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AEROSPACE

At Ukraine’s Top Tech Event, Faster and Cheaper Rule: Drones, autonomy, software, and communications lead the roster



“Four years into a full-scale invasion and a decade after Russia’s annexation of [Crimea](#), Ukraine’s tech ecosystem continues to flourish at home and in exile around the world. After celebrating its 10th anniversary in 2024, Ukraine’s premier tech event, [IT Arena](#), returned to the Arena Lviv Stadium for the first time since 2019.

In September 2025, I attended the event for the sixth time (the fourth since the invasion). Over the years, I’ve watched as attendees and speakers slowly transitioned from a focus on consumer tech to an innovative emphasis on defense, security, health, and governance. In the face of adversity and necessity, [Ukraine’s tech scene](#) has not only survived, it has blossomed into an international powerhouse.”

Source: [IEEE Spectrum](#) (10 Nov 2025)

AI

Can AI be truly creative?



“Pianita number 17 is a short, haunting piece for the piano. Set in the D minor key, its poignant chords and softly ascending arpeggios convey a sense of lost love, yet with enough novelty — dissonant notes and an eerie timing shift — to lift the piece out of cliché. What searing life experiences, then, did the composer pour into this work?

None, as it turns out. Because this music was produced by an artificial-intelligence model, trained on thousands of hours of YouTube videos.

For decades, psychologists have thought of creativity as a key trait that would set us apart from machines, even as they surpassed us in intelligence and skill. But now, a wave of generative AI models, which create new content based on learning from huge data sets, is throwing shade on this idea.

These models exploded onto the scene in November 2022 when the California AI firm OpenAI released [ChatGPT](#), a hugely popular AI chatbot. Powered by the large language model (LLM) GPT-3.5, ChatGPT was able to produce convincing text and images in response to simple prompts. Models that were even more impressive quickly followed.”

Source: [Nature](#) (5 Nov 2025)



Featured Course
Microsoft Copilot for Excel (2024)
2h 3m
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AI

Five minutes of training could help you spot fake AI faces



“Five minutes of training can significantly improve people’s ability to identify fake faces created by artificial intelligence, new research shows.

Scientists from the University of Reading, Greenwich, Leeds and Lincoln tested 664 participants’ ability to distinguish between real human faces and faces generated by computer software called StyleGAN3. Without any training, super-recognisers (individuals who score significantly higher than average on face recognition tests) correctly identified fake faces 41% of the time, while participants with typical abilities scored just 31%. If they had their eyes closed and guessed, people would perform at around 50% (chance level).

A new set of participants who received a brief training procedure, which highlighted common computer rendering mistakes such as unusual hair patterns or incorrect numbers of teeth, had higher accuracy. Super-recognisers achieved 64% accuracy in detecting fake faces, while typical participants scored 51% accuracy.

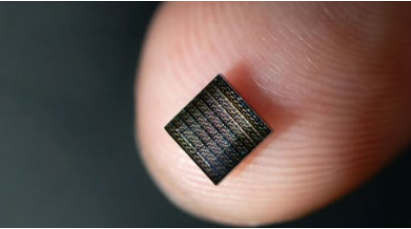
Dr Katie Gray, lead researcher at the University of Reading, said: “Computer-generated faces pose genuine security risks. They have been used to create fake social media profiles, bypass identity verification systems and create false documents. The faces produced by the latest generation of artificial intelligence software are extremely realistic. People often judge AI-generated faces as more realistic than actual human faces.

“Our training procedure is brief and easy to implement. The results suggest that combining this training with the natural abilities of super-recognisers could help tackle real-world problems, such as verifying identities online.””

Source: [Eurekalert!](#) (11 Nov 2025)

AI

Artificial neurons that behave like real brain cells



“USC researchers built artificial neurons that replicate real brain processes using ion-based diffusive memristors. These devices emulate how neurons use chemicals to transmit and process signals, offering massive energy and size advantages. The technology may enable brain-like, hardware-based learning systems. It could transform AI into something closer to natural intelligence.”

Source: [USC](#) (5 Nov 2025)

ARCHITECTURE

See Through Walls: Adaptive Reuse Through Data, AI, and Circular Design



“Behind layers of plaster, paint, and finishes lies an intricate network of pipes, electrical conduits, beams, and other structural elements that make a building function and stand, yet remain invisible to the everyday eye. Within these layers, traces of different periods accumulate: replaced systems, improvised adaptations, and technical solutions that once responded to specific contexts and urgencies. In [adaptive reuse](#), the greatest challenge often begins before construction even starts, which is understanding what lies within when little or no reliable documentation exists. During a renovation, pleasant or unpleasant surprises are inevitable. The unexpected is part of the process, but it also represents cost, delay, and risk factors that often discourage investors and professionals from engaging in this type of project.

It is precisely this “invisible” dimension that the latest research by global design and make software company [Autodesk](#) and design and engineering firm [Arcadis](#) seeks to address. By combining artificial intelligence, sensors, and predictive modeling, the teams are developing an experimental tool capable of “seeing through walls.” This system uses multiple sources of information, such as laser scans, sensors, old floor plans, and geospatial data, to create intelligent three-dimensional models of existing buildings. From these models, [AI](#) can infer and predict what is not directly visible, including the position of pipes, the condition of materials, or the structural health of certain components.”

Source: [Archdaily](#) (11 Nov 2025)

CLIMATE CHANGE

Antarctica’s collapse may already be unstoppable, scientists warn



“Researchers warn Antarctica is undergoing abrupt changes that could trigger global consequences. Melting ice, collapsing ice shelves, and disrupted ocean circulation threaten sea levels, ecosystems, and climate stability. Wildlife such as penguins and krill face growing extinction risks. Scientists stress that only rapid emission reductions can avert irreversible damage.”

Source: [ANU](#) (6 Nov 2025)

DESIGN

Six of the most exciting projects at Designart Tokyo 2025



“The annual [Designart Tokyo](#) festival featured a huge variety of designs from a steel tea room to a rocket-fuel-tank speaker. Here, [Cajsa Carlson](#) selects six of the best from this year’s event.

Works by emerging creatives mixed with pieces by more established names at Japan’s [Designart Tokyo](#), which is one of the country’s largest art and design festivals.

This year, a new 1,145-square-metre gallery space was unveiled in Shibuya, central Tokyo, which contained the main Designart Tokyo exhibition.

But visitors could also explore design in more unusual venues, including rooms underneath one of the city’s many railway lines and basements in office buildings not usually open to the public.

Below, Dezeen selected six of the most interesting projects at Designart Tokyo, ranging from collectable design and intriguing pieces by young creatives to furniture and larger installations.”

Source: [Dezeen](#) (10 Nov 2025)

DESIGN

Eight lights that will change the way you see 3D-printed design



“Could a [3D-printed](#) lamp become a design classic? We look at some recent examples of how this technology can produce timeless objects, not just throwaway products.

With so many 3D-printed products now on the market – typically manufactured in plastic – these pieces are often seen as cheap and disposable.

Now, designers are out to prove that additive manufacturing can produce objects with long-term value, with qualities that aren’t possible through other forms of production.

This is most apparent in [lighting design](#), where 3D-printed plastics or bioplastics can offer surprising mixes of form and translucence.

“When it comes to visual effects and transparency, the geometries and forms enabled by 3D printing are difficult to achieve with other transparent materials,” said French designer [Lucas Zito](#).

“Plastic will never be marble, oak, metal or glass, but it allows us to explore everything that lies beyond those categories.””

Source: [Dezeen](#) (7 Nov 2025)

ENERGY

Turning CO2 into clean fuel faster and cheaper



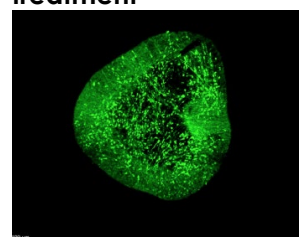
"A team of scientists led by Dr. Kee Young Koo from the Hydrogen Research Department at the Korea Institute of Energy Research (President Yi Chang-Keun, hereafter referred to as KIER) has created a world-leading catalyst capable of transforming carbon dioxide, a major greenhouse gas, into an essential ingredient for producing eco-friendly fuels.

The reverse water-gas shift (RWGS) reaction is a chemical process that converts carbon dioxide (CO2) into carbon monoxide (CO) and water (H2O) by reacting it with hydrogen (H2) in a reactor. The resulting carbon monoxide can then be combined with hydrogen to make syngas, a fundamental building block used to produce synthetic fuels such as e-fuels* and methanol. Because of its ability to recycle CO2 into usable fuel components, the RWGS reaction is seen as a promising pathway for advancing sustainable energy production."

Source: [National Research Council of Science & Technology](#) (5 Nov 2025)

HEALTHCARE

Scientists build detailed map of the developing human brain, opening new pathways for Parkinson's treatment

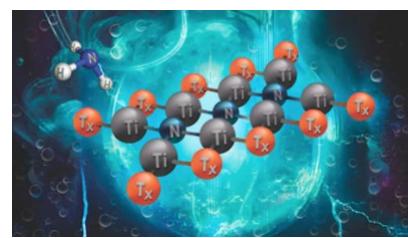


"Scientists from Duke-NUS Medical School and their collaborators have created one of the most comprehensive single cell maps of the developing human brain. The atlas captures nearly every cell type, their genetic fingerprints, and how they grow and interact. It also benchmarks best-in-class laboratory methods for producing high-quality neurons, marking a major step towards new therapies for Parkinson's disease and other brain disorders."

Source: [DUKENUS](#) (3 Nov 2025)

MATERIALS

New 2D material transforms air into fuel and fertilizer



"Researchers are exploring MXenes, 2D materials that could transform air into ammonia for cleaner fertilizers and fuels. Their atomic structures can be tuned to optimize performance, making them promising alternatives to expensive catalysts."

Source: [Texas A&M University](#) (6 Nov 2025)

PHYSICS

"Really bizarre" quantum discovery defies the rules of physics



"Researchers have discovered quantum oscillations inside an insulating material, overturning long-held assumptions. Their work at the National Magnetic Field Laboratory suggests that the effect originates in the material's bulk rather than its surface. The finding points toward a "new duality" in materials science—where compounds may behave as both metals and insulators—offering a fascinating puzzle for future research."

Source: [University of Michigan](#) (9 Nov 2025)

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