

# **INFOTAINMENT EDGE<sup>TM</sup>**

Monday, October 30, 2023 (Daily E-booklet on Artificial Intelligence, VR, Tech, Robotics, Coding, Global Info, Health, Science & more)

# **SECTION 1 – TECH BUZZ**

# **ARTIFICIAL INTELLIGENCE**



### **IBM's Brain-Inspired AI Chip**

IBM has taken inspiration from the human brain to design its latest AI hardware, unveiling the 12-nm NorthPole chip. This innovative chip features a neural network hardware architecture optimized for tasks like image classification and object detection.

- Unlike traditional GPUs, NorthPole's unique design integrates all the memory directly onto the chip, eliminating the need for constant data shuffling between different components, a challenge known as the von Neumann bottleneck.
- With 22 billion transistors and extensive on-chip memory, NorthPole achieves remarkable efficiency, being 25 times more energy-efficient and boasting 22 times lower latency than comparable GPUs, as demonstrated in the ResNet50 benchmark.
- This self-contained approach, similar to the human brain, enables NorthPole to process tasks like detection, image segmentation, and video classification efficiently. Although it cannot access external memory, limiting its ability to run larger neural networks like GPT-4, IBM addresses this limitation by breaking down complex networks into smaller sub-networks.

- These sub-networks can be accommodated within NorthPole's memory and connected across multiple chips, a technique referred to as "scale-out." This method makes NorthPole suitable for real-time processing of vast data sets in edge applications, especially in areas like autonomous vehicles.
- IBM's NorthPole chip draws inspiration from the brain's architecture, incorporating networks on-chips (NoCs) that interconnect cores, similar to the brain's white-matter and gray-matter pathways. Additionally, the chip mimics the brain's local connectivity pathways between neurons, enhancing neural activations. To conserve memory and power, NorthPole utilizes lower bit precision (two to four bits) compared to traditional GPUs, which typically use higher bit precisions (eight to 16 bits).
- IBM is actively researching and experimenting with NorthPole, exploring potential applications beyond computer vision. While the chip's initial focus was on computer vision-related tasks, such as image segmentation and video classification, it has also been tested for natural language processing and speech recognition. IBM is considering mapping decoder-only large language models to NorthPole scale-out systems, showcasing the chip's versatility and potential in various AI applications.

### Almost half of enterprises risk 'falling behind' on AI

A recent survey conducted by A has provided valuable insights into the current landscape of AI adoption among enterprises. The survey, which engaged 2,500 IT leaders from the US, UK, Germany, France, and Japan, unveiled a concerning trend: nearly 50 percent of enterprises are at risk of falling behind in the race to embrace AI technology.

- The findings of the survey highlighted the dual nature of the AI narrative within organizations. On one hand, there is overwhelming enthusiasm among IT leaders about the potential advantages offered by AI. An impressive three out of four respondents expressed optimism regarding AI's capabilities. These anticipated benefits ranged from enhanced employee efficiency to the implementation of automated cybersecurity solutions.
- Moreover, the survey revealed that 67 percent of the respondents are actively increasing their investments in AI technologies to leverage these advantages. This signifies a widespread recognition of AI's transformative potential. However, beneath this enthusiasm lies a layer of hesitancy stemming from uncertainties related to implementation, concerns about the readiness of existing hardware, and compatibility with existing technology stacks.
- Matthew Unangst, Senior Director of Commercial Client and Workstation at AMD, emphasized the advantages of early AI adoption, stating that IT leaders recognize the benefits of AI-enabled solutions. However, he also pointed out the necessity for enterprises to establish a focused implementation plan; otherwise, they risk falling behind in the AI race. According to Unangst, a strategic approach that incorporates open software ecosystems and high-performance hardware is crucial. AMD, he noted, advocates for leveraging AI intellectual property across its product range to benefit partners and customers.

- The survey highlighted a crucial correlation: organizations that prioritize AI deployment experienced a significant boost in workplace efficiency. This emphasizes the potential competitive edge that early AI adoption can offer in terms of productivity and overall performance. AMD's survey results underscore the implication that businesses delaying AI adoption might compromise their market standing.
- In response to these challenges, AMD is actively developing AI-capable solutions across its product portfolio, encompassing areas such as cloud computing, edge computing, and endpoints. By focusing on creating AI-ready products, AMD aims to provide enterprises with the tools necessary to navigate the complexities of AI adoption successfully.
- In conclusion, while IT leaders are optimistic about AI's possibilities, there is an urgent need for well-defined implementation strategies. AMD's survey illuminates a clear message: enterprises that proactively and purposefully embrace AI adoption stand to gain substantial benefits, whereas those that lag behind risk encountering significant challenges in the competitive landscape.

### ERNIE 4.0 AI

In recent years, the applications of artificial intelligence (AI) foundation models have diversified, revolutionizing various industries and households in China. At the annual Baidu World conference in Beijing, Baidu, the renowned Chinese search engine and AI giant, introduced its latest innovation, ERNIE 4.0.

- During a live demonstration, Baidu's CEO, Robin Li, showcased the capabilities of ERNIE 4.0. The AI-powered chatbot swiftly generated advertising materials, including posters and a marketing video, while simultaneously solving complex math problems. Impressively, it crafted intricate storylines for a novel by recalling past instructions and incorporating conflicts and characters.
- Li revealed Baidu's plans to integrate AI technology into its search engine, maps, clouddrive services, and business intelligence solutions for enterprise clients. The potential of this technology was further exemplified by teenage diving champion Quan Hongchan, who explained how Baidu's AI could enhance diving training. The system fine-tuned a diver's movements during daily training sessions, providing invaluable coaching support.
- Additionally, Baidu's foundation model demonstrated its ability to enhance intelligent driving in vehicles. By incorporating self-learning and memory functions, it transformed human-car interactions and elevated user experiences. These advancements underscored the widespread applications of AI foundation models in diverse sectors, including manufacturing, energy, electric power, the chemical industry, and transportation.
- China's Ministry of Industry and Information Technology spokesperson, Tao Qing, emphasized the nation's commitment to promoting digital transformation in manufacturing and fostering innovative AI applications. Huang Tiejun, director of the Beijing Academy of Artificial Intelligence, noted the shift in the competitive landscape of AI foundation models from technology-driven to application-oriented and ecological development.
- Several tech giants, including Huawei, Baidu, Ant Group, and Alibaba Cloud, are actively seeking development partners to build robust foundation model ecosystems.

Tencent, for instance, collaborated with 11,000 ecological partners to create industry-specific solutions across more than 100 scenarios.

• As foundation models become more accessible and AI technology proliferates, He Junjie, senior vice president of Baidu, envisioned a future where everyone is empowered by AI. Automation of mundane tasks will liberate individuals, allowing them to engage in more valuable and creative pursuits. These advancements herald a transformative era, where the potential of AI foundation models reshapes industries and empowers individuals across China.

## **Deep Learning**

### **Deep Learning Gaining Significant Traction Within Data Science**

As the market increasingly embraces Machine Learning (ML), the field of Deep Learning (DL) is gaining significant traction within the realm of data science. Deep Learning, a subset of machine learning, stands out for its ability to emulate, and sometimes even surpass, the cognitive capabilities of the human brain when fed with substantial amounts of data. This unique quality has spurred data scientists to develop various sophisticated Deep Learning frameworks, providing essential tools for creating intricate models. Here's a look at some of the prominent ones:

- **TensorFlow**: TensorFlow, an open-source platform by Google, is a highly favored technology for both machine learning and deep learning. It simplifies the training and utilization of ML/DL models with its JavaScript-based framework. TensorFlow Lite facilitates model deployment on mobile devices, while the main tool enables model construction and deployment on browsers. Its versatility is underscored by TensorFlow Extended, catering to large-scale production contexts.
- **Keras**: Keras, another open-source framework, stands out for its speed and ease of use. Compatible with PlaidML, Theano, Microsoft Cognitive Toolkit, and TensorFlow, Keras supports parallelism, enabling efficient analysis of vast datasets while reducing training time. Its Python-based design enhances simplicity and extensibility.
- **Sonnet**: Developed by DeepMind, Sonnet is a high-level toolkit within TensorFlow for creating complex neural network architectures. It streamlines the creation of neural network components in Python, linking them to a computational TensorFlow graph. This method simplifies the development of intricate architectures, making Sonnet a valuable Deep Learning framework.
- **Swift for TensorFlow**: Swift for TensorFlow combines the strengths of TensorFlow with the Swift programming language. Despite being in its early stages, it integrates cutting-edge findings in machine learning, differentiable programming, and systems architecture. It's an open playground for enthusiasts and researchers to explore the intersection of Swift and deep learning.
- **MXNet**: MXNet is an open-source framework designed for deep neural network deployment and training. Its scalability facilitates rapid model training and supports multiple programming languages, making it highly versatile for developers.

- **Chainer**: Chainer, built in Python and utilizing NumPy and CuPy libraries, introduced the define-by-run method. This approach defines network operations before executing training calculations, providing flexibility in deep learning implementations and ensuring successful navigation of deep learning interviews.
- **PyTorch**: PyTorch, an open-source framework by Facebook, expedites the transition from research prototypes to production deployment. With a Python interface over a C++ frontend and scalable distributed training, PyTorch offers a robust solution for both research and production applications.
- **Deeplearning4J** (**DL4J**): DL4J, a distributed Deep Learning library for Java and the JVM, supports various JVM languages. Programmed in C, C++, and Cuda, DL4J integrates with Apache Spark and Hadoop, enabling efficient model training and integration of AI into business contexts.
- **Gluon**: Gluon, a recent addition to the Deep Learning frameworks, offers an open-source interface for rapid model development. Developers can define ML/DL models using prebuilt neural network components, simplifying the implementation process and enhancing efficiency.
- **ONNX (Open Neural Network Exchange)**: ONNX, an initiative by Microsoft and Facebook, facilitates the creation and dissemination of machine learning and deep learning models. It defines a computation graph model and supports the transfer of models between frameworks, streamlining the process of training in one framework and inferring in another.
- These frameworks, each with its unique strengths, contribute significantly to the evolving landscape of Deep Learning, empowering developers and researchers to delve deeper into the realm of artificial intelligence.

# PROGRAMMING

### **.NET MAUI Release Updates**

.NET MAUI's latest version, released alongside .NET 8 Release Candidate 2, marks a significant step toward the general availability of .NET 8. This release, operating under a go-live license, primarily focuses on addressing regression issues identified during the preview stages. Efforts have also been concentrated on reclaiming performance that was affected during the enhancement of features like hot reload, visual state manager, bindings, and app themes.

- In this Release Candidate 2 version, notable improvements have been made with a focus on performance enhancement, resolution of UI and control issues, and implementation of platform-specific solutions.
- Performance optimization took center stage in this release, specifically targeting ActivityExtensions.GetWindowFrame on Android and refining Setter Specificity performance. These changes are anticipated to result in a smoother and more responsive app experience.
- The development team diligently worked on rectifying UI and control issues. Problems related to CollectionView, TabBar visibility, RoundRectangle Borders, and Android text

alignment were tackled. These updates ensure a consistent and visually accurate user interface across different platforms.

- Additionally, platform-specific solutions were introduced to maintain a uniform user experience. This included enhancements in drag-and-drop functionality, improvements in Shell tab bar appearance, and fine-tuning of specific platform behaviours.
- Apart from these primary objectives, the release incorporated various bug fixes, enhancements, and contributions aimed at enhancing overall software performance. For a detailed overview of these changes, readers are encouraged to refer to the comprehensive release notes.
- In tandem with RC 2, the .NET 7 Service Release was launched as .NET MAUI service release 8 (version 7.0.96), focusing on crucial high-priority fixes related to layout, memory leaks, CollectionView, and safe area. Developers can access this service release by installing .NET 8 RC2, enabling them to build applications targeting .NET 7. Alternatively, version 7.0.96 can be obtained through an upgrade to Visual Studio 17.7.5.
- Moreover, Xamarin developers can now target the latest iOS and iPadOS versions using Xcode 15, alongside Android API 34 for policy compliance. This is achievable through the installation of Visual Studio 17.8 Preview 3 or the latest stable version of Visual Studio for Mac, allowing existing projects to continue building. This flexibility is particularly advantageous for those transitioning to .NET 8 and .NET MAUI, even with the impending end-of-support date for Xamarin next year.
- The comments section remains active, encouraging developers to engage in conversations. David Ortinau, the author of the announcement post and principal product manager on .NET MAUI, participated in discussions with community members.
  Developers are recommended to explore these conversations for insights and community feedback.
- Lastly, developers are invited to test the new release and provide feedback through the official GitHub issue tracker. Community members can also visit the official GitHub project repository to learn more about the project and its future roadmap.

### VIRTUAL REALITY

### **Virtual Show Intermundium Launches**

Sensorium Galaxy was excited to confirm that Intermundium, the eagerly awaited virtual show featuring tracks written, produced, and performed by Carl Cox, premiered last week.

- Available for free, Intermundium marked the official launch of the Sensorium Galaxy, an advanced multiplayer cross-platform metaverse crafted with cutting-edge technologies. While the show could be experienced in a breathtaking 2D streaming on channels like YouTube, Sensorium's website, and Sensorium mobile app, the pinnacle of immersion was through two VR formats: VR-360 and full-fledged VR.
- The VR-360 format was soon made available for standalone VR headsets. This theatrical VR-360 format transported viewers into the heart of the action, immersing them in a progressive digital performance as the entire environment morphed around them in sync with the music, brought to life by the hyper-realistic avatar.

- The full-fledged VR format empowered users to tailor their experience. They could opt to be in the fan zone, directly facing Carl's avatar, join the energized virtual crowd on the dance floor, or explore the expansive lodges of the futuristic, levitating concert module in the PRISM world where Intermundium was set. Exclusive to this format, users entered Intermundium through a Shuttle, a dedicated space vessel where they could make a selection of their avatar appearance to best match their mood. Before stepping onto the showfloor, users could also spend time engaging in unscripted conversations with generative-AI avatars, extending socialization and the feeling of immersion to a new level. Once on the stage, participants could interact and converse with other users, enabling amplified emotions compared to real-life shows.
- Designed for the most advanced VR headsets, the full-fledged experience was optimized for PCVR and remained compatible with all major VR headsets currently available.
- Sensorium Galaxy's inception was made possible by cutting-edge technologies implemented by Sensorium. This included advanced photogrammetry processes for realistic avatars of the artists, top-tier motion capture tech that produced 3,500 lifelike dance movements to animate them, and a proprietary technology for creating the virtual being personalities that drove Conversational AI experiences with the Sensorium Galaxy inhabitants. All these innovations were brought to life using Unreal Engine 5, the game engine behind today's most sophisticated game titles. Within this advanced environment, artists had the freedom to unleash their art without constraints.
- Carl Cox had said, "I've always been about pushing boundaries, sharing the love of music, and enhancing electronic music culture. I truly understood what was possible when I first saw my avatar and literally did a double-take! I thought, 'This is now a reality or should I say virtual reality?' It has been really interesting to see things develop to the point where I can share my experiences with like-minded individuals anywhere on Earth or beyond!"
- Sasha Tityanko, Deputy CEO, and Art Director at Sensorium, had commented, "Within this joint exploration between Carl Cox and Sensorium, we transported both him and the spectators into a new digital realm, where creative possibilities appeared endless and the digital sky was the only limit. Backed up by the most advanced tech stack, Intermundium delivered an immersive trip into uncharted territory. That was just the beginning of our journey."
- Intermundium had been freely accessible across multiple platforms: the Sensorium website (2D Stream), Sensorium mobile app (2D Stream), and on both VR-360 and the full-fledged VR (Full-fledged VR, Desktop PC) with the VR-360 format to be launched in the near future.

# **SECTION 2 – GLOBAL INFO**

# NORTH AMERICA

### **UNITED STATES**

The leaders of the United States and China have taken significant steps to arrange a high-level meeting next month, aimed at easing tensions between the two nations.

- Following discussions between President Joe Biden and China's top diplomat, Beijing's President Xi Jinping has been invited to attend the Asia-Pacific Economic Cooperation (APEC) summit in San Francisco, scheduled for November.
- While Xi's attendance has not been confirmed, both countries have expressed their commitment to fostering positive relations through continued "high-level diplomacy."
- After talks between Chinese Foreign Minister Wang Yi and President Biden, as well as other senior US officials, the White House released a statement affirming the joint effort to facilitate a meeting between the leaders.
- The White House emphasized their dedication to this endeavour, with preparations underway for the potential meeting. While the confirmation of Xi's attendance lies with Beijing, both sides have mutually agreed to work collaboratively towards realizing this crucial encounter between the heads of state.

### **MIDDLE EAST**

### ISRAEL

Israeli Prime Minister Benjamin Netanyahu has issued a stark warning, stating that Israel's conflict with Gaza militants will be protracted and challenging. This statement came amidst escalating tensions, with Hamas demanding the release of all Palestinian prisoners in exchange for hostages it had seized three weeks earlier.

- The United Nations expressed grave concerns, cautioning that thousands more civilians in Gaza could lose their lives. Israel confirmed the continued presence of ground forces inside the Hamas-controlled territory, more than 24 hours after their initial entry on Friday.
- The International Committee of the Red Cross added its voice to the growing concern, pleading for an end to the unbearable suffering endured by Gaza's civilians.
- The conflict began when Hamas gunmen breached the Gaza border on October 7, prompting Israel to respond with a massive bombing campaign. Israeli officials reported 1,400 casualties, predominantly civilians, and more than 220 hostages seized by Hamas during the initial attack.
- The Hamas-controlled health ministry in Gaza reported a significantly higher death toll, with 7,703 people killed as a result of Israeli strikes.
- This conflict marks the fifth and deadliest confrontation in Gaza since Israel's unilateral withdrawal of troops and settlers from the Palestinian territory in 2005.

# ASIA

### BANGLADESH

Law enforcement authorities deployed tear gas and rubber bullets to disperse large gatherings of opposition supporters in Bangladesh. The incident occurred during a massive protest against Prime Minister Sheikh Hasina, resulting in hours of violent clashes in central Dhaka that led to the unfortunate deaths of a police officer and a protester.

- Over 100,000 supporters from two major opposition parties in Bangladesh gathered to demand Prime Minister Sheikh Hasina's resignation, advocating for a free and fair election under a neutral government.
- Live footage, broadcasted on the verified Facebook page of the main opposition party, the Bangladesh Nationalist Party (BNP), depicted chaotic scenes. Thousands of individuals fled for safety as sound grenades detonated consecutively, and thick black smoke billowed from the streets.

### AFRICA

### GHANA

Ghana welcomed a significant boost in its border security measures with the arrival of a fleet of 100 armoured vehicles from the European Union. This aid initiative is part of a broader effort to enhance border security in coastal West African nations, which are grappling with the overflow of violence from the Sahel region's jihadist conflicts.

- Ghana, along with its neighbouring countries Togo, Benin, and Ivory Coast in the Gulf of Guinea, faces an escalating threat due to the unrest in the Sahel. The situation worsened following coups in Burkina Faso and Niger, leading to demands from the junta in these countries for the withdrawal of French troops. This instability has heightened the risks faced by these coastal nations.
- Following a meeting with Ghanaian President Nana Akufo-Addo in Accra, EU foreign policy chief Josep Borrell announced the delivery of 105 armoured vehicles to Ghana. He emphasized that this aid package would also include aerial surveillance equipment and electronic warfare systems in the future. Borrell acknowledged that the spill-over of insecurity from the Sahel to the Gulf of Guinea countries was no longer a mere risk but an unfortunate reality. He stressed that these challenges cannot be faced alone and required collective action from partners.
- Borrell outlined the EU's comprehensive approach, indicating that their investment would not only focus on bolstering defence and security but also on initiatives aimed at job creation and essential services. Particularly, efforts would be concentrated in northern Ghana, where concerns about jihadists exploiting ethnic tensions and economic dissatisfaction to recruit Ghanaian youth are prevalent.
- In an official statement, the EU revealed that the aid provided to Ghana was part of a more extensive 616 million euros package designed to strengthen the defence and security capabilities of the four coastal countries in the Gulf of Guinea. This initiative reflects the international community's commitment to tackling the challenges posed by the spill-over of violence and insecurity in the region.

# **SECTION 3 – MIXED BAG**

# HEALTH

### **COVID Treatments Transition**

The free COVID-19 treatments provided by the federal government to millions of Americans will soon enter the private market, accompanied by a substantial price tag. Pfizer, the pharmaceutical giant, has set the price for a five-day course of its Paxlovid treatment at \$1,390. However, Americans can still obtain the pills at no cost, at least for the time being. Another COVID-19 treatment, Lagevrio, manufactured by Merck, will also become available in the private market soon.

- U.S. Health and Human Services officials have assured that pharmacies, hospitals, and doctor's offices across the country will continue to stock free, taxpayer-funded courses of these pills. People with private insurance might start experiencing copays for these treatments once their pharmacy or doctor's office exhausts its government-supplied COVID-19 treatments.
- In 2021, the U.S. government struck a deal with Pfizer, agreeing to pay over \$5 billion for 10 million courses of Paxlovid. A recent agreement between Pfizer and the federal government ensures that individuals on Medicaid, Medicare, or those without medical insurance will not incur any out-of-pocket costs for the treatment until the end of next year. Pfizer will also provide copay assistance for the treatment until 2028. The Department of Veterans Affairs, the Department of Defense, and the Indian Health Service will continue to have access to Paxlovid from the government's stockpile, which will consist of 1 million treatment courses.
- Starting next week, suppliers to pharmacies, doctor's offices, and hospitals can place orders for these treatments from the respective drug companies. Pfizer has stated its commitment to a seamless transition into the commercial market, collaborating with the U.S. government and healthcare stakeholders to ensure broad and equitable access to the medicine for all eligible patients.
- Paxlovid has been used to treat COVID-19 since 2021, and earlier this year, the Food and Drug Administration granted full approval for its use in adults with coronavirus who face a high risk of hospitalization or death. This category typically includes older adults and individuals with underlying medical conditions such as diabetes, asthma, and obesity.
- While Merck has not disclosed the list price for its Lagevrio treatment, the company has stated that it will also provide the treatment free of charge to patients who cannot afford it without assistance.
- In summary, the transition of COVID-19 treatments from government supply to the private market signals a shift in accessibility and cost. While Pfizer and Merck have established prices for their treatments, efforts are being made to ensure continued access for eligible patients, particularly those facing financial challenges.

# BOOK

### **Book On Cybersecurity For Children**

A groundbreaking illustrated children's book aiming to teach cybersecurity to young learners aged four to seven is set to launch, marking a world first. Titled "The Bongles and The Crafty Crows," this innovative book instructs children on creating passwords and passcodes using three random words. The objective is to empower children to explore, play, and communicate safely using digital technologies while safeguarding their online information.

- Developed in partnership with Education Scotland and the Scottish Government, the book is being hailed as a pioneering initiative. Every Primary One child in Scotland will receive a copy of the book in their Book Bug Bag, a distribution scheduled ahead of Scottish Book Week from November 13-19. Additionally, Gaelic language versions will be sent to schools where Gaelic is the medium of instruction.
- Scotland's Education Secretary, Jenny Gilruth, expressed enthusiasm about the project, emphasizing the importance of introducing young children to cybersecurity. In her statement, she stressed the vital role of digital technology in children's lives and the need to educate them on staying safe online. Gilruth hoped that teachers, parents, and caregivers would utilize the engaging story and accompanying learning activities to impart crucial lessons about online safety.
- "The Bongles and The Crafty Crows" follows the adventures of characters like Big Bubba, the Twins, Brainy, and Pet Robot. The book has been meticulously designed to provide teachers, parents, and caregivers with an engaging resource to teach essential cyber resilience skills. It includes a variety of learning activities and materials to enhance the educational experience.
- This book is part of a series of children's materials, including illustrated books, ebooks, and animated audiobooks, created by Story Learning. The stories revolve around The Bongles, colourful creatures residing on a paradise-like island, who reuse, repair, and upcycle objects that wash up on their shores.
- Frances O'Neill, the founder and creative director at Story Learning, highlighted the significance of using familiar children's characters to educate youngsters about online security. Unlike previous educational materials, which primarily targeted older primary and secondary school children, "The Bongles and The Crafty Crows" caters specifically to younger learners. O'Neill emphasized how the book equips both teachers and parents with an enjoyable and vibrant tool to discuss online safety with four to seven-year-olds, fostering a generation of responsible and internet-savvy citizens.
- Sophie Watson, a seven-year-old from the 18th West Lothian Beaver Scouts, shared her positive experience with the book. She emphasized how the book taught her the importance of creating responsible passwords and passcodes, discouraging the use of easy-to-guess combinations. Her enthusiasm for learning about online security reflects the book's success in engaging young readers.
- The book was officially launched at a special event held at the Abertay cyberQuarter, Scotland's renowned multimillion-pound cybersecurity research and development center at Abertay University in Dundee. Professor Liz Bacon, the principal and vice-chancellor

at Abertay University, expressed pride in supporting this groundbreaking resource, highlighting its incorporation of global best practices in the cybersecurity sector. The event marked a significant step toward creating a safer online environment for Scotland's young learners.

### ECONOMY

#### Labor Activism Surge

The United States is currently witnessing a surge in union activism, a phenomenon not seen in decades. Organized labour is capitalizing on a unique opportunity to assert its power in a tight job market. Various sectors, including automobiles, healthcare, restaurants, defence, airlines, technology, and the performing arts, are experiencing unrest. Employees in some industries have even threatened to strike, although not all have followed through on these threats.

- According to Susan Schurman, a labour relations professor at Rutgers University, workers have lacked significant leverage for many years, especially after the 2008-2009 recession. However, the situation has changed due to the pandemic and the resulting low unemployment rate, giving workers newfound strength. This shift has energized organizing efforts in numerous companies, although establishing a union shop remains challenging. Some high-profile cases, such as Starbucks and Amazon, have seen workers voting in favour of representation but struggling to secure contracts with their employers.
- This wave of activism is interconnected, with workers from different sectors observing and supporting one another, thereby pressuring employers to make concessions. These concessions can lead to improvements in wages, working conditions, job security, and other benefits for employees. Rising consumer prices have also bolstered workers' demands for higher pay, as they struggle to maintain their financial stability.
- Recent data indicates a 3.7 percent increase in consumer prices compared to September 2022, down from the 9.1 percent surge in June 2022. In response to inflation, the Federal Reserve has raised interest rates 11 times since March 2022, aiming to stabilize the economy. Strikes have become more prevalent, with the U.S. losing 4.1 million workdays in August alone, marking the highest level in 23 years, according to the Labor Department.
- Among the notable strikes, the United Auto Workers (UAW) staged an unprecedented walkout against Detroit's "Big Three" automakers—Ford, Stellantis, and General Motors. UAW President Shawn Fain demanded higher pay and restored benefits, pointing to the soaring CEO pay at these companies. The strike, characterized as a "stand-up" action, has led to gradually improved offers from the automakers, indicating the effectiveness of the strategy. The UAW recently reached a tentative agreement with Ford, including a significant 25 percent wage hike, although the deal still awaits ratification by Ford workers.
- In addition to the automotive industry, other sectors have also experienced labour activism. Major airlines like Delta, United, and American have agreed to approximately 40 percent pay boosts for pilots. However, negotiations with flight attendant unions at United and American are ongoing, potentially leading to walkouts during the holiday

season. Healthcare workers, including those at Blue Cross Blue Shield of Michigan and Kaiser Permanente, have engaged in strikes to secure better wages. Pharmacy chain Walgreens has also faced employee walkouts, while the entertainment industry has seen actors and writers engaging in strikes and contract negotiations.

• This wave of union activism reflects a significant shift in the balance of power between employers and workers, with employees across various sectors uniting to demand fair treatment, higher wages, and improved working conditions. As these labour movements continue to gain momentum, they are reshaping the landscape of labour relations in the United States.

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