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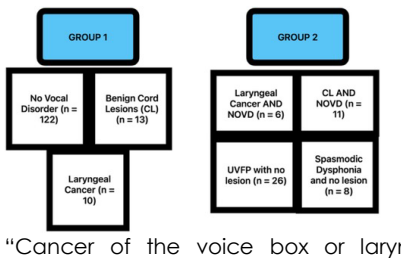
AI

AI Could Soon Detect Early Voice Box Cancer from The Sound of Your Voice



"Cancer of the voice box or larynx is an important public health burden. In 2021, there were an estimated 1.1 million cases of laryngeal cancer worldwide, and approximately 100,000 people died from it. Risk factors include smoking, alcohol abuse, and infection with human papillomavirus. The prognosis for laryngeal cancer ranges from 35% to 78% survival over five years when treated, depending on the tumor's stage and its location within the voice box.

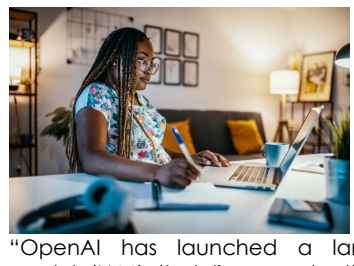
Catching cancer early is key for a patient's prospects. At present, laryngeal cancers are diagnosed through video nasal endoscopy and biopsies – onerous, invasive procedures. Getting to a specialist who can perform these procedures can take time, causing delays in diagnosis. But now, researchers have shown in *Frontiers in Digital Health* that abnormalities of the vocal folds can be detected from the sound of the voice. Such 'vocal fold lesions' can be benign, like nodules or polyps, but may also represent the early stages of laryngeal cancer. These proof-of-principle results open the door for a new application of AI: namely, to recognize the early warning stages of laryngeal cancer from voice recordings.

"Here we show that with this dataset we could use vocal biomarkers to distinguish voices from patients with vocal fold lesions from those without such lesions," said Dr Phillip Jenkins, a postdoctoral fellow in clinical informatics at Oregon Health & Science University, and the study's corresponding author."

Source: Eurekalert! (12 Aug 2025)

AI

OpenAI Launches Reasoning LLM That You Can Download and Tweak



"OpenAI has launched a large language model (LLM) that lives up to the company's name. Known as gpt-oss, it is the first 'reasoning' artificial intelligence (AI) from the firm that is open-weight, meaning that researchers will be able to download it and customize it.

The firm, based in San Francisco, California, detailed the system in a blogpost and technical description on 5 August. On some tasks, gpt-oss performs almost as well as the firm's most advanced models. The LLM is available in two sizes, both of which can be run locally and offline — the smaller of them on a single laptop — rather than requiring cloud computing or an online interface. This means they can be used to analyse — or be trained further on — sensitive data that can't be transferred outside a given network.

"I'm very excited," says Simon Frieder, a mathematician and computer scientist at the University of Oxford, UK. "The competition between open-source large language models is already strong, and this will make the competition even fiercer, which benefits the entire research community."

The release of gpt-oss comes at a time when powerful open-weight models from Chinese firms, such as Hangzhou-based DeepSeek and Beijing-based Moonshot AI, are gaining traction among researchers. Chinese open models already perform better than US-developed ones such as Llama (from Meta, based in Menlo Park, California) and are also poised to overtake them in terms of number of downloads, according to an analysis by Nathan Lambert, a machine-learning researcher at the Allen Institute for AI in Seattle, Washington, that was carried out before gpt-oss was released."

Source: Nature (6 Aug 2025)

ARCHITECTURE

UK Terminal Amsterdam Centraal Station / Superimpose Architecture + Architectural Studio ZJA

"Brand new terminal in a national monument - As a transport service that connects the continent, Eurostar plays a role in creating a shared European experience, with its stations serving as cultural landmarks. Cultural identity is therefore a key part of the brand's character. Eurostar's new UK Terminal is located in a national monument, that is Amsterdam Central Station, which is currently undergoing major renovation and redevelopment. The design seamlessly integrates into this large-scale station transformation and honors the monument by weaving it into the spatial experience of the building. Mallika Arora (architect ZJA Architects & Engineers): "We have taken great care to develop an architectonic concept that restores the lost monumental layers to their full glory, and makes them an integral part of the spatial experience. Anyone entering the new terminal will be able to traverse the entire timeline of Pierre Cuypers' monument. From the Cuypersgebou, which was built in 1889, to the IJhal, which was realized as recently as 2017." Ruben Bergambagt (architect Superimpose Architecture): "The interior connects past and future: curved ceilings reference the barrel vaults of Cuypers' design, while the Eurostar 'Spark ' logo is reflected in the design language. Subtle terrazzo floors with green tones guide the traveler through the space and form a visual bridge between the historical character and the contemporary aesthetic of the brand.""

Source: Archdaily (10 Aug 2025)

ARCHITECTURE

Eight Adaptive Reuse Projects in Detroit That Showcase the City's Transformation

"A renovated church and a 1920s skyscraper feature in this roundup of adaptive reuse projects in Detroit, where architects and designers bring new life and programmes to historical structures in the city.

Like other smaller cities in the US, such as Austin and Oklahoma City, Detroit is undergoing a notable increase in development.

Some of these development projects, such as the Little Village project by developer Library Street Collective and the Michigan Central campus by Ford, feature historic structures that have been adapted for new use.

The city's initial growth stemmed from its status as an automotive manufacturing hub in the 1920s before its economic decline began in the 1950s, when manufacturers began to leave.

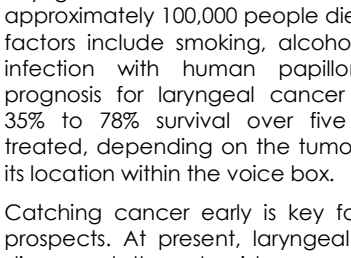
White flight and a continued worsening economy pushed the city to declare bankruptcy in 2013, and many parcels of land and buildings sat vacant while the metropolis struggled to find its footing, though a notable creative and Black population remained. Since redevelopment, increased prices and changing culture due to redevelopment have prompted long-standing Black residents to leave the city.

The round-up below includes eight adaptive reuse projects, showcasing a city in the midst of change."

Source: Dezeen (7 Aug 2025)

CREATIVITY

Can Creativity in Science Be Learnt? These Researchers Think So



"One morning in 2009, Jacqueline Tabler woke up with the solution to a laboratory problem that had been plaguing her for months. She got out of bed, grabbed her notebook, and started sketching out an experiment that had come to her in a dream.

Tabler, then a developmental-biology PhD student at King's College London, was struggling to reproduce data using methods from previous work in the lab that had shown the function of an enzyme, called PAR-1, in the development of frog embryos. She had the idea to perform a grafting experiment, taking a layer of cells expressing excess PAR-1 from one embryo and transplanting them onto an embryo that does not express the enzyme. By comparing these grafted embryos with control grafts expressing typical levels of PAR1, Tabler hoped to see what happened to the cells as the embryos created neurons.

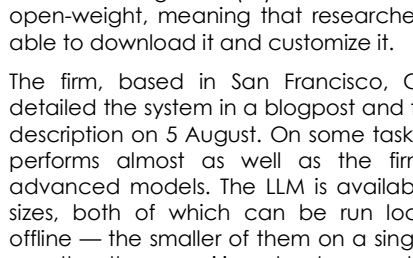
"It was a fantastical answer," she says. "I knew what I had to do was graft from one embryo to another embryo, follow the tissue, and then I would figure it out."

Tabler, who now leads a group at the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden, Germany, ran the grafting experiment and noticed that there was a higher-than-expected amount of PAR-1-expressing cells in certain layers of the embryos. From this, she and the lab team realized that PAR-1 had a previously unknown function controlling the orientation of cell division. The results were published in 2010 in Development."

Source: Nature (8 Aug 2025)

DESIGN

Conductive Wool Replaces Wiring and Circuits in Wooltech Electronics



"Wool takes the place of wiring, plastic and circuit boards in electronic devices created by designer Hinna Khan, a recent Central Saint Martins graduate inspired to find a new use for the material after watching farming documentaries.

Still in early development, Khan's WoolTech is made from a novel wool-based biomaterial, in which conductive pathways can be created using lasers.

This carbonises the material so it carries electricity, while the un-carbonised sections provide natural insulation.

The innovation could help to tackle the issue of e-waste, reimagining components that are usually made from a mix of metals and petrochemicals using a single organic, biodegradable material.

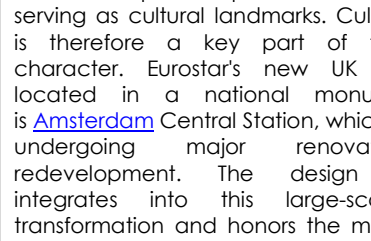
It could also help to lower demand for mined metals, which are associated with dangerous working conditions and child exploitation. However, Khan originally came to the idea after exploring solutions to a different problem: wool waste.

From watching farming documentaries – especially Clarkson's Farm, following former Top Gear host Jeremy Clarkson – she learnt that farmers in the UK have been shearing sheep purely for animal welfare reasons, with the wool itself having little value."

Source: Dezeen (5 Aug 2025)

FUEL CELLS

Walmart Will Test a Green-Hydrogen Fuel Cell Truck in Chile: The Country's Size and Terrain Make It an Ambitious Testbed



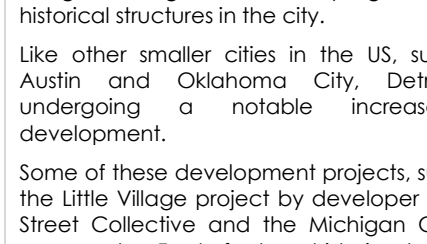
"Latin America's first green-hydrogen-powered fuel cell truck has hit the road in Chile, marking a milestone for the country's decarbonization efforts. The semitrailer truck will begin a yearlong testing phase in September 2025, loading up at Walmart across Chile.

But as Walmart and the rest of the country work to meet their decarbonization goals over the next decade, the challenge lies in building the necessary infrastructure to support hydrogen-powered ground transport in a geographically challenging environment."

Source: IEEE Spectrum (6 Aug 2025)

GENE EDITING

Scientists Just Cracked the Code to Editing Entire Chromosomes Flawlessly



"A group of Chinese scientists has created powerful new tools that allow them to edit large chunks of DNA with incredible accuracy—and without leaving any trace. Using a mix of advanced protein design, AI, and clever genetic tweaks, they've overcome major limitations in older gene editing methods. These tools can flip, remove, or insert massive pieces of genetic code in both plants and animals. To prove it works, they engineered rice that's resistant to herbicides by flipping a huge section of its DNA—something that was nearly impossible before.

The study, published online in Cell on August 4, achieves multiple types of precise DNA manipulations ranging from kilobase to megabase scale in higher organisms, especially plants."

Source: Chinese Academy of Sciences Headquarters (5 Aug 2025)

HEALTH

Excessive Ultraprocessed Foods (UPFs) And Poor Nutrition Tied to Poor Health

“Most ultraprocessed foods (UPFs) are characterized by poor nutritional quality, contributing to excessive calories, and are typically high in saturated fats, added sugars and sodium (salt), the combination of which is often abbreviated as HFSS, which contribute to adverse cardiometabolic health outcomes, including heart attack, stroke, obesity, inflammation, Type 2 diabetes and vascular complications.

Observational studies have found links between eating higher amounts of UPFs and an increased risk of cardiovascular disease, chronic illness and mortality.

Emerging evidence also suggests certain additives and industrial processing techniques may have negative health effects.

However, not all UPFs are junk foods or have poor nutritional quality; some UPFs have better nutritional value and can be part of an overall healthy dietary pattern.

Experts recommend multilevel strategies, including more research to uncover how UPFs specifically impact the body, refining dietary guidance to discourage excessive consumption of nutrient-poor UPFs, clarifying the impact of the limited number of UPFs with more favorable nutrition profiles, more research on the health impacts of food additives and evidence-based policies to evaluate and regulate food additives.”

Source: Heart.org (8 Aug 2025)

HEALTHCARE

New Tool Helps Seniors Reduce Unnecessary Medications

"McGill University researchers have developed and are licensing a digital tool to help safely reduce patients' use of medications that may be unnecessary or even harmful to them.

When clinicians review a patient's file, MedSafer flags potentially inappropriate medications. In a new clinical trial, the software helped deprescribe such medications in 36 per cent of long-term care residents, nearly triple as many as when reviews were done without the tool.

“Sometimes we blame aging for memory loss or mobility issues when the real culprit is the medications,” said lead author Dr. Emily McDonald, Associate Professor in McGill's Department of Medicine, Scientist at the Research Institute of the McGill University Health Centre (The Institute) and attending physician at the McGill University Health Centre. “I've seen patients go from barely responsive to having conversations again after stopping a sedating medication.”

Nearly two thirds of Canadian seniors take five or more medications a day, and the number is significantly higher in long-term care, she added.”

Source: mcgill (4 Aug 2025)

HEALTH TECH

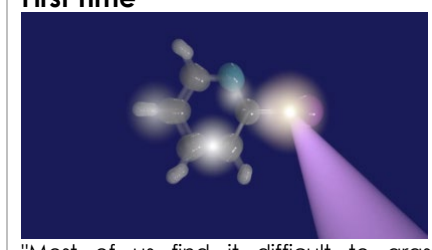
Breakthrough “Smart” Gel Restores Blood Flow and Heals Diabetic Wounds in Days

“A new gel-based treatment could change the way diabetic wounds heal. By combining tiny healing messengers called vesicles with a special hydrogel, scientists have created a dressing that restores blood flow and helps wounds close much faster. In tests, the treatment healed diabetic wounds far quicker than normal, while also encouraging the growth of new blood vessels. Researchers believe this innovation could one day help millions of people with slow-healing wounds caused by diabetes and possibly other conditions.”

Source: Burns (8 Aug 2025)

QUANTUM ATOMS

Scientists Capture the Secret Quantum Dance of Atoms for The First Time



"Most of us find it difficult to grasp the quantum world: According to Heisenberg's uncertainty principle, it's like observing a dance without being able to see simultaneously exactly where someone is dancing and how fast they're moving - you always must choose to focus on one. And yet, this quantum dance is far from chaotic; the dancers follow a strict choreography. In molecules, this strange behavior has another consequence: Even if a molecule should be completely frozen at absolute zero, it never truly comes to rest. The atoms it is made of perform a constant, never-ending quiet dance driven by so-called zero-point energy.

Using the world's most powerful X-ray laser, researchers have captured the hidden, never-ending vibrations of atoms inside molecules. This first-ever direct view of zero-point motion reveals that atoms move in precise, synchronized patterns, even in their lowest energy state.”

Source: Goethe University (11 Aug 2025)

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