

Weekly Discovery

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27 Oct - 31 Oct 2025

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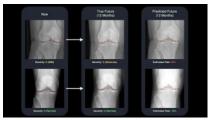
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Al Turns X-Rays into Time Machines for Arthritis Care



Researchers at the University of Surrey developed an AI that predicts what a person's knee X-ray will look like in a year, helping track osteoarthritis progression. The tool provides both a visual forecast and a risk score, offering doctors and patients a clearer understanding of the disease. Faster and more interpretable than earlier systems, it could soon expand to predict other conditions like lung or heart disease.'

Source: Uni of Surrey (22 Oct 2025)

Democratizing Access to Culture: The

<u>cultural</u> <u>center</u> is an architectural

typology that has fascinated architects and

urban planners for decades. Whether due to

its <u>multifaceted program</u>, its <u>often emblematic</u>

scale, or its potential to transform the urban

context in which it is inserted, it is a building

type that carries strong symbolic and

conceptual value. The wide circulation

of <u>international references</u>—many designed

by renowned architects—reinforces the gura

of prestige associated with this program,

frequently seen as a privileged ground for

formal and conceptual experimentation. Not

by chance, cultural center designs are among

the most recurring themes in competitions,

Yet behind this contemporary fascination lies a

complex history in which the notion of space

dedicated to culture has been redefined over

time, gradually taking the form we recognize

today. This ongoing evolution invites us to

reflect not only on the historical path of these

spaces but also on the possibilities that will

Known for their openness and programmatic

diversity, contemporary cultural centers host

exhibitions, performances, workshops, and

community activities in a single place.

However, this is not a new typology.

Historically, scholars argue that cultural spaces

have always existed within civilizations as

places of gathering and knowledge

exchange. Although far from being called

cultural centers, the Library of Alexandria, for example, is often cited as the first expression of this ambition: a complex that brought together a library, observatories, amphitheaters,

exhibitions, and academic studios.

shape their future.

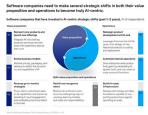
gardens, and temples."

Past, Present, and Future of Cultural

ARCHITECTURE

Centers

The AI-Centric Imperative: Navigating the Next Software Frontier



"The software industry is entering a new era and it may yet prove even more disruptive than the software-as-a-service (SaaS) revolution that preceded it. The emergence of gen Al and, more recently, agentic AI is not just another technology wave; it is a foundational shift redefining what software is, who builds it, who uses it, and how companies are organized and operate.

Gen Al alone is projected to unlock \$4.4 trillion or more in annual value across the global economy, with software companies poised to capture 10 to 15 percent of that total—and agentic AI may well accelerate the speed at which this value is realized. But capturing it is far from guaranteed, and incumbent companies will face heightened competitive intensity and complex new challenges. Some may not survive. Recent moves by Al players such as OpenAI underscore this urgency. By embedding their own Al-powered sales, support, and contract tools directly into workplace processes, these companies could end up competing with the very SaaS players they have been enabling—a shift that may further upend industry dynamics and intensify the pressure on those incumbents."

ASSISTIVE TECHNOLOGY

User-Centered Design Shapes Assistive Tech for Cerebral Palsy: Tailored devices center person's



'Researchers in the U.S. Pacific Northwest recently delivered a piece of <u>assistive</u> technology whose design began with a simple but important question: What will the person using this tech need?

Last month a team of engineers and occupational therapists from Whitworth <u>University</u> in Spokane, Wash. delivered a learning station they'd designed for a first grader with cerebral palsy.

David Schipf, assistant professor of engineering and physics at Whitworth, says the project's success was due to the collaborative efforts between team members—engineers, physical therapists, and occupational therapists—and the child and his family. After multiple consultations with the family, the Whitworth team delivered their system.

"The station is very user-friendly, allowing Ryken to focus on his first-grade studies and putting him at eve-level with those speaking to him." says Schipf. "He will also be able to move throughout the house as needed."

The first grader, Ryken, has a form of cerebral palsy along with other disabilities, which include <u>epilepsy</u>, hearing, and

Ryken's mother had initially contacted Schipf because Ryken was unable to participate fully in his education. And she'd discovered a lack of suitable equipment on the market that Ryken could use to meet his needs.'

Featured Course

Agentic AI: Tools and Strategies for the Super Agent **Future**

38m

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One Year of Agentic AI: Six Lessons from the People Doing the Work



CYBERSECURITY

mouse

firm Omdia.

Thwart the Attacks

Your AI Agent Is Now a Target for

Email Phishing New Tools Can Help

"Email security has always been a cat-and-

and antivirus software is invented to catalog

known viruses and detect their presence in

email attachments and URLs. As viruses morphed into more sophisticated forms

of <u>malware</u>, <u>cybersecurity</u> tools adapted to be

able to scan for and detect these new

threats. Phishing became the next arena,

aiving birth to new tools as well as a whole

new category of defense known as security

awareness training. Now, the bad guys are

attacking Al agents to bypass current security

"Al assistants, copilots, and agents significantly

expand the enterprise attack surface in ways

that traditional security architectures were not

designed to handle," said Todd Thiemann,

Enter a series of Al-based features

at

research

<u>cybersecurity</u> analyst

game. Viruses are

"Are widespread stereotypes accurate or socially distorted? This continuing debate is limited by the lack of large-scale multimodal data on stereotypical associations and the inability to compare these to ground truth indicators. Here we overcame these challenges in the analysis of age-related gender bias, for which age provides an objective anchor for evaluating stereotype accuracy. Despite there being no systematic age differences between women and men in the workforce according to the US Census, we found that women are represented as younger than men across occupations and social roles in nearly 1.4 million images and videos from Google, Wikipedia, IMDb, Flickr and YouTube, as well as in nine language models trained on billions of words from the internet. This age gap is the starkest for content depicting occupations with higher status and earnings. We demonstrate how mainstream algorithms amplify this bias. A nationally representative pre-registered experiment (n = 459) found that Googling images of occupations amplifies age-related gender bias in participants' beliefs and hiring preferences. Furthermore, when generating and evaluating resumes, ChatGPT assumes that women are younger and less experienced, rating older male applicants as of higher quality. Our study shows how gender and age are jointly distorted throughout the internet and its mediating algorithms, thereby revealing critical challenges and opportunities in the fight against inequality."

Source: Mc Kinsey (Sep 2025)

ARCHITECTURE

Eight Closed-Off Homes Concealed Behind Windowless Facades



"In our latest roundup, we look at houses where solid, windowless walls create privacy and intrigue by hiding interior spaces from the outside world.

While these homes may have austere streetfacing exteriors that give little away, their windowless facades block out distractions from outside and help create a feeling of sanctuary inside.

Read on for eight homes concealed behind windowless facades."

Source: Dezeen (25 Oct 2025)

DESIGN

Designers Most Likely Among Creatives to Believe Al Dulls Creativity



"Inspired by the simplicity of walkie talkies, design agency Pentagram has updated tech company Karri's smartphone for kids with new features intended to make communication "as intuitive as possible".

Designed for ages five to the Karri messenger aims to give young people a way to chat with loved ones without all the distractions that come with standard smart phones.

Children are able to use the SIM-operated device to send voice notes to parents or guardians, who can then listen and respond via the Karri app on their own smartphones.

The app can also show the location of a child, plus the Karri's battery level and network status. There's additionally the option to set up safe areas or "geo fences" for the child, and be notified should they move beyond these boundaries.

An enhanced version of the device is set to launch in early 2026."

Source: Mc Kinsey (16 Oct 2025)

needs, not just techno whizbang



impairments.

for Proofpoint Prime Threat Protection that were introduced at the company's Proofpoint Protect 2025 event in September. They thwart the efforts of hackers to subvert the actions of Al agents by scanning for potential threats before email messages arrive at an inbox."

Source: Archdaily (26 Oct 2025)

Source: <u>IEEE Spectrum</u> (24 Oct 2025)

Source: <u>IEEE Spectrum</u> (27 Oct 2025)

Source: Dezeen (27 Oct 2025)

Universities Are Embracing AI: Will Students Get Smarter or Stop



"When students entered Tsinghua University in Beijing this year, one of the first representatives they met wasn't a person. Admission letters to the prestigious institution came with an invitation code to an artificial-intelligence agent. The bot is designed to answer students' questions about courses, clubs and life on campus.

At Ohio State University in Columbus, students this year will take compulsory AI classes as part of an initiative to ensure that all of them are 'AI fluent' by the time they graduate. And at the University of Sydney, Australia, students will take traditional, in-person tests to prove that they have learnt the required skills and not outsourced them to AI.

All this is part of a sea change sweeping through campuses as universities and students scramble to adapt to the use of generative Al tools such as ChatGPT. These tools can, within seconds, analyse complex information, answer questions and generate polished essays some of the exact skills that universities have conventionally taught. Eighty-six per cent of university students were regularly using AI in their studies in 2024, according to one global survey1 — and some polls show even more. "We are seeing students become power users of these tools," says Marc Watkins, a researcher who specializes in Al and education at the University of Mississippi in Oxford.

To some, Al presents an exciting opportunity to improve education and prepare students for a rapidly changing world. Universities such as Tsinghua and Ohio State are already weaving Al into their teaching — and some studies hint that Al-powered tools can help students to learn. A randomized controlled trial2 involving physics undergraduates at Harvard University in Cambridge, Massachusetts, suggested that those who used a custom-built Al tutor learnt more in less time than did students who were taught by humans alone."

Source: Nature (21 Oct 2025)

Running Fixes What Junk Food Breaks



in the Brain

"New research reveals that exercise counteracts the mood-damaging effects of a Western-style diet through specific gut and hormonal mechanisms. Running restored metabolites tied to mental well-being and balanced key hormones like insulin and leptin. However, poor diet limited the brain's ability to generate new neurons, showing diet still matters for full brain benefits."

Source: Genomic Press (21 Oct 2025)

Scientists Turn Flower Fragrance into a



Mosquito Killer

"A team of researchers has developed a floralscented fungus that tricks mosquitoes into approaching and dying. The fungus emits longifolene, a natural scent that irresistibly draws them in. It's harmless to humans, inexpensive to produce, and remains potent for months. This innovative biological control could be crucial as mosquitoes spread with climate change.

The scientists were inspired by natural fungi that emit a pleasant chemical known as longifolene, which they discovered could attract mosquitoes. Building on that idea, they created a fungus that acts like a lethal perfume for the pests, offering a promising tool against malaria, dengue, and other deadly diseases that are becoming increasingly resistant to chemical pesticides. Their findings were published in Nature Microbiology on October 24, 2025."

Source: University of Maryland (27 Oct 2025)

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Virtual Reality Helps People
Understand and Care About Distant
Communities



'For many of us, climate change feels like a distant threat - damage that happens in the future somewhere far away to people we know little about. A new Stanford Universityled study reveals how virtual reality can close that distance, enabling users to explore faraway places, develop a sense of attachment to those places, and care more about how a warming world is wreaking havoc on people's lives. The findings, published this week in Scientific Reports, show that VR experiences significantly reduce people's indifference to climate changedriven damages in faraway places compared to viewing static images. The findings demonstrate promise for bridging partisan gaps on the issue, and inspiring people to take constructive action, such as supporting pro-environment organizations and policies.

"Virtual reality can make faraway climate impacts feel immediate and personally relevant," said study lead author Monique Santoso, a PhD student in communication at the Stanford School of Humanities and Sciences. "By helping people form emotional attachments to distant places, VR fosters constructive emotions that motivate engagement rather than paralyzing fear."

Source: Eurekalert! (24 Oct 2025)

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