

# Weekly Discovery

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1 Dec - 5 Dec 2025

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ACADEMIC PUBLISHING

**Report Reveals Potential of AI To Help Higher Education Sector Assess Its Research More Efficiently and Fairly**



"A new national report has shown for the first time how generative AI (GenAI) is already being used by some universities to assess the quality of their research – and it could be scaled up to help all higher education institutions (HEIs) save huge amounts of time and money.

But the report, led by the University of Bristol and funded by Research England, also reveals widespread scepticism among academics and professionals working in the sector about its usage for this purpose, and highlights the need for national oversight and governance.

The UK's system for assessing the quality of research in higher education institutions (HEIs) is known as The Research Excellence Framework (REF). Its outcomes influence how around £2 billion annually of public funding is allocated for universities' research."

Source: [Eurekalert!](#) (30 Nov 2025)

AGING

**Singapore's Silent Crisis: Is Grandpa Eating Well and Enough?**



"A worrying trend is emerging among Singapore's elderly – four in 10 hospital patients aged 65 and above were found to be at risk of malnutrition in 2024, up from three in 10 in 2022. Even beyond the hospital, 22 per cent of adults aged 60 and above were found to be at moderate to high risk of malnutrition.

Professor Teo Yik Ying, NUS Vice President of Global Health and Dean of the Saw Swee Hock School of Public Health at NUS, delineated the dangers of malnutrition such as increased susceptibility to illnesses, loss of muscle mass, and compromised cognitive functions among others, and discussed the intermingling financial, social, medical and cultural factors that are fuelling this trend.

To tackle this problem, Prof Teo underscored the need for practical, affordable and sustainable solutions coordinated across health, social care and community networks."

Source: [NUS](#) (19 Nov 2025)

AI

**The Next Frontier in AI Isn't Just More Data: Reinforcement Learning Environments Prepare AI for Messy Reality**



"For the past decade, progress in [artificial intelligence](#) has been measured by scale: bigger models, larger datasets, and more compute. That approach delivered astonishing breakthroughs in [large language models](#) (LLMs); in just five years, AI has leapt from models like GPT-2, which could hardly mimic coherence, to systems like GPT-5 that can reason and engage in substantive dialogue. And now early prototypes of [AI agents](#) that can navigate codebases or [browse the web](#) point towards an entirely new frontier.

But size alone can only take AI so far. The next leap won't come from bigger models alone. It will come from combining ever-better data with worlds we build for models to learn in. And the most important question becomes: What do classrooms for AI look like?

In the past few months [Silicon Valley](#) has placed its bets, [with labs investing billions](#) in constructing such classrooms, which are called [reinforcement learning](#) (RL) environments. These environments let machines experiment, fail, and improve in realistic digital spaces."

Source: [IEEE Spectrum](#) (1 Dec 2025)

ARCHITECTURE

**Designing the Reuse Economy: How Architects Can Build Supply Chains, Not Just Buildings**



"Across Europe and beyond, architects are confronting a turning point. As rising emissions targets collide with shrinking material supplies and [the growing urgency of climate commitments](#), the built environment is being forced into a deeper reckoning with how it consumes, circulates, and discards resources. What was once [considered waste is now revealing itself as a dormant architectural archive](#), an urban ecosystem of materials waiting to be reclaimed, revalued, or reimaged. Within this shift, architects are beginning to play a radically different role. Not only as designers of buildings, but also as orchestrators of the flows that sustain them.

This emerging mindset is reshaping the foundations of practice. Instead of depending on long, extractive supply chains, designers are beginning to build their own closed-loop networks, establishing material banks, negotiating deconstruction protocols, and participating in new forms of urban mining

The goal is not merely to reduce waste but to cultivate new economies of continuity, where components move fluidly from one life to the next. It is a quiet but profound cultural shift, signaling a future where architecture is measured not by what it consumes, but by what it can keep in circulation."

Source: [Archdaily](#) (21 Nov 2025)

ARCHITECTURE

**Design Ethos of Subtraction and Addition: 10 Adaptive Reuse Projects for Commercial and Social Spaces in Asia**



"While [adaptive reuse](#) has been increasingly acknowledged as a vital architectural strategy worldwide, [its discourse and implementation in Asia are still expanding](#)—driven by growing ecological awareness and a shifting understanding of architectural knowledge. Rather than accelerating a developmentalist model centered on demolition and new construction, architects today are confronted with a different approach to the built environment: treating the existing structure as a resource—an archive of materials, spatial organizations, and informal histories.

Adaptive reuse is often associated with [the preservation of historic buildings](#) and culturally significant heritage. Yet the vast field of seemingly 'less-valued' structures—abandoned houses, standard yet old dwellings, non-conforming office buildings, and overlooked urban voids—has become ground for experimentation. These sites challenge architects and designers to reconsider prevailing standards of efficiency and market-driven development, and to imagine spatial and ecological practices that avoid the continual loss of embodied material and cultural knowledge inherent in constant rebuilding."

Source: [Archdaily](#) (21 Nov 2025)

DESIGN

**Gaming-inspired Parkinson's keyboard wins 2025 James Dyson Award**



"A therapeutic keyboard for people with Parkinson's and an AI-powered water quality sensor have won this year's [James Dyson Award](#), recognising the best inventions by students and graduates from across the world.

Out of more than 2,100 entries from 28 countries, engineer [Filip Budny's floating WaterSense buoy](#) was selected as the global sustainability winner, while the [OnCue keypad by product designer Alessandra Galli](#) took home gold in the medical category.

Each will receive a prize of £30,000 to help develop their prototype into a sellable, scalable product that can be brought to market.

This year marks the first time that both winning projects integrate artificial intelligence (AI) in some way to analyse data and offer predictions."

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

DESIGN

**Twelve Top Architects and Designers Share Advice for the Younger Generation**



"To round off our [Performance Review](#) series, we asked leading architects and designers for their words of wisdom, including [Daniel Libeskind](#), [Sabine Marcelis](#) and [Lina Ghotmeh](#).

The design and architecture industries are complex, and making a living from them can be daunting.

How should you navigate the industry as a fledgling?

This is the question we posed to industry leaders – people who themselves have built successful businesses.

**Advice from the practical to the existential**

Among the architects featured are deconstructivist powerhouse Libeskind and Stirling Prize winner [Níall McLaughlin](#), who established their eponymous studios in 1989 and 1991 respectively.

We also spoke with architects who have found success more recently, such as Ghotmeh, who was this year named on [Time magazine's list](#) of the world's 100 most influential rising stars.

Top designers who shared their words of wisdom include [Gustaf Westman](#), [Kelly Wearstler](#) and [Tom Dixon](#), who preached "go to parties".

Like when we previously [asked top designers about how they got their breaks](#), we requested that people be as honest as possible."

Source: [Dezeen](#) (28 Nov 2025)

HEALTH

**Polluted Air Quietly Erases the Benefits of Exercise**



"Long-term exposure to polluted air may significantly reduce the positive health effects of regular physical activity, according to new research from an international team that included experts from UCL (University College London).

The study, published in *BMC Medicine*, examined information from over 1.5 million adults who were monitored for more than ten years across several countries, including the UK, Taiwan, China, Denmark and the United States.

Researchers found that people living in areas with substantial air pollution experienced a noticeably smaller reduction in their risk of death during the study period. This applied to deaths from any cause, as well as from cancer and heart disease specifically, although some benefit from exercise still remained."

Source: [ScienceDaily](#) (28 Nov 2025)

LEADERSHIP

**How to Chair a Large Department**

RESEARCH





**If The AI Bubble Bursts, What Will It Mean for Research?**

RESEARCH

**Major AI Conference Flooded with Peer Reviews Written Fully By AI**

SMART CITIES

**Citizens Of Smart Cities Need a Way to Opt Out “Data Walks” Reveal How Residents Feel About Digital Privacy**

 <p>"Most professors who end up leading a department do not have formal training in managing people. Usually we are in the chair's position for two reasons: We met the typical metrics of faculty success, and we volunteered for the position when few others would. Yet trained or not, our single most-important obligation on becoming a department head is managing personnel, and that means <i>a lot</i> of meetings.</p> <p>This fall, as I was compiling tenure-and-promotion cases in my department, I came across an article in <i>The Wall Street Journal</i>, "<a href="#">Your Boss Doesn't Have Time to Talk to You</a>." It noted a decrease in the number of managers, and an increase in the number of employees they supervise. That trend hits middle managers particularly hard since we tend to have more direct reports than senior leaders."</p> <p>Source: <a href="#">Chronicle</a> (31 Oct 2025)</p>	 <p>After years of hype and ballooning investment, the boom in artificial intelligence technology is beginning to show signs of strain. Many financial analysts now agree that there is an '<a href="#">AI bubble</a>', and some speculate that it could finally burst in the next few months.</p> <p>In economic terms, the rise of AI is unlike any other tech boom in history — there is now <a href="#">17 times more investment in AI</a> than in Internet companies before the dot-com crash of the early 2000s. And, valued at around US\$4.6 trillion, the AI company NVIDIA was worth more than the economies of every nation except the United States, China and Germany.</p> <p>But AI is not living up the promise of revolutionizing multiple sectors — nearly 80% of companies using AI found it had had no significant impact on their earnings, according to a <a href="#">report</a> from management consulting firm McKinsey, and <a href="#">concerns over the basic architecture</a> of chatbots is leading scientists to say that AI has <a href="#">the potential to harm their research</a>. These doubts over the technology's utility, and financial viability, is leading analysts and investors to speculate that a crash is coming. Even tech chief executives such as Sam Altman of ChatGPT's parent company OpenAI in San Francisco, California, have admitted that parts of the field are "kind of bubbly right now".</p> <p>So, if a crash is imminent, how will it affect AI research and the scientists and engineers who make it happen?</p> <p>Source: <a href="#">Nature</a>(19 Nov 2025)</p>	 <p>"What can researchers do if they suspect that their manuscripts have been peer reviewed using artificial intelligence (AI)? Dozens of academics have raised concerns on social media about manuscripts and peer reviews submitted to the organizers of next year's International Conference on Learning Representations (ICLR), an annual gathering of specialists in machine learning. Among other things, they flagged <a href="#">hallucinated citations</a> and suspiciously long and vague feedback on their work.</p> <p>Graham Neubig, an AI researcher at Carnegie Mellon University in Pittsburgh, Pennsylvania, was one of those who received peer reviews that seemed to have been<a href="#">produced using large language models (LLMs)</a>. The reports, he says, were "very verbose with lots of bullet points" and requested analyses that were not "the standard statistical analyses that reviewers ask for in typical AI or machine-learning papers."</p> <p>But Neubig needed help proving that the reports were AI-generated. So, he posted on X (formerly Twitter) and offered a reward for anyone who could scan all the conference submissions and their peer reviews for AI-generated text. The next day, he got a response from Max Spero, chief executive of Pangram Labs in New York City, which develops tools to detect AI-generated text. Pangram screened all 19,490 studies and 75,800 peer reviews submitted for ICLR 2026, which will take place in Rio de Janeiro, Brazil, in April. Neubig and more than 11,000 other AI researchers will be attending."</p> <p>Source: <a href="#">Nature</a> (27 Nov 2025)</p>	 <p>"For years, <a href="#">Gwen Shaffer</a> has been leading Long Beach, Calif. residents on "data walks," pointing out public <a href="#">Wi-Fi routers</a>, security <a href="#">cameras</a>, smart water meters, and parking kiosks. The goal, according to the professor of <a href="#">journalism</a> and public relations at <a href="#">California State University, Long Beach</a>, was to learn <a href="#">how residents felt</a> about the ways in which their city collected data on them.</p> <p>She also identified a critical gap in <a href="#">smart city</a> design today: While cities may disclose how they collect data, they rarely offer ways to opt out. Shaffer spoke with <i>IEEE Spectrum</i> about the experience of leading data walks, and about her research team's efforts to give citizens more control over the data collected by public technologies."</p> <p>Source: <a href="#">IEEE Spectrum</a> (28 Nov 2025)</p>
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