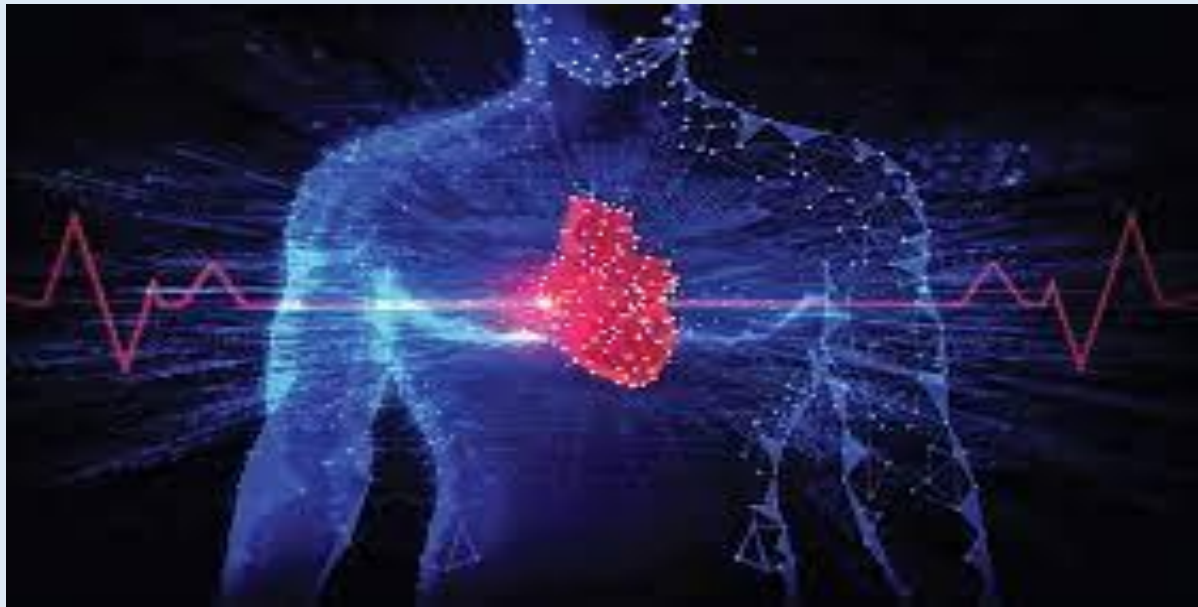




SECTION 1 – TECH BUZZ

ARTIFICIAL INTELLIGENCE



AI Predicts Risk Of Fatal Heart Attacks

The inaugural global trial of an artificial intelligence (AI) tool designed to predict the 10-year risk of fatal heart attacks has demonstrated that enhanced treatment could benefit approximately 45% of patients experiencing chest pain. The study, conducted by researchers affiliated with the University of Oxford and supported by the British Heart Foundation, revealed its findings at the American Heart Association's scientific session.

- Examining data from over 40,000 individuals undergoing routine cardiac computed tomography (CT) scans across eight UK hospitals, the trial focused on identifying narrowings or blockages in coronary arteries.
- Participants were monitored for a median duration of 2.7 years. Researchers highlighted that in about three-quarters of cases where individuals undergo cardiac CT scans, there is no clear indication of significant narrowings, leading to reassurance and discharge. Unfortunately, a considerable number of these individuals later experience heart attacks due to small, undetectable narrowings that may lead to arterial blockages when inflamed.

- As part of the trial, researchers deployed a novel AI tool trained on data related to changes in fat surrounding inflamed arteries, indicative of risks such as heart attacks, as well as information on artery narrowings and other clinical risk factors. Testing the AI tool on an additional 3,393 patients over 7.7 years demonstrated its ability to independently and accurately predict the risk of cardiac events.
- Based on their findings, the researchers estimated that implementing this technology in the UK could result in a more than 20% reduction in heart attacks and an 8% decrease in cardiac deaths and strokes among users. Considering that cardiovascular diseases accounted for 32% of global deaths in 2019, with 85% attributed to heart attacks and strokes, the potential impact of this AI tool on a global scale is substantial.
- Looking forward, this technology holds promise for countries like India, where non-communicable diseases, particularly cardiovascular diseases, contribute significantly to the mortality rate. Dr. Jaideep Menon, an adult cardiologist at Amrita Hospital in Kochi, emphasized the potential of the AI-enabled CT coronary angiogram to reduce heart attacks by 20% and deaths by 8%, marking a significant advancement in cardiovascular treatments.
- Explaining the functioning of the tool, Dr. C. Sridevi, a consultant cardiologist at DPU Private Super Speciality Hospital in Pune, clarified that the AI tool measures coronary plaque burden on cardiac CT scans to predict heart attacks. The tool's capability to estimate plaque burden in CTA images in just five to six seconds, compared to the manual process taking 25-30 minutes, underscores its efficiency.
- Dr. Komal Pawar, a consultant cardiologist at SRV Hospital in Mumbai, emphasized the importance of early detection facilitated by AI tools. Detecting potential heart issues early allows for targeted interventions, such as lifestyle modifications or medication, reducing the risk of fatal heart attacks. As AI tools continue to evolve, the potential to save lives globally enters a transformative era in cardiovascular health and preventive medicine.

IndiGo AI Bot Efficiency

IndiGo has recently implemented an AI chatbot to streamline customer service and simplify the booking process through natural language interactions, according to the airline. With an extensive 1.7 trillion parameters, the AI bot is capable of effortlessly addressing a wide range of frequently asked questions.

- The airline highlighted that its data scientists conducted research on Generative Pre-trained Transformers (GPT) and employed advanced prompt engineering techniques to program the bot. This approach enables the AI to emulate human behaviour, respond to emotions, and inject humour into its interactions.
- During the soft launch, the AI chatbot demonstrated impressive results, revealing a substantial 75% reduction in the workload of customer service agents. This outcome underscores the efficiency and effectiveness of the bot in handling customer inquiries and concerns.

- The chatbot, named 6Eskai, enhances the booking experience by guiding customers through the entire process using natural language conversations. The seamless end-to-end booking journey aims to make the overall experience more user-friendly and efficient.
- It's worth noting that many airlines are increasingly adopting Artificial Intelligence (AI) solutions to enhance various aspects of their operations, demonstrating the industry's ongoing commitment to leveraging innovative technologies for improved customer service and operational efficiency.

StableRep

OpenAI's DALL-E 3 made waves upon its launch by showcasing remarkable advancements in generating highly detailed images. This breakthrough was attributed to the utilization of synthetic images in the model's training process. Building on this innovative approach, a collaborative effort between researchers from MIT and Google has introduced an expansion to the concept, specifically targeting the widely used open-source text-to-image model, Stable Diffusion.

- Outlined in their recently published paper, the researchers introduce a novel methodology termed StableRep. This approach leverages millions of labeled synthetic images to enhance the quality of image generation. Described as a "multi-positive contrastive learning method," StableRep treats multiple images generated from the same text prompt as positives for one another, thereby optimizing the learning process.
- In practical terms, an AI image generation model employing StableRep would scrutinize various renditions of, for instance, a landscape. By cross-referencing them with all relevant textual descriptions, the model gains insights into nuances, resulting in the creation of highly detailed images.
- StableRep's prowess was demonstrated when applied to Stable Diffusion, surpassing rival image generation models like SimCLR and CLIP, which were trained using identical text prompts and corresponding real images.
- Notably, StableRep achieved a linear accuracy of 76.7% on ImageNet classification with a Vision Transformer model. Further enhancements were observed when incorporating language supervision, with StableRep, trained on 20 million synthetic images, outperforming CLIP, trained on 50 million real images.
- Lead researcher Lijie Fan, a doctoral candidate at MIT, emphasized the superiority of their technique, emphasizing that it delves deeper into the conceptual aspects of images rather than merely processing pixels. However, it's essential to acknowledge that StableRep has limitations, including slow image generation and potential confusion in cases of semantic mismatches between text prompts and resultant images.
- While StableRep opens new avenues for image generation, it necessitates an initial round of training on real data for its underlying model, Stable Diffusion. Consequently, the process of creating images using StableRep may be time-consuming and potentially more expensive.
- For those interested in exploring StableRep, the tool is accessible on GitHub. Importantly, it is available for commercial use under the Apache 2.0 License, granting users the freedom to utilize and create derivative works.

- Adhering to the license requirements, users must provide a copy of the Apache License with any redistributed or derivative work and include a notice of changes. Additionally, the license includes a limitation of liability, absolving contributors of responsibility for damages arising from the use of the licensed work.

Netweb AI Partners with NVIDIA

Netweb Technologies India Limited (Netweb) has recently revealed its role as a manufacturing partner for the groundbreaking NVIDIA Grace CPU Superchip and GH200 Grace Hopper Superchip MGX server designs. Under its Tyrone range of AI systems, Netweb is set to construct and deliver over ten server variations, tailored to cater to an extensive array of AI and high-performance computing (HPC)/supercomputing applications.

- Leveraging the modular reference design of NVIDIA MGX, Netweb's AI systems are strategically designed to address intricate workloads in HPC, data science, large language models, edge computing, enterprise AI, and design and simulation. This product line is engineered to seamlessly handle diverse concurrent workloads such as AI training, inference, and 5G within a single system, while simultaneously ensuring smooth transitions for future hardware upgrades.
- Sanjay Lodha, Chairman and Managing Director of Netweb, emphasized the company's commitment to driving cutting-edge technology products for the Make-in-India initiative. Acknowledging NVIDIA's leadership in AI solutions, Lodha expressed confidence in India's potential to harness AI growth, attributing the success of generative AI to robust backend infrastructure and capabilities. He commended NVIDIA's Make-in-India initiative as a significant stride toward bringing locally manufactured, state-of-the-art technologies in line with global standards.
- Vishal Dhupar, Managing Director for South Asia at NVIDIA, highlighted the pervasive influence of artificial intelligence across industries and the challenges faced by enterprises in establishing cost-effective AI infrastructure. Dhupar lauded Netweb's Tyrone AI systems, powered by NVIDIA MGX, as a solution poised to address these challenges. The systems offer flexibility for various applications, including generative AI, speech analytics, text analytics, and automation.
- The collaboration between Netweb and NVIDIA is positioned to unlock the immense potential of AI in India and the Asia-Pacific region. Netweb's AI systems, featuring NVIDIA MGX, align with India's 'Make in India' mission and contribute to building a local ecosystem capable of meeting the demands for AI and accelerated computing applications from both governmental and private entities.
- As evidenced by recent announcements from major Indian corporations to develop AI infrastructure domestically, there is a growing recognition of the importance of fostering indigenous capabilities. Netweb's NVIDIA MGX platform-based portfolio is poised to play a crucial role in establishing a sovereign AI infrastructure for India and other nations, thereby meeting the rising demands and potential of the AI landscape.

APP DEVELOPMENT

Pixel 8 Pro AI Update

Pixel 8 Pro users are in for an exciting update as a new Google app named AI Core is rolling out today. This essential background service is pivotal in fueling AI-driven functionalities throughout the Android ecosystem, ensuring that these features remain current while extending AI capabilities to various applications.

- Initially introduced with the Android 14 update, AI Core has been a consistent presence on Pixel phones and tablets. However, the latest announcement marks the first official update for this application. The version has been upgraded from 0.release.539035001 to 0.release.582652206, and as of now, it is specifically tailored for Pixel 8 Pro devices running stable and beta versions (QPR1 and QPR2) of the Android 14 builds. Regrettably, this update is not yet accessible for Pixel 8 or older Pixel devices.
- Although users won't directly interact with AI Core, its significance lies in its role of delivering AI-powered experiences on the Pixel 8 Pro. Operating predominantly in the background, AI Core contributes to various features such as automatic scene detection for the camera, improved Google Assistant responses, and personalized recommendations. These features are often highlighted as exclusive smart offerings that distinguish the Pixel 8 Pro from other smartphones.
- Beyond the mentioned features, AI Core is also responsible for managing on-device AI models that drive functionalities like Magic Eraser and Photo Unblur. These models receive constant updates to enhance performance, and AI Core ensures that your device is equipped with the latest models.
- For Pixel 8 Pro users, it is recommended to visit the Google Play Store to manually apply this update. However, the AI Core update will also be delivered automatically to your device within the next few days. With this update, your Pixel 8 Pro is poised to offer an even more seamless and intelligent user experience, leveraging the latest AI advancements from Google.

GADGETS

Samsung Galaxy S24

The Samsung Galaxy S24 series, comprising the Galaxy S24, Galaxy S24+, and Galaxy S24 Ultra, is anticipated to make its official debut early next year. Rumors have circulated that Samsung is set to integrate advanced AI functionalities into these flagship smartphones, and recent leaks are lending further credibility to these speculations.

- The South Korean tech giant has reportedly submitted trademark applications for 'AI Phone' and 'AI Smartphone,' suggesting a strategic move towards branding its upcoming devices as AI-focused.
- According to a report from Galaxyclub, Samsung's trademark applications for AI Phone and AI Smartphone indicate that the Galaxy S24 might be marketed under the banner of an AI Phone.

- The company is actively pursuing trademarks for brand names and logos like Magic Pixel, Flex Magic, and Flex Magic Pixel, with a focus on augmented reality (AR) products, smartphone displays, and televisions. Notably, there is a specific emphasis on AR glasses in South Korea. In recent months, the brand has also filed trademark applications for other product categories, including smart rings and AR glasses.
 - In a separate development, Twitter tipster SuperRoder (@RoderSuper) has disclosed information suggesting that the display of the Galaxy S24 Ultra will not be entirely flat, contrary to earlier beliefs.
 - Instead, it is reported to feature a subtle curvature of 0.3-0.4mm on the bezel. The sizes of the top and bottom bezels are expected to be identical, comprising half the dimensions of the Galaxy S23 Ultra. Moreover, the left and right bezels are anticipated to be consistent with those of its predecessor. This revelation contradicts previous rumors of a flat back panel and display for the upcoming flagship.
 - The anticipated announcement date for the Galaxy S24 series is January 17 next year. These smartphones are expected to be powered by the "Snapdragon 8 Gen 3 SoC for Galaxy," with the Galaxy S24 and Galaxy S24+ potentially utilizing Exynos in select global markets. Notably, the lineup might feature Titanium frames instead of aluminum.
 - The Galaxy S24 Ultra is rumoured to be Samsung's inaugural Generative AI phone, incorporating a new EV battery technology to enhance battery life. As anticipation builds for the official unveiling, enthusiasts are eager to witness the integration of advanced AI features and design innovations in Samsung's upcoming flagship smartphones.
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SECTION 2 – GLOBAL INFO

MIDDLE EAST

IRAN

Iranian President Ebrahim Raisi was notably absent from a scheduled summit in Ankara on Tuesday, an event that Turkish President Recep Tayyip Erdogan had previously mentioned to reporters.

- However, Tehran had not officially confirmed the visit, adding an element of confusion. This absence highlights ongoing tensions between the two regional powers, despite their shared perspectives on the Israel-Hamas conflict.
- The Turkish presidency said that Erdogan had no scheduled meetings on Tuesday but did not clarify whether the Iranian president's visit had been canceled or postponed. Erdogan had initially revealed Raisi's planned official visit during his return flight from a summit in Riyadh on November 11, where both leaders were present.

- "Iranian President Ebrahim Raisi is coming to us on the 28th of the month," Erdogan had announced to reporters on the flight. This information had been disseminated by Turkey's state media.

EUROPE

HUNGARY

In an effort to alleviate escalating tensions, EU chief Charles Michel engaged in a meeting with Prime Minister Viktor Orban. The Hungarian leader, adopting an increasingly confrontational stance, had been issuing threats to impede crucial decisions related to Ukraine. The discussions, lasting over two hours, were deemed "useful" by Orban, who refrained from providing further details, according to an EU official.

- Viktor Orban, known for his close ties to the Kremlin, has been wielding the prospect of a veto at the upcoming EU summit in December. His aim is to obstruct financial assistance to Ukraine, a nation grappling with the aftermath of war, and to thwart Ukraine's aspirations to join the European Union.
- The talks between Michel and Orban delved into the content of a letter from the Hungarian Prime Minister, sent the previous week, urgently calling for a reevaluation of the bloc's strategy concerning Ukraine, as per the official.
- Brussels and Budapest find themselves in disagreement on a range of issues, encompassing migration, judicial reform, human rights, and Ukraine.
- Orban's current move involves an assertive eurosceptic advertising campaign featuring posters that target European Commission President Ursula von der Leyen. This latest development underscores the deepening discord between Hungary and the European Union on multiple fronts.

GREECE

Greek Prime Minister Kyriakos Mitsotakis expressed his dissatisfaction with the abrupt cancellation of a scheduled bilateral meeting with his UK counterpart, Rishi Sunak. The meeting, intended to address the longstanding dispute over the Parthenon Marbles, was set to take place in London, where Mitsotakis had been visiting since Sunday.

- However, news of the cancellation surfaced late Monday, seemingly stemming from a disagreement over the so-called Elgin Marbles.
- In a concise statement, Mitsotakis conveyed his disappointment over the last-minute cancellation, stating, "I would like to express my displeasure at the British Prime Minister's cancellation of our meeting just a few hours before it was due to take place." Despite a counteroffer to meet with Deputy Prime Minister Oliver Dowden, Mitsotakis reportedly declined.
- A spokesperson from Downing Street emphasized the significance of the UK-Greece relationship, highlighting collaborative efforts within NATO and addressing shared challenges such as illegal migration, the conflicts in Ukraine, and the Middle East. While acknowledging the availability of Deputy Prime Minister Dowden for discussions with the Greek Prime Minister, the spokesperson did not explicitly reference the marbles dispute.

NORTH AMERICA

UNITED STATES

US Secretary of State Antony Blinken has embarked on a trip to Europe with the aim of garnering support for Ukraine. While there is a possibility of encountering his Russian counterpart, an official meeting between them seems unlikely. Blinken, who has recently been occupied with issues like the Israel-Hamas conflict and a US-China summit, is set to engage in discussions with NATO foreign ministers in Brussels, addressing another key priority for the United States.

- Following the NATO meetings, Blinken is scheduled to participate in a gathering in North Macedonia organized by the Organization for Security and Co-operation in Europe (OSCE), as stated by James O'Brien, the top US diplomat for Europe. O'Brien expressed anticipation that discussions about supporting Ukraine will take place during this meeting.
- Russian Foreign Minister Sergei Lavrov announced on Monday that North Macedonia, despite imposing Western sanctions in response to Moscow's invasion of Ukraine, has allowed him to attend the annual OSCE meeting where Russia holds membership. Russian state media also reported that Bulgaria, an EU member, has granted permission for Lavrov's plane to traverse its airspace.

SECTION 3 – MIXED BAG

HEALTH

Covid-19 Drug Dexamethasone Dose

A recent study published in The Lancet Regional Health — Southeast Asia journal suggests that a higher dose of the Covid-19 drug dexamethasone may not have as beneficial effects for patients in India compared to those in Europe.

- The research, conducted by a team that included scientists from Copenhagen University Hospital Rigshospitalet, Denmark, examined the efficacy of a stronger dose (12 mg) of dexamethasone in treating Covid-19 patients, taking into account factors such as patient variations and health system differences.
- Contrary to expectations, the study found that the larger dose of dexamethasone did not appear to be as effective as the standard dose (6 mg) for Covid-19 patients in India. Survival rates and the overall well-being of individuals after 90 and 180 days were used as indicators, revealing that the higher dose did not yield better outcomes.
- Researchers from Apollo Hospitals, Chennai; Homi Bhabha National Institute, Mumbai; the George Institute for Global Health, New Delhi; and the University of New South Wales, Australia were also part of the study.
- The researchers noted that while their analysis suggests a potential diminished efficacy of a higher dose of dexamethasone for Indian patients compared to those in Europe, the

evidence is weak, and this observation could be incidental. The study also examined the safety aspect and found no significant issues for Indian patients. It highlighted the influence of geographical location on treatment effectiveness, emphasizing that unique challenges in lower-middle-income countries like India might impact the success of treatments.

- Encouragingly, the study reported that the higher dose did not pose additional problems for Indian patients, ensuring their safety.
- The authors, however, stressed that this study represents just one piece of the puzzle, and more research is essential to validate these findings.
- Additionally, the research team commented on the need to recognize that medical treatments might exhibit varying degrees of efficacy in different regions of the world, reinforcing the idea that "different folks, different strokes" apply to the realm of healthcare.

SPACE



Evil Eye Galaxy Discovery

NASA has recently unveiled a striking snapshot of a distant galaxy, affectionately dubbed the 'Evil Eye.' This cosmic marvel, formally recognized as Messier 64 (M64), is situated approximately 17 million light-years away in the constellation 'Coma Berenices.'

- The captivating image of the 'Evil Eye' was initially captured in 2008 by the NASA Hubble Space Telescope. At its core, a luminous yellow nucleus radiates amidst darkness, absorbing dust in rich shades of brown and orange. Surrounding this vibrant nucleus are clusters of blue and purple dots, creating a visually stunning spectacle at the galaxy's center.

- Discovered in the 18th century by the renowned French astronomer Messier, M64 earned its moniker, the 'Black Eye' or 'Evil Eye' galaxy, due to a prominent dark band of dust concealing its brilliant core. This celestial entity has fascinated astronomers and stargazers alike, easily observable through moderate-sized telescopes with a magnitude of 9.8.
- What distinguishes the 'Evil Eye' galaxy is its unique internal dynamics. NASA's observations reveal an unusual rotation pattern within M64— the gas in its outer regions spins in a direction contrary to the motion observed in the inner regions. This phenomenon is believed to be a consequence of a cosmic merger between M64 and a satellite galaxy over a billion years ago.
- A recent NASA Instagram post highlighted, "First discovered in 1799, astronomers know this galaxy by its peculiar internal motion. The gas in the inner and outer regions move in opposite directions, which may be due to a recent galactic merger."
- Responses to the image varied among different individuals. While some were awestruck by the celestial beauty, others appeared visibly shocked by such revelations.
- Comments ranged from expressions of awe, such as "The Universe is so damn big," to inquiries about historical discoveries, with one user asking, "How did people discover this movement in 1799?" Another user expressed confidence in advancing technology, stating, "tbh, our technology is too advanced, and sooner they will capture this magnificent with a high rates lens."
- Regrettably, skeptics also made their presence known in the comments, dismissing the findings as either AI-generated or mere fantasy.
- Despite the skepticism, many viewers see this image of the 'Evil Eye' galaxy as not only a source of imaginative wonder but also as evidence of the vast unexplored realms within the universe. It underscores the ongoing efforts of NASA and other space organizations in unraveling the mysteries of the cosmos and expanding our knowledge.

BUSINESS

Taiwan's Foxconn plans to invest \$1.54 billion more in India

Taiwanese technology giant Foxconn, a major supplier for Apple, is set to make an additional investment of \$1.54 billion in India to address its operational requirements and decrease dependence on Chinese production.

- Foxconn, officially known as Hon Hai Precision Industry, is the largest contract electronics manufacturer globally and is renowned for assembling devices, notably Apple's iPhones.
- In a filing to the Taiwan Stock Exchange on Monday, Foxconn announced that its Indian subsidiary is planning to allocate approximately \$128 billion rupees for "engaging others to build on owned land" to fulfill operational needs. The statement, however, did not provide specific details, mentioning that a supplementary announcement would follow once the transaction is confirmed.
- Facing challenges such as strict Covid policies, industrial unrest, and diplomatic tensions with the United States that impacted production in China, Foxconn aims to diversify its

manufacturing operations. Chairman Young Liu expressed the company's intention to invest "several billion dollars" in India during an earnings call in August.

- Having acquired a substantial land parcel near the tech hub Bengaluru for \$37 million in May, Foxconn is already operating about nine production campuses and over 30 factories in India, according to Liu.
- The company's strategy involves expanding its operations in India to include "critical components" for consumer electronics and electric vehicles, aiming to enhance its competitiveness in these sectors. The move is part of Foxconn's broader initiative to reduce its reliance on Chinese production and explore opportunities in diverse global markets.

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