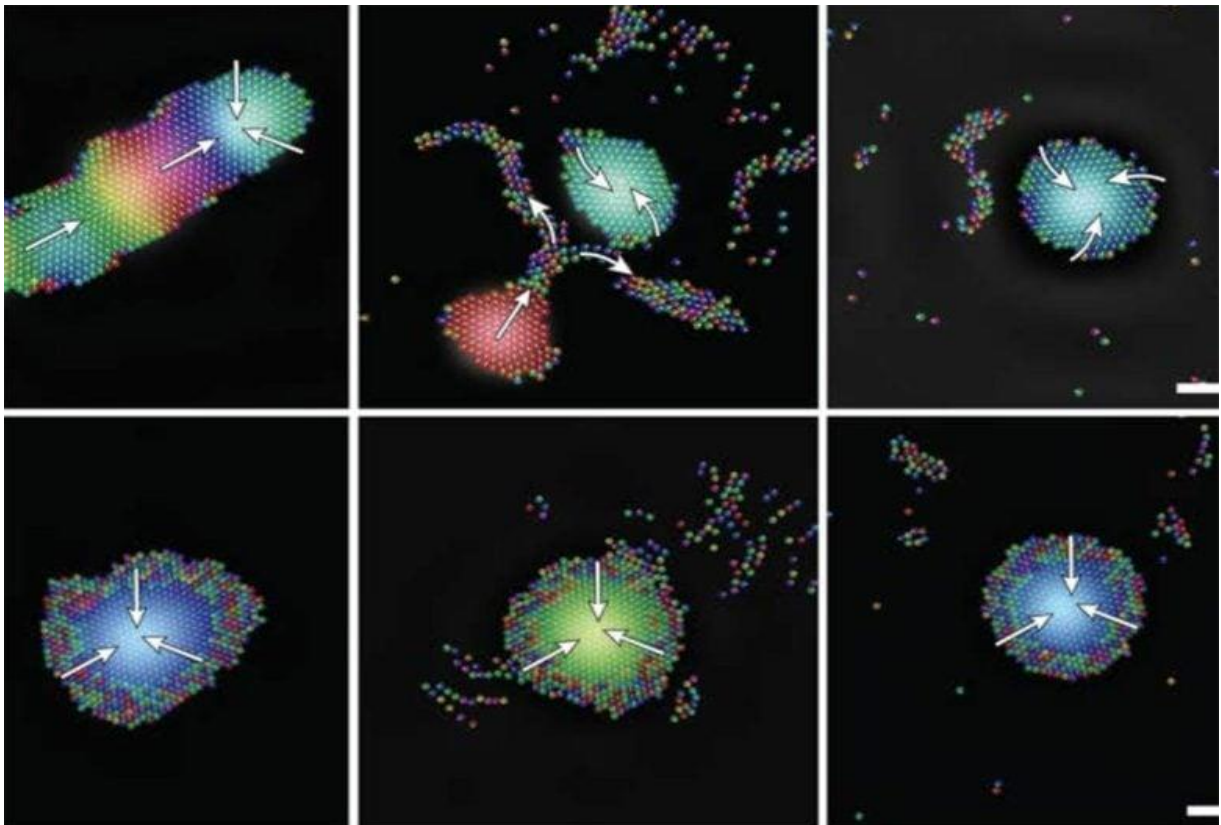


Department of Data Science
Weekly Data Science Bytes

These Tiny Robots Can Swarm, Adapt, and Heal Themselves



Nature's Blueprint for Robot Swarms

- Animals such as bats, whales, and insects have long relied on sound to communicate and find their way. Drawing inspiration from this, an international group of scientists has developed a model for tiny robots that use sound waves to move and work together in large, coordinated swarms that behave almost intelligently.
- According to team leader Igor Aronson, Huck Chair Professor of Biomedical Engineering, Chemistry, and Mathematics at Penn State, these robotic collectives could eventually take on challenging missions like exploring disaster areas, cleaning polluted environments, or performing medical procedures inside the human body.
- “Picture swarms of bees or midges,” Aronson said. “They move, that creates sound, and the sound keeps them cohesive, many individuals acting as one.”

Source: <https://scitechdaily.com/these-tiny-robots-can-swarm-adapt-and-heal-themselves/>

Google's new AI finds promising approach for cancer treatment



- The Cell2Sentence-Scale 27B (C2S-Scale) is a 27-billion-parameter foundation model designed to understand the language of individual cells. “This announcement marks a milestone for AI in science,” Shekoofeh Azizi and Brian Perozzi, staff scientists at Google DeepMind and Google Research, respectively, said in an accompanying blogpost.
- Adding, “C2S-Scale generated a novel hypothesis about cancer cellular behaviour and we have since confirmed its prediction with experimental validation in living cells. This discovery opens promising new avenues for developing therapies to combat cancer.

**Sora 2 update: OpenAI lets all users create 15-second videos, Pro
users up to 25 seconds**



- OpenAI has rolled out new updates for its creative AI-video generation platform, Sora, enhancing the tools available to both Pro and standard users.
- According to a tweet posted by the company on 16 October 2025, Pro users can now access “storyboards” directly through the composer on the Sora web platform. This addition is designed to streamline content planning and offer creators a more visual approach to storytelling
- The Sora 2 update also introduces new video generation capabilities. All users can now produce videos of up to 15 seconds in length on both the Sora app and web interface. Pro users receive an extended allowance, with the option to generate videos up to 25 seconds on the web.

Cornell's Tiny "Microwave Brain" Chip Could Transform Computing and AI



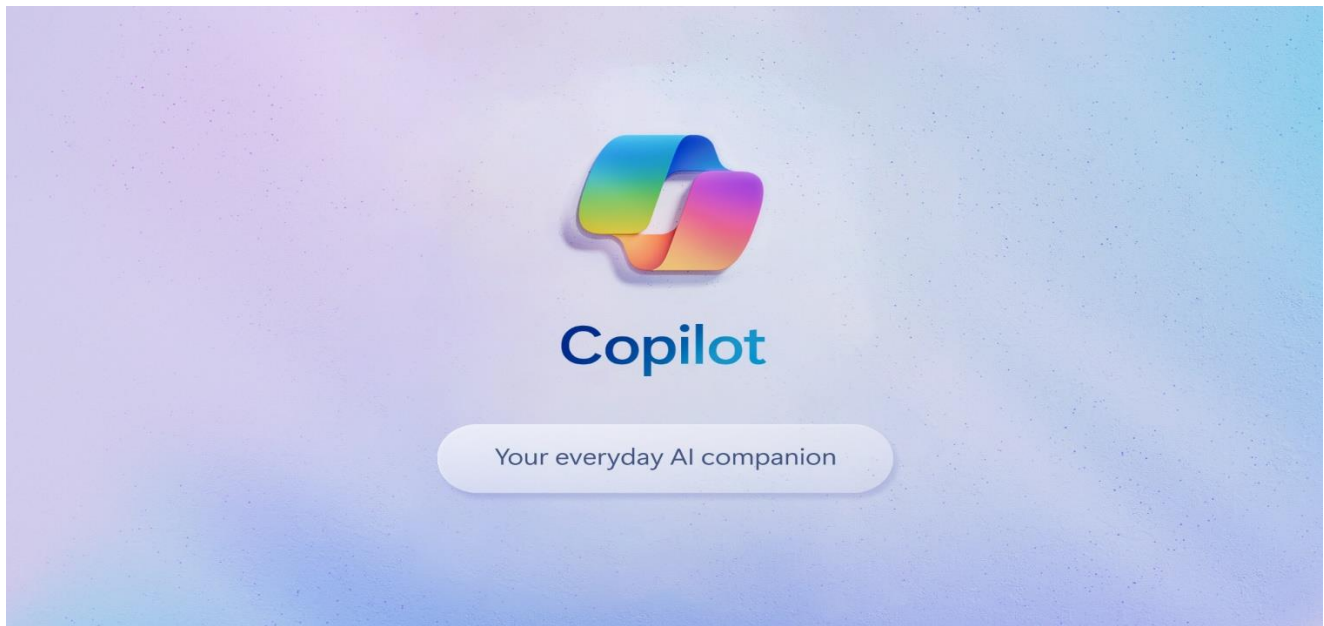
This tiny, low-power processor performs real-time tasks like signal decoding, radar tracking, and data analysis while consuming less than 200 milliwatts.

Cornell's "Microwave Brain" Breakthrough

- Cornell University scientists have created a new kind of low-power microchip called a "microwave brain," capable of processing both ultrafast data and wireless communication signals by using the unique properties of microwaves.
- Recently described in the journal *Nature Electronics*, this processor is the first fully functional microwave neural network built directly on a silicon chip. It performs real-time computations in the frequency domain for demanding tasks such as radio signal decoding, radar tracking, and digital data processing, all while consuming under 200 milliwatts of power.

Source: <https://scitechdaily.com/cornells-tiny-microwave-brain-chip-could-transform-computing-and-ai/>

Microsoft launches new AI upgrades to Windows 11, boosting Copilot



- Oct 16 (Reuters) - Microsoft ([MSFT.O](https://www.reuters.com/business/microsoft-launches-new-ai-upgrades-windows-11-boosting-copilot-2025-10-16/)), [opens new tab](#) on Thursday rolled out a series of artificial intelligence upgrades to Windows 11 that would make its Copilot AI assistant more appealing to users by making it easier to automate tasks and connect with services across devices.
- Users can now use the wake word "Hey Copilot" to activate the AI assistant and execute voice commands in a new opt-in feature on any Windows 11 PC, Microsoft said. The company is also expanding Copilot Vision - which can analyze content on users' screens and answer related questions - to all markets where Copilot is offered.
- Microsoft said it would also launch a feature for Windows Insiders that would allow users to engage with Vision through text, and not just with voice.