled by Google DeepMind, can create interactive 3D worlds. The model will recreate the environment in real time at 24 frames per second, staying consistent at 720p for a few minutes, after users simply submit a text prompt that describes the environment.

- Unlike earlier versions, Genie 3 supports continuous interaction for a few minutes, remembers where objects were placed, and allows dynamic changes like adding characters or altering weather conditions.

- According to a blog post that accompanied the release, agents may anticipate changes in the environment and the potential effects of their actions by using world models, which can comprehend and recreate settings

Source: https://indianexpress.com/article/technology/tech-news-technology/what-is-genie-3-googles-latest-interactive-3d-ai-model-10174858/

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Introducing Blue Jay and Project Eluna, Amazon's latest robotics and AI technology for its operations

- Every time we innovate across Amazon's operations network, we start with a simple question: "How can we make work safer, smarter, and more rewarding for our employees?" Just ahead of this year's busiest shopping season, two new systems—Blue Jay and Project Eluna—help answer that question. These systems combine robotics and AI to reduce physically demanding tasks, simplify decisions, and open new career opportunities for the employees who keep Amazon moving.

- "Our latest innovations are great examples of how we're using AI and robotics to create an even better experience for our employees and customers," says Tye Brady, chief technologist for Amazon Robotics. "The goal is to make technology the most practical, the most powerful tool it can be—so that work becomes safer, smarter, and more rewarding."