

Tuesday, November 7, 2023 (Daily E-booklet on Artificial Intelligence, VR, Tech, Robotics, Coding, Global Info, Health, Science & more)

SECTION 1 – TECH BUZZ

ARTIFICIAL INTELLIGENCE



Alibaba Streamlines Global Operations Through Aidge AI

Alibaba International Digital Commerce Group has introduced its groundbreaking AI-powered suite of application programming interfaces (APIs) named "Aidge," aimed at revolutionizing global operations for enterprises.

- Aidge, short for "AI for Digital and Global Entrepreneurship," leverages Alibaba International's proprietary large language models and computer vision models, honed through deep insights into global e-commerce operations. This innovative suite enhances business performance and reduces costs for enterprises.
- In its pilot launch phase, Aidge plans to collaborate with interested software as a service (SaaS) partners and independent service vendors (ISVs) to test more than 15 APIs. These APIs span various aspects of global commerce, including consumer insight, content localization, marketing, design, and customer service.
- Alibaba International recognizes the challenges faced by small and medium-sized
 enterprises (SMEs) engaged in global commerce, such as language barriers, high
 marketing costs, and talent shortages. Kaifu Zhang, Vice President of Alibaba
 International, emphasized Aidge's role in simplifying global operations for SMEs. Aidge
 addresses crucial areas like content localization, customer service, and marketing, aiming
 to improve conversion rates and operational efficiency for businesses.

- Aidge invites SaaS partners and ISVs to participate in the pilot testing phase, offering a
 suite of APIs supporting 18 languages. With its multilingual capabilities and robust
 content localization and marketing features, Aidge helps businesses overcome language
 and cultural barriers. Data from Alibaba International's internal application of Aidge
 demonstrates its ability to enhance order conversion, consumer satisfaction, and
 operational efficiency for SMEs.
- Aidge's APIs cover diverse aspects, including consumer insights, content localization, customer service, design, and marketing. Additionally, Aidge offers AI agents to support enterprises in sales conversion, customer inquiries, request management, and search engine optimization. Several e-commerce platforms, including South Asian platform Daraz, are conducting pilot testing with Aidge. Daraz plans to integrate more of Aidge's AI capabilities to enhance user experience and streamline online operations for sellers.
- Aidge is rolling out its services to merchants on Alibaba International's e-commerce
 platforms and aims to extend its reach to more SMEs through collaborations with SaaS
 partners. The company anticipates a staged regional rollout by the end of the year.
 Alibaba International Digital Commerce Group remains committed to supporting global
 digital trade development through AI-powered technology, fostering collaborations with
 SaaS partners worldwide to redefine the future of global business operations for SMEs.

NatWest Launches Cora+ AI

NatWest, the British bank, is rolling out an enhanced version of its chatbot designed to engage in human-like conversations with customers, as part of its rapid integration of artificial intelligence (AI) technology.

- This upgraded virtual assistant, named Cora+, harnesses the power of generative AI, enabling customers to pose questions and receive responses in a more natural, conversational manner, akin to interactions with bank staff.
- Developed in collaboration with IBM, Cora+ can access information from various sources previously inaccessible to the chatbot. This capability empowers the chatbot to provide personalized and detailed answers to complex inquiries regarding products, services, general banking information, and career opportunities. Notably, the bank has emphasized that Cora+ has been meticulously crafted to be free of bias and hate, ensuring trustworthy interactions between the chatbot, the bank, and customers.
- According to Paul Taylor, Managing Director of IBM Technology, it is crucial for the
 AI-powered chatbot to be accurate and reliable, without the risk of providing incorrect
 information with unwavering confidence. Cora+ caters to customers seeking support
 outside regular office hours, catering to families with young children or individuals
 working non-traditional hours. Despite the introduction of this advanced technology,
 NatWest maintains that it will not replace the option for customers to visit branches or
 speak with bank staff over the phone.
- Taylor emphasized that the initiative is about providing customers with more flexibility in accessing information, allowing them to choose how and where they receive the information they need. He also highlighted the importance for banking institutions to

- adopt advanced technologies to engage with customers effectively, suggesting that failure to do so could result in a loss of customers to more technologically adept competitors.
- This announcement coincides with the UK's hosting of the inaugural AI Safety Summit, during which Prime Minister Rishi Sunak celebrated significant agreements and advancements in global collaboration concerning AI. Sunak also announced the establishment of a new institute in the UK, authorized to test AI models developed by major technology companies before their public release.

AI Giants Race Dominance

In the competitive landscape of Silicon Valley, companies are vying for dominance in the generative artificial intelligence market, a field that has gained immense traction in recent times. According to industry analyst Jack Gold, having a strong AI presence is crucial for companies' survival, and the race to outshine each other in AI technology is intense.

- In the past few weeks, major tech companies have released their earnings reports for the July-September quarter, and while most exceeded analyst expectations, the focus on generative AI stole the spotlight. OpenAI's ChatGPT chatbot, launched a year ago, captured the world's attention, showcasing the potential of generative AI.
- Google's parent company, Alphabet, known for its online advertising prowess, reported a
 42 percent profit increase in the third quarter, reaching nearly \$20 billion. However, their
 Google Cloud division faced scrutiny, leading to a drop in Alphabet's shares. Analysts
 like Max Willens from Insider Intelligence believe that while Google Cloud's credibility
 among AI startups could pay off in the long run, it's not currently satisfying investors'
 expectations.
- Generative AI, powered by large language models, is seen as a transformative development akin to the internet revolution. These AI systems compile vast amounts of data to create complex content, from poems to scholarly essays, within seconds. Tech giants like Microsoft, Google, and Meta have trained their own models, with cloud services providers such as Microsoft's Azure, Amazon Web Services (AWS), and Google Cloud leading the charge in monetizing AI. However, the costs, especially related to the necessary microprocessors, remain high.
- Nvidia, a chipmaker, made strategic investments in graphics processing units (GPUs) years ago, positioning itself as a key player in the rapid advancement of generative AI. Meanwhile, Intel has been working to catch up, emphasizing the significance of inferencing workloads, which constitute the standard functioning of AI models once created.
- Amazon, investing billions in Anthropic, a rival to OpenAI, highlights the importance of its Bedrock service for building generative AI applications. Amazon CEO Andy Jassy emphasized Bedrock's ability to simplify the decision-making process and reduce complexities associated with choosing the right AI models while managing costs.
- Even Apple, a company known for its discrete approach to technology trends, acknowledged its involvement in generative AI. Apple CEO Tim Cook confirmed ongoing work on generative AI, particularly concerning its digital assistant Siri, indicating potential developments in the near future. Other tech companies, including

- Amazon with its digital assistant Alexa, are also exploring AI capabilities to stay ahead in the evolving market.
- Overall, experts believe that the generative AI market is in its early stages, and every
 major player is investing heavily to secure their position. The emphasis is currently on
 enterprise applications, with companies racing to make significant strides in generative
 AI technology and meet the demands of a rapidly evolving market.

ROBOTICS

Human-Like Robots: Future Reality

Decades of engineering dreams inspired by science fiction have driven the quest to create human-like robots that are both functional and practical. Despite the recent surge in artificial intelligence investment, most current humanoid prototypes are clumsy and more suited for staged performances than real-world applications. However, a few startups, including Agility Robotics, are persistently working towards building robots that can operate effectively in human spaces.

- Jonathan Hurst, co-founder and chief robot officer at Agility Robotics, emphasizes the importance of creating robots that can navigate human environments rather than replicating human appearance. Agility's warehouse robot, Digit, is designed to pick up tote bins and move them efficiently. Amazon has expressed interest in testing Digits for its warehouses, highlighting the potential for robots like Digit to enhance existing automated systems in large-scale operations.
- While some companies like Figure AI believe in the necessity of true humanoid robots to navigate various workplaces and society, others like Agility Robotics focus on creating robots with specific functionalities. Figure AI CEO Brett Adcock envisions commercial humanoids that can be adapted for multiple tasks to address labour shortages due to declining birth rates worldwide. Despite Figure AI's early stage in development, the market potential for humanoids remains significant.
- Even high-profile figures like Tesla CEO Elon Musk are venturing into humanoid robotics. Musk's company unveiled Optimus, a humanoid robot, although its initial demonstration received mixed reviews. Meanwhile, Apptronik, a neighbour of Tesla in Austin, Texas, showcased its Apollo humanoid, indicating the growing interest and investment in humanoid technology.
- For pioneers like Marc Raibert, co-founder of Boston Dynamics, the journey of developing legged robots offers valuable insights. Raibert emphasizes the importance of understanding how people respond to robots and advancing critical technologies related to mobility, dexterity, perception, and intelligence. Boston Dynamics, now a subsidiary of Hyundai, has explored various robot designs, leading to the development of useful non-humanoid robots inspired by humanoid research.
- Some startups, like Sanctuary AI, focus on enhancing robotic dexterity, believing that understanding and manipulating the physical world with hands pose the most significant challenge in humanoid robotics. Sanctuary AI's Phoenix robot represents a step towards robots perceiving and reasoning about the world, with the ultimate goal of artificial

- general intelligence. These human-like robots aim to interact with people effectively, providing labour across diverse job roles in the economy.
- Agility Robotics' Digit robot captured Amazon's attention due to its mobility and ability
 to complement existing robotic systems in warehouses. While Digit is currently
 undergoing testing for repetitive tasks, its presence raises concerns about potential job
 displacement. Despite these concerns, Agility Robotics CEO Damion Shelton envisions a
 future where human-centric robots like Digit are embraced, becoming an integral part of
 human life in various industries and homes. The continuous efforts of these startups
 reflect the ongoing pursuit of creating sophisticated robots that can operate alongside
 humans in diverse environments.

PROGRAMMING (.NET)

Uno Platform 5.0 Enhancements

Uno Platform has recently launched version 5.0 of its framework, a significant milestone in the realm of native mobile, desktop, and WebAssembly app development. With this latest release, developers can now create .NET applications using a single language, leveraging C# Markup and the C# programming language exclusively. This approach simplifies the development process, offering a seamless experience for developers.

- A standout feature of this release is the introduction of C# Markup, a tool that the Uno Platform community had eagerly anticipated. C# Markup enables developers to design the UI layer of their applications using C# alone, eliminating the need to learn a new programming language. This user-friendly tool empowers developers to define the look and feel of their apps efficiently. The platform's original announcement post included a comparison diagram illustrating the similarities between the new C# Markup approach and existing methods, highlighting the platform's versatility.
- C# Markup support extends to standard WinUI controls, as well as those included in Uno.Toolkit and Uno.Extensions. To complement this, the Uno Platform Figma extension has been updated to support C# Markup. Developers can now export components and Figma designs directly to C# markup and XAML code, seamlessly integrating the generated code into their Uno Platform applications.
- Version 5.0 also brings enhancements to the Hot Reload feature, ensuring a consistent experience whether developers are working with XAML, C#, or C# Markup in Visual Studio or Visual Studio Code, regardless of the operating system being used. An issue related to .NET 8 affecting iOS, Android, and Catalyst targets has been identified, prompting the utilization of a hot reload feature based on XamlReader for these platforms temporarily. A solution for this problem is anticipated in the first service pack for .NET 8, scheduled for release in December.
- Additionally, Uno Platform 5.0 introduces improvements to MVUX (Model-View-Update eXtended), allowing developers to make adjustments to both the Model and the View without restarting the application. These enhancements apply to both XAML and C# Markup, providing developers with greater flexibility. C# Markup also enables the

- use of MVUX controls, such as FeedView, allowing developers to define various states within their applications seamlessly.
- In this release, support for Xamarin has been discontinued, and the support for .NET 6 for Mobile targets has ended. Developers are encouraged to transition to .NET 7 or prepare for the upcoming .NET 8 release. For users utilizing Windows SDK 18362, updating the minimum SDK version to 19041 is crucial to ensuring compatibility with Uno Platform 5.0.
- Finally, Uno Platform 5.0 introduces adjustments aligned closely with WinUI. While these changes primarily impact the binary level, they maintain source compatibility, simplifying the upgrading process for developers. Overall, Uno Platform 5.0 represents a significant step forward in simplifying app development, offering enhanced features and a streamlined experience for developers across various platforms.

VIRTUAL REALITY

Virtual Tour for Royalton Splash

Blue Diamond Resorts announce its latest venture into the world of virtual reality, unveiling immersive 3D scenarios for its newest property, Royalton Splash Riviera Cancun, An Autograph Collection All-Inclusive Resort.

- This groundbreaking technology marks the second property under the hotel management company to be completely mapped, offering 360-degree virtual tours through an intuitive interface. Blue Diamond Resorts encompasses over 60 properties in eight countries located in the most popular holiday destinations in the Caribbean.
- This cutting-edge functionality is not only a treat for travellers but also a valuable tool for professionals involved in Meetings, Incentives, Conferences, and Events (MICE). The immersive 3D tours provide an insider's view of every corner, showcasing the resort's services tailored to cater to the diverse needs of their guests.
- More than just enhancing the experience for travellers, this tool becomes an invaluable
 resource for MICE planners, offering a comprehensive view of venues ideal for events.
 Whether guests are planning a leisure trip or a business gathering, this experience
 empowers them to make informed decisions by immersing themselves in the resort's
 ambiance before confirming their reservations.
- Alejandro Rodriguez del Peon, Director of Marketing & PR for Blue Diamond Resorts, expressed, "With the increasing popularity of virtual experiences, we are constantly exploring innovative ways to help travellers explore our properties and get a better understanding of what they look like. Last year, we introduced this virtual tourism tool at our Planet Hollywood Beach Resorts in Cancun, making us pioneers in the all-inclusive segment."
- The resort's website now proudly features a captivating Virtual Tour option seamlessly integrated into the "Our Resort" section. This tour takes visitors through the entire property, from the grand lobby and the exclusive Diamond ClubTM lounge to the inviting pools, lazy rivers, and water park. Travelers can virtually step into the resort to explore its modern rooms in various categories, restaurants, the GameUp Entertainment Center,

- Royalton FIT, and spa facilities. Additionally, guests can explore the convention center and its unique spaces designed for group events and luxury weddings.
- The 3D renderings of Royalton Splash Riviera Cancun offer vacationers an authentic feel for each venue. Interactive features enable guests to experience their vacation before their arrival. Whether travellers are planning a family, romantic, or friends' getaway, they can access all the amenities that await them at the resort, from indulging in The Royal Spa to relishing delicious meals at the à la carte restaurants. For business travellers, there is a comprehensive walkthrough of the Meeting & Event spaces, spanning 25,000 square feet and featuring a ballroom and 12 breakout rooms that can be customized according to customer needs.
- Blue Diamond Resorts continues to push technological boundaries, showcasing their modern and unique venues in ways that go beyond the traditional. The all-inclusive metaverse is now easily accessible at royaltonresorts.com, inviting guests to embark on a virtual journey through the luxurious offerings of Royalton Splash Riviera Cancun.

SECTION 2 – GLOBAL INFO MIDDLE EAST

ISRAEL

Israel launched significant airstrikes on Gaza, intensifying its military campaign against Hamas forces despite ceasefire calls from UN aid agencies.

- The conflict, which has lasted for a month, has witnessed Israeli troops and Hamas fighters engaging in house-to-house combat in densely populated Gaza. As a result, 1.5 million people have fled their homes in search of safety within the territory.
- Israeli army spokesman Jonathan Conricus stated during a briefing that they intended to confront Hamas both underground and above ground, emphasizing their determination to dismantle Hamas strongholds systematically. He urged civilians to evacuate the urban war zone in the northern part of the Hamas-ruled Gaza Strip for their safety.
- Conricus accused Hamas of constructing tunnels beneath hospitals, schools, and places of worship to conceal fighters, plan attacks, and store ammunition. This allegation has been consistently denied by the militant group.
- The impact of the airstrikes was devastating, leaving Gaza City in ruins. Residents like Alaa Abu Hasera described the strikes as akin to an earthquake, with entire blocks reduced to rubble amidst the ongoing conflict.

EUROPE

UKRAINE

Ukrainian President Volodymyr Zelensky has firmly stated that he will not engage in talks with Russia unless the invading troops withdraw from Ukrainian territory. This declaration came as Kyiv investigated a deadly strike on its soldiers, further escalating tensions in the region.

- Despite a much-publicized Ukrainian counter-offensive, the frontline between the warring sides has remained largely static for almost a year. Russian forces have entrenched themselves in southern and eastern Ukraine, creating a prolonged and tense situation.
- Key allies of Ukraine, including the United States and European nations, have reportedly suggested negotiations to bring an end to the 20-month-long conflict. However, Zelensky denied these claims, emphasizing his unwillingness to negotiate with what he referred to as "terrorists," alluding to Russia.
- In an interview with NBC television, Zelensky made his position clear, stating, "The
 United States knows I am not ready to speak with the terrorists because their word is
 nothing. They have to leave our territory; only after that can diplomacy come into play."
 He firmly believes that a prerequisite for any diplomatic discussions is the complete
 withdrawal of Russian troops from Ukrainian soil.
- Acknowledging the challenging situation at hand, Zelensky reiterated the urgent need for bolstering Ukraine's air defences. He emphasized that enhancing their capabilities in the sky is crucial to ending Russia's control and dominance, a vital step towards achieving peace in the region. The Ukrainian leader's firm stance underscores his commitment to defending his country's sovereignty and ensuring the safety and security of its citizens.

ASTA

BANGLADESH

Bangladesh has witnessed a significant surge in arrests of opposition figures, with nearly 8,000 individuals apprehended across the nation following the dispersal of a major rally in the capital city just a week ago, according to a recent report. This extensive crackdown comes in the lead-up to the general election scheduled for January.

- The Bangladesh Nationalist Party (BNP), the country's major opposition, along with its allies, has been organizing large-scale rallies in recent months. They demand Prime Minister Sheikh Hasina's resignation and the establishment of a neutral government to oversee the upcoming elections.
- During her 15 years in power, Prime Minister Hasina has overseen remarkable economic
 growth in the country. However, her administration has faced criticism for governing
 Bangladesh with a firm hand. The situation escalated to the point where the United States
 imposed sanctions on some of the highest-ranking police officials in Bangladesh due to
 widespread human rights violations.
- In a recent incident, more than 100,000 opposition supporters gathered for a "grand rally" in central Dhaka last Saturday. Tragically, clashes during the event resulted in the death

of a policeman. The political atmosphere in Bangladesh remains tense as the country approaches the crucial general election in January.

NORTH AMERICA

UNITED STATES

The United States military made a significant announcement regarding the deployment of a guided missile in West Asia. The US Central Command shared the news on its social media platform, revealing that an Ohio-class submarine had entered the US Central Command area of responsibility on November 5.

- This strategic move was widely seen as a clear message of deterrence aimed specifically at regional adversaries such as Iran and its affiliated groups.
- The arrival of the missile-carrying submarine marked a deliberate demonstration of
 military strength. The Ohio-class submarines, originally designed as ballistic missile
 subs, have been repurposed to launch Tomahawk cruise missiles instead of nuclear-tipped
 ballistic missiles. The US Navy currently operates four of these Ohio-class guided missile
 submarines (SSGNs), which possess significant firepower.
- Each SSGN is capable of carrying an impressive arsenal of 154 Tomahawk cruise missiles. This payload is 50% more than what US guided-missile destroyers typically carry and nearly four times the armament of the Navy's newest attack submarines, as reported by CNN. The Tomahawk missiles utilized by these submarines are equipped with high-explosive warheads, each capable of carrying up to 1,000 pounds of explosive power.
- Commenting on this development, Carl Schuster, a former director of operations at the
 US Pacific Command's Joint Intelligence Center, emphasized the rapid and formidable
 firepower that SSGNs can deliver. In an interview with CNN in 2021, Schuster
 highlighted the significant military capabilities of these submarines, underscoring their
 ability to deploy a substantial amount of firepower swiftly and effectively.

SECTION 3 – MIXED BAG

HEALTH

Brain Tumour Lateral Test

Researchers are pioneering the development of the world's inaugural lateral flow test designed to identify brain tumours. The goal is to create a user-friendly test akin to those utilized during the Covid-19 pandemic, enabling patients to conduct the test in the comfort of their homes. This groundbreaking initiative is specifically targeting aggressive and recurring tumours, responsible for nearly 200,000 global deaths annually.

- The challenge lies in the unpredictable nature of tumour recurrence post-initial treatment, making early detection arduous and leading to grim prognoses. The novel test, requiring only a simple finger prick, holds the promise of enhancing the lives of tens of thousands worldwide. Moreover, it has the potential to alleviate strain on healthcare systems by reducing reliance on MRI scans and offering a cost-effective alternative to certain clinic appointments.
- At the forefront of this pioneering work is a team from Nottingham Trent University (NTU), supported by funding from the Medical Research Council, in collaboration with researchers from the University of Sheffield. Philippe Wilson, Professor of One Health at NTU, emphasized the severity of the issue, stating that despite the best available treatments upon initial diagnosis, tumour recurrence remains a significant challenge, with some tumours returning rapidly and aggressively.
- Wilson elaborated on the significance of the lateral flow test technology, widely
 recognized for its simplicity and ubiquity. This innovation could facilitate regular,
 affordable disease monitoring for patients at home, offering a straightforward and
 accessible solution. The potential applications of this technology are vast, with hopes that
 it could extend to other types of cancer, potentially saving millions of lives worldwide.
- The research team is concentrating on developing lateral flow tests capable of identifying specific tumour-related molecules in the blood, offering early indications of tumour recurrence. Prototypes are currently under development as part of the project, with plans to progress to clinical trials. The technology aims to target cancers such as glioblastoma (GBM), the most malignant form of brain tumour.
- Dr. Ola Rominiyi from the University of Sheffield's School of Medicine and Population Health highlighted the challenge of detecting the recurrence of aggressive brain tumours like glioblastoma at the earliest possible stage. Current follow-up procedures often involve MRI scans every three to six months. However, successful development of a lateral flow test for brain cancer could enable efficient weekly testing, ensuring the early detection of recurrent tumours, thereby increasing the chances of successful treatment.

FINANCE

Telecom Italia approves US fund's bid for network

Telecom Italia has given the green light to an offer from US investment fund KKR for its fixed-line network, a move that has triggered strong opposition from its main shareholder, French media giant Vivendi.

- The Italian telecommunications company aims to sell its fixed network to reduce its staggering debt, which currently exceeds 26 billion euros (\$28 billion). TIM's board has approved the deal, valued at potentially 22 billion euros, with the expectation that it will alleviate the debt burden by approximately 14 billion euros.
- However, Vivendi vehemently opposes the sale, valuing the network at 31 billion euros and deeming KKR's previous bids insufficient. Vivendi has pledged to challenge what it deems an "illegal" decision, promising to use all legal avenues available to contest the move. The company had previously threatened legal action if the KKR offer was

- accepted without being presented to an extraordinary general assembly of shareholders, where Vivendi holds considerable influence. Vivendi expressed concerns that the rights of Telecom Italia shareholders were being disregarded in this process.
- TIM's CEO, Pietro Labriola, hailed the board's decision as historic and expressed willingness to engage in dialogue, particularly with major shareholders. The Italian government, already the second-largest shareholder in TIM since its privatization in 1997, plans to acquire a stake of up to 20 percent in the fixed-line network, viewing it as a crucial piece of strategic infrastructure.
- After months of anticipation, TIM's board approved exclusive negotiations with KKR in June, rejecting a lower offer from the Italian Caisse des Depots and Australian fund Macquarie Asset Management, valued at approximately 19.3 billion euros. If the deal proceeds, TIM will become the first major operator in Europe to sell its fixed network domestically to alleviate its debt burden.
- TIM's heavy debt load has impeded its ability to invest in the expansion of fiber optic networks, a sector where Italy lags behind other advanced economies. The sale of its fixed-line network represents a strategic move aimed at enabling the company to invest in crucial infrastructure and catch up with global technological advancements.

SPY Satellite

South Korea's Spy Satellite

South Korea has revealed its intention to launch its inaugural domestically developed spy satellite by the end of this month, aimed at enhancing its surveillance of North Korea amidst the latter's efforts to expand its nuclear arsenal.

- This announcement follows North Korea's unsuccessful attempt to launch its own reconnaissance satellite in October, likely due to technical difficulties.
- Jeon Ha Gyu, a spokesperson for the South Korean Defense Ministry, announced on Monday that the country's first military spy satellite is scheduled for launch on November 30 from California's Vandenberg Air Force Base. SpaceX's Falcon 9 rocket will carry the satellite, with South Korea planning to deploy four more spy satellites by 2025 under a contract with SpaceX, as stated by South Korea's Defense Acquisition Program Administration.
- Currently reliant on U.S. spy satellites to monitor North Korea, South Korea's
 independent space-based surveillance system will provide real-time monitoring
 capabilities. When integrated with South Korea's existing three-axis system, comprising
 preemptive strike, missile defense, and retaliatory assets, the nation's defense against
 North Korea will significantly strengthen, according to Lee Choon Geun, an honorary
 research fellow at South Korea's Science and Technology Policy Institute.
- While U.S. spy satellites offer higher-resolution imagery, they operate according to U.S. strategic objectives, potentially limiting data sharing with South Korea. South Korea successfully launched a "performance observation satellite" using its own technology last year, but opting for SpaceX's rocket from the Vandenberg base is deemed more economical and reliable, especially for the heavier spy satellite.

- Meanwhile, North Korea is actively pursuing its own spy satellite but faced setbacks with two failed launch attempts this year due to technical issues. Despite announcing plans for a third attempt in October, North Korea did not proceed, and the reasons remain undisclosed. South Korea's intelligence agency indicated that North Korea might be receiving technological support from Russia for its spy satellite program, emphasizing the significance of these developments in the context of North Korea's efforts to modernize its weapons programs.
- Leader Kim Jong Un's ambitious arms build-up plans in 2021 include acquiring spy satellites, mobile intercontinental ballistic missiles, nuclear-powered submarines, hypersonic weapons, and multi-warhead missiles to counter perceived U.S. military threats. South Korea's assessment of North Korea's satellite capabilities suggests potential military utility, even though the satellite was deemed crude for military reconnaissance following its failed launch in May.
- In summary, South Korea's imminent launch of its first military spy satellite marks a significant step toward bolstering its national security by establishing an independent space-based surveillance system, while North Korea continues its pursuit of advanced weaponry and satellite technology with potential foreign assistance.

OFFBEAT



Aurora Borealis Phenomenon

In an unprecedented event, residents of Bulgaria recently marvelled at the awe-inspiring display of the Aurora Borealis, commonly known as the northern lights. Social media platforms were flooded with viral photos shared by Bulgarian locals capturing this remarkable phenomenon.

- Astonishingly, the vivid spectacle was not limited to Bulgaria; residents in Romania and Hungary also reported witnessing a reddish light resembling a fiery glow in the sky.
- The Aurora Borealis, a natural light show, typically occurs in the polar regions of the planet. Countries like Norway, Sweden, Finland, Iceland, Canada, Alaska (US), and Russia, located near the North Pole, are renowned for hosting this captivating display. Bulgaria, situated in eastern Europe and bordered by the Black Sea, lies approximately

- 1,000-1,500 kilometers northeast of the Mediterranean Sea, making it relatively southward for its citizens to observe the Northern Lights.
- What makes this occurrence even more extraordinary is that during the third week of September, the northern lights were visible as far south as Minnesota and Wisconsin in the United States. Scientists attribute this expansion in the geographic range of the Aurora Borealis to increased sunspot observations. Sunspots, which are dark, cooler, and magnetically active regions on the solar surface, play a pivotal role in predicting the likelihood of witnessing the northern lights. These sunspots have become more prominent since the end of 2022, leading to an extended area where this captivating natural phenomenon can be observed.
- The process behind this mesmerizing light show involves coronal mass ejections. These ejections occur when magnetic disturbances in sunspots propel particles into space. Traveling over 94 million miles, these particles eventually collide with Earth's magnetic field, creating neon hues as they interact with the planet's atmosphere. This rare and breathtaking event has captured the imagination of people around the world, reminding us of the incredible wonders of nature.

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