

AI Advances Scientific Discovery

with all the hype and mega data centers, AI is finding its use in scientific analysis



CLAYTON MAN
MAY 17, 2025



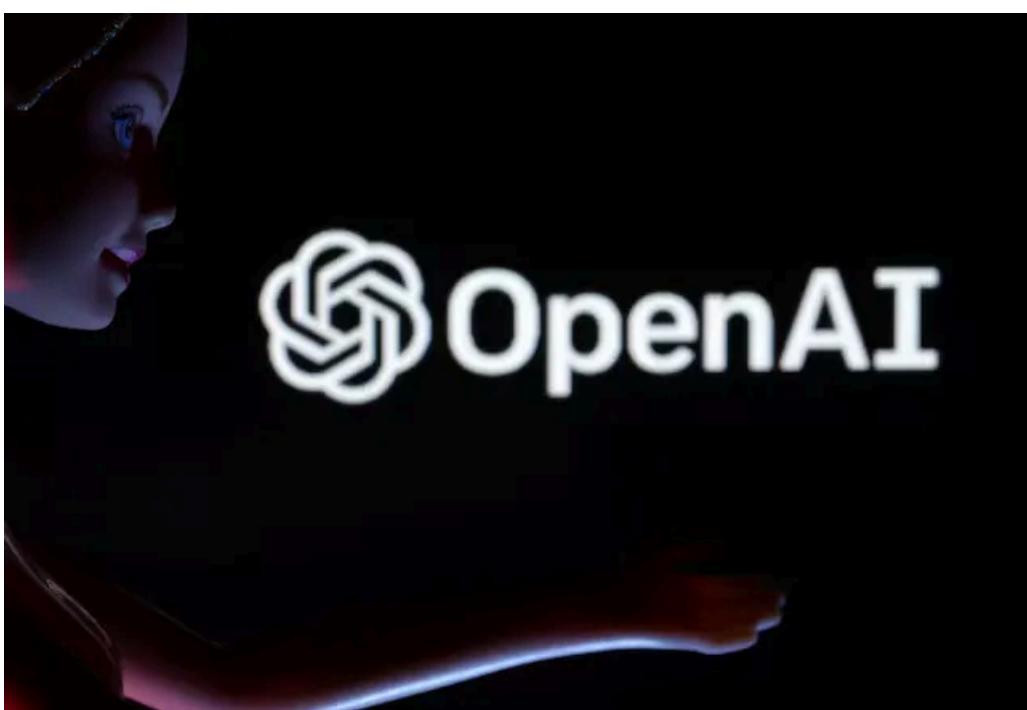
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1. Tech



China's defense industry is experiencing a transformative moment akin to the DeepSeek AI breakthrough. Recent reports highlight China's J-10C fighter jets' success in combat scenarios, notably in the India-Pakistan conflict, where Pakistan claimed to have downed multiple Indian aircraft using these Chinese-made jets. This development has prompted investors to reassess China's military capabilities and its potential to emerge as a significant arms exporter. The success of Chinese defense technology is challenging the traditional dominance of Western military suppliers and may reshape global defense dynamics.



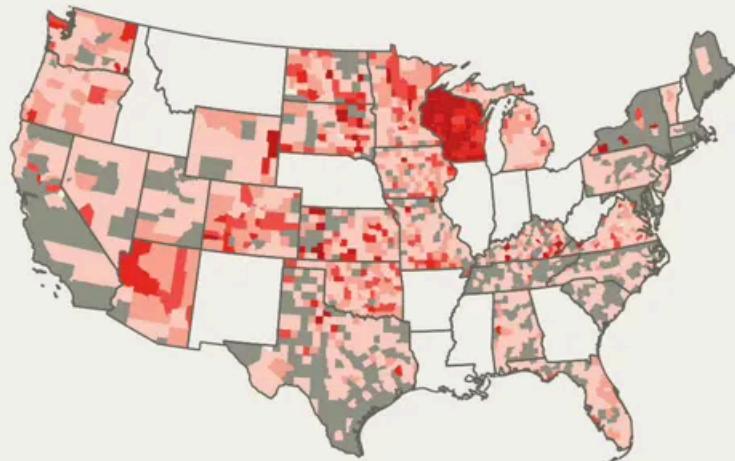
OpenAI is collaborating with the United Arab Emirates to develop a massive 5-gigawatt data center campus in Abu Dhabi, potentially one of the world's largest. This initiative is part of OpenAI's "Stargate" project, aiming to expand AI infrastructure globally. The project is led by Emirati AI firm G42, with support from U.S. tech giants like Microsoft, Nvidia, and Cisco. The data center will span approximately 10 square miles and consume power equivalent to five nuclear reactors. This development aligns with a broader U.S.-UAE agreement to establish the largest AI campus outside the U.S., reflecting the UAE's ambition to become a global AI hub.

2. Global



On May 12, 2025, US President Donald Trump signed Executive Order 14297 to cut U.S. prescription drug prices by up to 90%, using a “most-favored-nation” pricing strategy—matching the lowest prices paid in developed countries. The order requires pharmaceutical companies to comply within 30 days, targeting Medicare, Medicaid, and private markets. Trump cited a friend’s comparison of U.S. and U.K. prices as inspiration. The move sparked backlash in Europe and legal concerns over trade and regulatory feasibility. Critics warn it may disrupt innovation, while Trump framed it as a bold step to make medicine more affordable for Americans facing high healthcare costs.

Measles vaccination rate in kindergarteners



In 2025, the United States is grappling with its most severe measles outbreak in decades, recording over 1,000 cases across 31 states. Texas has been the hardest hit, with 718 cases, particularly concentrated in Gaines County. Health experts warn that declining vaccination rates, fueled by misinformation, threaten to reverse progress made since measles was declared eliminated in the U.S. in 2000. The Centers for Disease Control and Prevention (“CDC”) emphasizes the critical need for increased MMR vaccination coverage to prevent measles from becoming endemic again.

3. Economy & Finance



On May 16, 2025, Moody's downgraded the U.S. government's credit rating from Aaa to Aa1, citing escalating federal debt, rising interest costs, and persistent political gridlock. This marks the first time since 1919 that Moody's has removed its top-tier rating for the U.S., following similar actions by S&P in 2011 and Fitch in 2023. Moody's projects the national debt could reach 134% of GDP by 2035, fueled by ongoing deficits and potential extensions of Trump-era tax cuts.

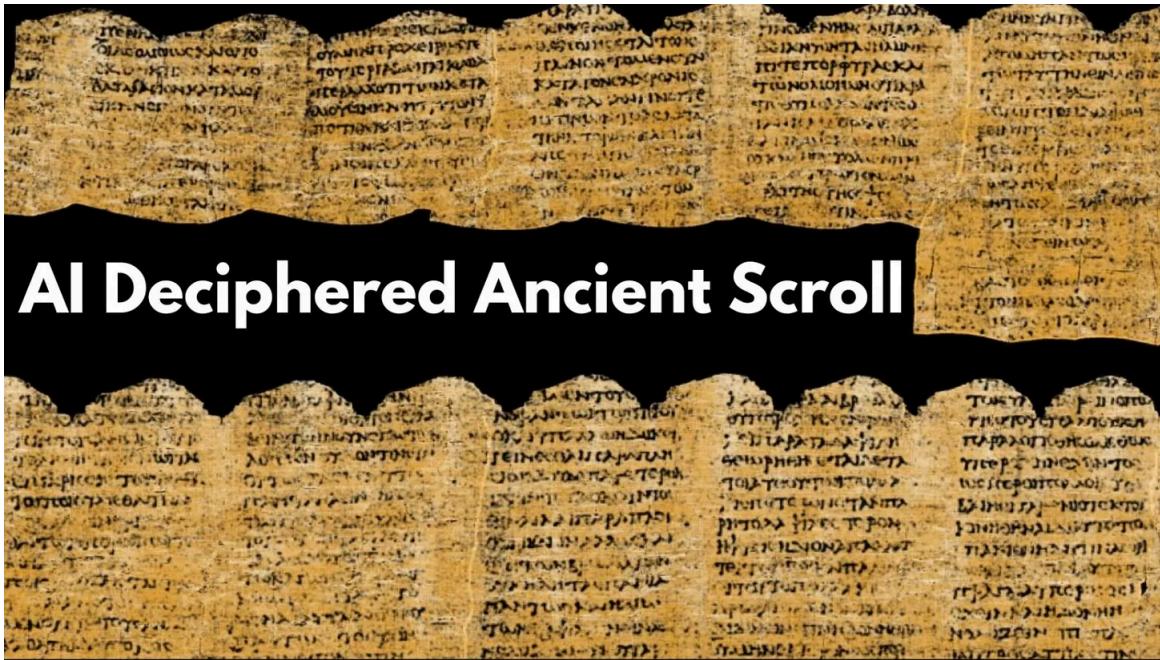


Starbucks is exploring strategic options for its operations in China, including the potential sale of a stake in its business. The company has reportedly initiated discussions with private equity firms and technology companies. Starbucks operates approximately 6,804 stores across mainland China, which makes China Starbucks' second-largest market globally, following the United States. It is facing stiff competition from local rival Luckin Coffee, which has surpassed Starbucks in the number of stores, with over 16,000 outlets as of 2024.

4. Science



Scientists have uncovered amber deposits on the seafloor near Japan's **Hokkaido Island** that may provide evidence of a massive tsunami occurring approximately **115 million years ago**. This amber, fossilized tree resin, was found within marine sediment layers, suggesting it was swept into the ocean by a powerful wave event. The amber exhibits unique deformation patterns, such as flame structures and flattened bands, indicating it was still soft when transported and rapidly buried. These findings offer a rare glimpse into ancient tsunami activity and its impact on prehistoric coastal forests.



Researchers have made a significant breakthrough in deciphering ancient scrolls from **Herculaneum**, a Roman town destroyed by **Mount Vesuvius** in 79 CE. Using advanced X-ray imaging and artificial intelligence, they identified the title of a previously unread scroll as "**On Vices**." **The Vesuvius Challenge**, a global competition launched

in 2023, has facilitated this progress by encouraging citizen scientists to develop AI tools for reading the charred papyri, offering over **\$1 million** in prizes.

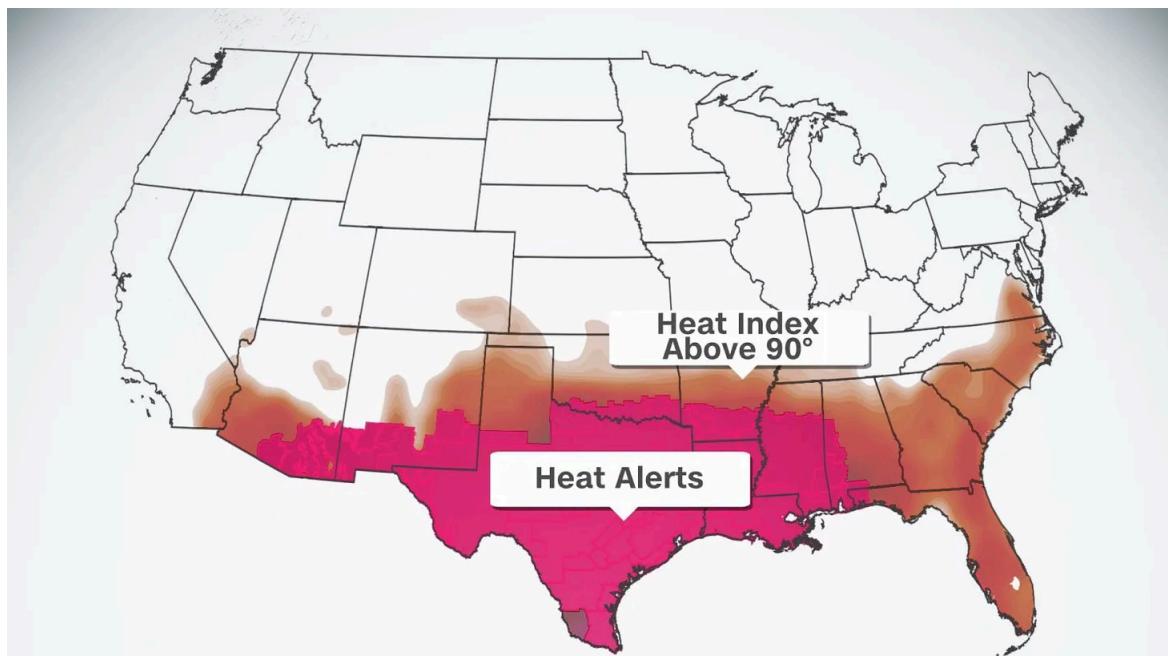


Paleontologists have uncovered a remarkable **506-million-year-old** predator named *Mosura fentoni* in Canada. This tiny, moth-like arthropod, approximately the size of a human index finger, exhibits unique features that set it apart from other Cambrian-era creatures. Notably, it possessed three eyes, spiny jointed claws, a circular mouth lined with teeth, and a body equipped with swimming flaps along its sides. The discovery of *Mosura fentoni* provides valuable insights into the diversity and complexity of early arthropods during the **Cambrian** period, when most major animal groups first appeared during what is called the **Cambrian Explosion**.

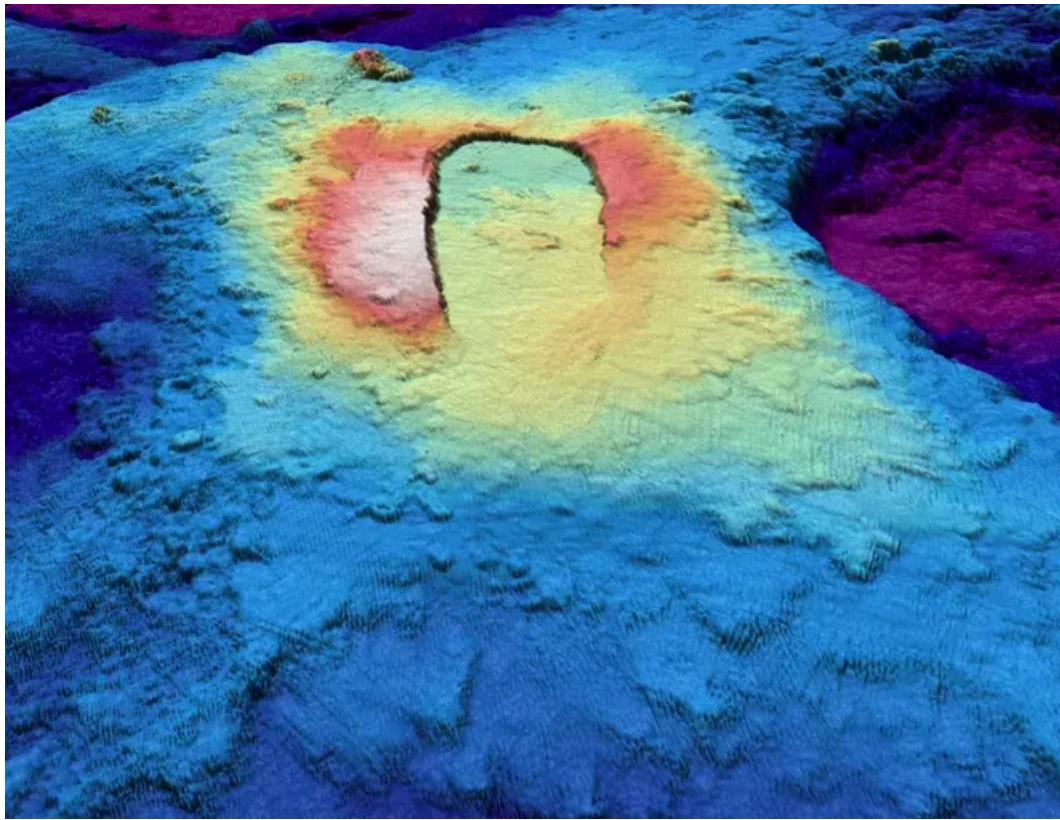


Researchers at UC San Diego have uncovered that the PHGDH gene, previously identified as a biomarker for Alzheimer's disease, actually contributes to its onset. Using artificial intelligence (AI), the team discovered that PHGDH activates a pathway disrupting gene regulation in brain cells, leading to Alzheimer's development. This "moonlighting" role was revealed through AI-assisted 3D structural analysis. Additionally, the AI-guided compound NCT-503 was found to inhibit this pathogenic activity, offering a potential therapeutic avenue. Around 30-50% of people aged 85 and older in the US may develop Alzheimer's.

5. Nature, Environment



Texas is currently experiencing an unprecedented early-season heat wave, with temperatures soaring into the upper 90s and heat index values exceeding 100°F in cities like **Houston**, **Austin**, and **San Antonio**. This extreme heat, more typical of August than May, is attributed to a strong high-pressure system over the Gulf of Mexico. Houston is on track for one of its warmest Mays since records began in 1889, with average highs placing it in the top 10% of warmest Mays. San Antonio faces worsening drought conditions, having recorded only **0.19 inches** of rainfall this month compared to the average **4.4 inches**.



Axial Seamount, an underwater volcano located approximately 300 miles off Oregon's coast, is exhibiting signs of an impending eruption—the first since 2015. Scientists monitoring the seamount have recorded over 1,000 daily earthquakes in late March and early April 2025, indicating magma movement beneath the seafloor. The volcano's inflation has reached nearly 90% of its pre-2015 eruption level. While the eruption poses no threat to human populations due to its depth and distance from shore, it offers researchers a unique opportunity to study volcanic processes and their impact on deep-sea ecosystems in real time.

6. Lifestyle, Entertainment, Culture



Percival Everett's novel *James* won the 2025 Pulitzer Prize for Fiction, offering a profound reimagining of Mark Twain's *Adventures of Huckleberry Finn*. Told from the perspective of Jim, the enslaved character who accompanies Huck on his journey down the Mississippi River, the novel shifts the focus to explore Jim's internal world, giving him a much deeper, more complex voice than in Twain's original. Jim becomes the protagonist of his own story, grappling with his experiences of enslavement, freedom, and race. The novel has garnered widespread acclaim, including the National Book Award and the Kirkus Prize, and has been recognized as one of the best books of 2024 by various publications.

7. Sports



In the 2024–25 season, FC Barcelona achieved a historic feat by defeating Real Madrid in all four *El Clásico* (which refers to any football match between the two most well-known Spanish soccer clubs, Real Madrid and FC Barcelona) encounters, a first since the 1982–83 season. Under the guidance of coach Hansi Flick, Barcelona secured victories in the Spanish Super Cup, Copa del Rey, and La Liga, all at Real Madrid's expense. The final league encounter, held on May 11, 2025, ended in a thrilling 4–3 win for Barcelona. Raphinha emerged as the top scorer in these fixtures, netting five goals across the four matches. Notably, young prodigy Lamine Yamal scored in the May 11 match, becoming the youngest player to ever score in an El Clásico. Despite a hat-trick from Kylian Mbappé, Real Madrid's defense faltered, allowing Barcelona to clinch the victory.



Barcelona clinched the 2024–25 La Liga title with a 2–0 victory over Espanyol in the Catalan derby on May 15, 2025. Barcelona's 17-year-old prodigy, Lamine Yamal, opened the scoring in the 53rd minute with a brilliant solo effort. Espanyol's hopes were dashed when Leandro Cabrera received a red card in the 80th minute. In stoppage time, Yamal delivered a precise pass to Fermín López, who calmly finished into the bottom corner, securing Barcelona's 28th league title (its arch-rival Real Madrid has 36 La Liga titles).



On May 13, 2025, one of Italy's historic football clubs, **Sampdoria**, was relegated to Serie C for the first time in its 78-year history after a goalless draw against **Juve Stabia**. This marked a dramatic fall for the club, which had previously won the Serie A title in 1991 and reached the European Cup final in 1992. Gullit, the Dutch football legend, joined Sampdoria toward the end of his illustrious playing career in 1993. Despite multiple managerial changes during the season, the team finished 18th in Serie B, sealing their descent into the third tier of Italian football.



In the NBA playoffs, the **New York Knicks** defeated the **Boston Celtics** 119–81 in Game 6 on May 16, advancing to the Eastern Conference Finals for the first time since 2000. The Knicks will face the **Indiana Pacers** in a rematch of the 2000 East Finals. The **Denver Nuggets** extended their series against the **Oklahoma City Thunder** with a 119–107 win in Game 6 on May 15. **Nikola Jokić** led the Nuggets with 42 points and 22 rebounds. The series is now tied 3–3, with Game 7 scheduled for May 18.

As of May 17, 2025, the **Giro d'Italia** is intensifying, with **Primož Roglič** leading the general classification after Stage 7. The **168 km** stage from Castel di Sangro to Tagliacozzo featured a challenging 12 km climb, where **Juan Ayuso** of **UAE Team Emirates** secured his first Grand Tour stage win, finishing four seconds ahead of Roglič. Despite Ayuso's victory, Roglič reclaimed the maglia rosa, leading by a narrow margin. **Egan Bernal**, continuing his comeback, finished third, while **Jai Hindley** was forced to abandon the race due to a serious crash. The race continues until **June 1**, with **21 stages** and three rest days, concluding in Rome.

8. This Day in History

On May 17, 1900, L. Frank Baum's *The Wonderful Wizard of Oz* was first published by the George M. Hill Company in Chicago. This marked a significant moment in American literature, introducing readers to the enchanting Land of Oz and its memorable characters: Dorothy, the Scarecrow, the Tin Woodman, and the Cowardly Lion. The book was illustrated by W.W. Denslow, whose artwork became iconic in its own right. The initial print run of 10,000 copies sold out quickly.

9. Oddities

Magna Carta is an important historical document signed in 1215 by **King John of England**, which established the principles that limited the power of the monarchy. **Harvard Law School's** library acquired a document in **1946**, believed to be a 1327 copy of the Magna Carta, for **\$27.50**. Recent research by British historians has confirmed it is actually an original, one of only seven issues known to survive. Another original Magna Carta from 1297 sold at auction for **\$21.3 million** in 2007.

10. Funny

Q: Why did the witches' team lose the baseball game?

A: Their bats flew away.

11. Previous Issues

May 11, 2025, [Blaze of Glory & Sound of Silence](#)

May 3, 2025, [Hello Darkness My Old Friend](#)

April 26, 2025, [A Tale of Two Nations](#)

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