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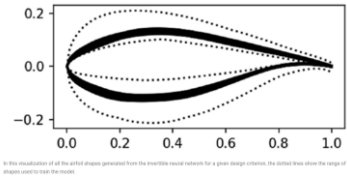
Dear Readers,

Welcome to **NewsEffect** –  
October 2023

### Newsletter Contents

- Neural Network
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# Neural Network



- [Study: Deep neural networks don't see the world the way we do.](#) Computational models known as deep neural networks can be trained to do the same thing, correctly identifying an image of a dog regardless of what color its fur is, or a word regardless of the pitch of the speaker's voice. However, a new study from MIT neuroscientists has found that these models often also respond the same way to images or words that have no resemblance to the target.
- [Invertible Neural Network Tool Helps Optimize Airfoil Design.](#) NREL researchers have demonstrated promising methods for producing rapid airfoil shape designs for wind turbines using invertible neural network (INN) tools. The approach—recently detailed in AIAA Journal—demonstrates an approximately hundredfold speedup over current methods and satisfies the performance characteristics of airfoils used in wind turbine blades. Researchers at the National Renewable Energy Laboratory (NREL) are building computational tools using artificial intelligence (AI) that can help optimize airfoil design for wind turbine blades, aircraft wings, and fan blades in natural gas turbines.
- [Next-Gen Neural Networks: NVIDIA Research Announces Array of AI Advancements at NeurIPS.](#) NVIDIA Research continues to drive progress across the field — including generative AI models that transform text to images or speech, autonomous AI agents that learn new tasks faster, and neural networks that calculate complex physics,” said Jan Kautz, vice president of learning and perception research at NVIDIA. “These projects, often done in collaboration with leading minds in academia, will help accelerate developers of virtual worlds, simulations and autonomous machines. SceneScape, a new framework using diffusion models to create long videos of 3D scenes from text prompts, will be presented as a poster. The project combines a text-to-image model with a depth prediction model that helps the videos maintain plausible-looking scenes with consistency between the frames.
- [New Type of Neural Network Reveals How Language Influences Thought.](#) The influence of language on human thinking could be stronger than previously assumed. This is the result of a new study by Professor Friedemann Pulvermüller and his team from the Brain Language Laboratory at Freie Universität Berlin. In this study, the researchers examined the modeling of human concept formation and the impact of language mechanisms on the emergence of concepts. The results were recently published in the journal Progress in Neurobiology under the title “Neurobiological Mechanisms for Language, Symbols, and Concepts: Clues from Brain-Constrained Deep Neural Networks”.
- [Researchers Create a Neural Network for Genomics—One that Explains How It Achieves Accurate Predictions.](#) A team of New York University computer scientists has created a neural network that can explain how it reaches its predictions. The work reveals what accounts for the functionality of neural networks—the engines that drive artificial intelligence and machine learning—thereby illuminating a process that has largely been concealed from users.
- [Scientists 3-D print neural networks which can potentially revolutionize biomedicine.](#) The field of mini-brain development offers various approaches, including culturing single layers of neurons in petri dishes and coaxing stem cells into 3D organoids. The Monash University team aimed to strike a balance by employing 3D printing technology, allowing for precise cell placement on recording electrodes while maintaining the flexibility for cells to organize themselves in three dimensional space. Researchers envision applications beyond drug testing, speculating on the creation of living artificial neural networks. The intersection of 3D neural networks with artificial intelligence might lead to the development of "organoid intelligence."

## Disruptive Technology Leads



• [Apple launches affordable Apple Pencil with USB Type-C charging](#)

Apple has launched an affordable Apple Pencil which comes with a sliding cap that reveals a USB Type-C port. This means that the new Apple Pencil will work with all iPad models that have a USB Type-C port. The new Apple Pencil unlocks another great option to experience the magic of digital handwriting, annotation, marking up documents, and more. It offers 'pixel-perfect' accuracy, low latency and tilt sensitivity. The new Apple Pencil has a matte finish and a flat side that magnetically attaches to the side of the iPad. When magnetically attached to the iPad for storage, the new Apple Pencil enters into a sleep state to preserve battery life.

• [Meta's new Ray-Ban Smart Glasses](#)

Meta and Ray-Ban, in partnership with EssilorLuxottica, announced their second pair of smart glasses. The Ray-Ban next-generation smart glasses come in two styles - classic Wayfarer and new Headliner - available in Matte Black and Shiny Black. And their updated features are Live Streaming, by saying "Hey Meta," users can engage with Meta AI to get information, and control features. They are IPX4 rated for water-resistance and come with improved touchpad, Improved Audio and Camera and Large battery.

• [Logitech launches new G Pro X Superlight 2 gaming mouse](#)

The newly launched mouse comes equipped with hybrid switches featuring new optical-mechanical switch technology that brings together the performance of the optical sensor and the mechanical feel that games usually like. The mouse also includes a brand new Hero 2 sensor, with tracking at over 500 inch per second and up to 32,000 DPI. The dual array design increases working range and maintains tracking performance, even when lifting or tilting the mouse. Additional features include, PRO-grade technology, USB-C, 95-hour battery life, Powerplay compatibility, a larger array size and a best-in-class 25 kilohertz maximum frame rate. In the new PRO Series products, DPI, sensitivity, report rate, surface, game settings and more are all interconnected.

• [AI-powered driverless police patrol cars](#)

The Dubai Police has unveiled its self-driving security patrol aimed at enhancing safety in residential areas. The car features an advanced camera with a 360-degree capture capability. Additionally, with its smart technology and artificial intelligence, the vehicle can detect criminal behavior, recognize faces, and read car license plates. It is an electric vehicle and its battery lasts up to 15 hours. As soon as the car spots something suspicious or fishy, it can send a message directly to the authorities. For this purpose, the patrol car is equipped with direct communication technologies, allowing it to liaise in real-time with the Command and Control Center at the Dubai Police's General Operations Department.

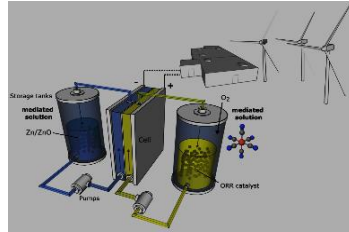
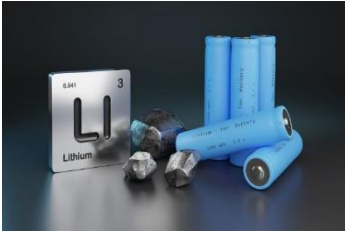
• [Qualcomm, Google partners to develop RISC-V chip for WearOS smartwatches](#)

Qualcomm has announced that it is developing a wearables platform for Wear OS, Google's operating system for smartwatches, based on RISC-V technology. The chipmaker says that this new solution will help original equipment manufacturers (OEMs) reduce their time to market when launching smartwatches. Additionally, the newly expanded framework is expected to open up new possibilities for more products within the ecosystem to leverage custom CPUs that offer better performance while consuming less power. Since RISC-V is open source, companies can freely use and modify it.

• [Mahindra Lifespaces brings India's first home-buying experience on Metaverse](#)

According to this technology, the audience can enter the Metaverse experience of Mahindra by scanning the QR code formed by the drones. This platform will then help the users to transport to their future homes, even before they made their decision to purchase. Users can also be able to interact with elements within the homes and design interiors to their liking.

## Disruptive Technology Leads (Contd.)



### [Braskem Announces Partnership With Northwestern University for the Development of CO2 Conversion Technology](#)

Braskem and Northwestern University (USA) have announced a partnership to develop a technology platform for converting the CO<sub>2</sub> generated by industrial operations. It is based on co-electrolysis, a technology that makes full use of electricity to convert CO<sub>2</sub> into products of interest. The project is led by Professor Ted Sargent and Dr. Ke Xie at Northwestern University, global experts in the field of electrocatalysis for CO<sub>2</sub> conversion. The project, currently in the development stage, aims to build a versatile and modular system with high energy efficiency. In addition to efficiency gains, this approach enables the transformation of a higher volume of CO<sub>2</sub>, substantially contributing to the reduction of greenhouse gases. The laboratory-scale development stage, which began one year ago, is expected to advance considerably in the three years of the cooperation agreement, with the potential for scaling up and use in industrial applications after the technology is validated.

### [Lumen Technologies' Quantum Fiber brand to deliver a disruptive and groundbreaking Wi-Fi 7 device](#)

Lumen Technologies (NYSE: LUMN) is ushering in a new era of wireless connectivity with the launch of a Wi-Fi 7-capable device that will soon be available to their Quantum Fiber customers. Quantum Fiber is partnering with MediaTek and its consolidated entity, Airoha, as well as AXON Networks on the device. It is expected to launch in select markets later this year. Lumen's Quantum Fiber is the first internet service provider to offer an in-house developed Wi-Fi 7 device, the latest and most advanced Wi-Fi technology. Wi-Fi 7 will offer a superior customer experience with significant improvements over the current Wi-Fi technology standard, such as faster speeds, lower latency, higher capacity, better reliability, and enhanced security. This Wi-Fi 7 device will deliver improved coverage, power, quality, and experience to its customers.

### [Lentechs Announces Successful \\$6 Million Fundraise to Further Key Development Objectives](#)

Lentechs, a clinical-stage ophthalmic medical device company developing a new generation of soft, suspended contact lens, designed to transform the treatment paradigm for presbyopia, announced the closing of a successful fundraise to further key development objectives for its investigational contact lens for patients with presbyopia. The round was led by Vision Vestments LLC, with additional significant investments from JobsOhio Growth Capital Fund, Ohio Innovation Fund, Bluestem Capital, and Rev1 Ventures. "This milestone signifies the strength and confidence in Lentechs and APIOC®, a first-of-its-kind line of soft, suspended contact lens designed to deliver exceptional, glasses-like vision at all distances with the freedom of a contact lens.

### [Nanogence cements its future with funding for no-carbon building materials](#)

Today Nanogence, a Swiss-based building material innovation company, announced that it has secured an undisclosed amount of funding from a consortium of investors led by CirCap, alongside Planet First Partners, and the EIC Fund. Nanogence is pioneering carbon-avoidance technology through material science research. It develops eco-friendly smart catalyst technology for the construction and building industry by selectively enhancing the formation of interlocking crystals responsible for binding, thus improving the strength and durability of cementitious material (characteristic in cement). This saves up to 40 percent of carbon emissions without changing the current manufacturing process.

# Advancement in AI



• [This AI Paper Introduces CLIN: A Continually Learning Language](#)

Agent that Excels in Both Task Adaptation and Generalization to Unseen Tasks and Environments in a Pure Zero-Shot Setup. Continual advancements in artificial intelligence have developed sophisticated language-based agents capable of performing complex tasks without the need for extensive training or explicit demonstrations. However, despite their remarkable zero-shot capabilities, these agents have faced limitations in continually refining their performance over time, especially across varied environments and tasks. Addressing this challenge, a recent research team introduced CLIN (Continually Learning Language Agent), a groundbreaking architecture that enables language agents to adapt and improve their performance over multiple trials without the need for frequent parameter updates or reinforcement learning.

• [As more brands use generative AI to create social content,](#)

[agencies are changing how they measure its success.](#) Some agencies and brands are measuring social media content differently — as they use generative AI in those social posts. This process will likely become even more complicated as platforms and the content's stakeholders navigate using generative AI both in content creation and measurement.

• [Neural Networks Achieve Human-Like Language Generalization.](#)

In the ever-evolving world of artificial intelligence (AI), scientists have recently heralded a significant milestone. They've crafted a neural network that exhibits a human-like proficiency in language generalization. This groundbreaking development is not just a step, but a giant leap towards bridging the gap between human cognition and AI capabilities. As we navigate further into the realm of AI, the ability for these systems to understand and apply language in varied contexts, much like humans, becomes paramount. This recent achievement offers a promising glimpse into a future where the interaction between man and machine feels more organic and intuitive than ever before.

• [CPA.com Launches Generative AI Toolkit and Resources.](#)

CPA.com, the business and technology subsidiary of the American Institute of CPAs, has added a suite of practical tools as part of its ongoing initiative to enable accounting and finance professionals to build their knowledge of generative AI and assess the opportunities and the risks of implementing the transformative technology into their practices. The GenAI initiative builds on CPA.com's efforts to help practitioners successfully navigate technology's impact on driving business model transformation and the evolution of practice areas.

• [Hypothesis-Oriented Simulation as a Compass for Navigating an Uncertain Future.](#)

Recent advances in data-driven technologies have unlocked the potential of prediction through artificial intelligence (AI). However, forecasting in uncharted territory remains a challenge, where historical data may not be sufficient, as seen with unpredictable events such as pandemics and new technological disruptions. In response, hypothesis-oriented simulation can be a valuable tool that allows decision makers to explore different scenarios and make informed decisions. The key to achieving the desired future in an era of uncertainty lies in using hypothesis-oriented simulation, along with data-driven AI to augment human decision-making.

• [Qualcomm announces Windows laptop AI-powered chip to outpace Apple's Mac processors in select tasks.](#)

The AI capabilities will also be integrated into Qualcomm's smartphone chips, as both Alphabet's Google and Meta expressed their intentions to leverage these advancements on Tuesday, as per the agency. This revelation follows a recent Reuters report indicating that Microsoft has urged Qualcomm, NVidia, and Advanced Micro Devices to develop new chips capable of accommodating a range of innovative AI features in Windows.

## IP News



• [InMode Files Patent Infringement Complaint Against BTL Industries, Inc. \(d/b/a BTL Aesthetics\)](#)

InMode Ltd. (Nasdaq: INMD), a leading global provider of innovative medical technologies, announced that it filed a patent infringement complaint in the United States District Court for the Central District of California alleging that BTL Industries' UltraFemme 360 and EmFemme 360 non-invasive, radio-frequency based feminine rejuvenation products infringe U.S. Patent No. 8,961,511. "As a pioneer in devices for women's health and wellness, InMode has committed significant research and development resources to the development of minimally invasive RF technologies," InMode's Chief Technology Officer, Dr. Michael Kreindel, commented. "In addition, InMode has acquired cutting edge technology to complement its own developments. Those efforts and investments have led to an ever-expanding intellectual property portfolio, a fundamental component of the Management Team's strategic plan to grow shareholder value. When other companies use our technology without permission, we will take swift action to vigorously protect our valuable IP."

• [Vivint hit with \\$45.4 mln verdict for infringing video doorbell patents](#)

A jury in an East Texas federal court has awarded video-doorbell company SkyBell Technologies more than \$45 million in damages after finding that home-security company Vivint [RIC:RIC:VIVNT.UL] violated its patent rights. The jury said on Monday that Vivint's doorbell camera systems infringe two SkyBell patents related to video monitoring. Jurors also found that Vivint's infringement was willful, which could lead U.S. District Judge Amos Mazzant to multiply the award.

• [Delhi HC Rules In Favour Of Strix In Infringement Suit Filed Against Maharaja Appliances](#)

The Delhi High Court recently decided in favour of Strix Ltd., a company specialising in temperature control systems and cordless interfaces for water boiling devices. The company had filed a suit against Maharaja Appliances Limited, alleging infringement of their patented "Liquid Heating Vessel." Strix Ltd. asserted that they had secured the Indian patent in 2005, but they had been using the technology since 2002. Their lawsuit was prompted by the discovery that Maharaja Appliances was selling kettles with a temperature control system similar to theirs. During the legal proceedings, an interim injunction favored Strix. Following a comparison of the suit patent's claims with Maharaja Appliances' product, Justice Prathiba M. Singh concluded that the defendant's kettles indeed violated the suit patent. The court dismissed the defendant's challenge to the patent's validity based on three prior art documents, finding that two of them did not qualify as valid prior art.

• [Roche settles US patent lawsuit against Biogen over blockbuster arthritis drug](#)

According to a filing on Monday in Massachusetts federal court, Roche settled a patent lawsuit against Biogen over its biosimilar version of the Swiss drugmaker's rheumatoid arthritis drug Actemra, as reported in Fidelity. Roche and its subsidiaries Genentech and Chugai Pharmaceutical jointly told the court without providing further details that they, Biogen and its manufacturer Bio-Thera had agreed to settle the case. Roche reported that it earned more than CHF 2.7 billion from worldwide sales of its biologic Actemra last year. Actemra sales were down 22% from 2021 based on decreased demand for the drug as a COVID-19 treatment.

## IP News (Contd.)



• [Tech giant hit with trademark lawsuit over a single alphabet:](#)

X Corp formerly known as twitter is sued by a legal-marketing company based in Florida named "X Social Media" for incorporating the alphabet X, claiming it has confused several of its customers with a decline in revenue. Elon Musk ever since purchasing twitter followed by a brand rename, found himself sued over trademark infringement lawsuit. This goes on to show its social media clout, marketing resources, and overall it's national presence affecting consumers perception of its X mark.

• [HTC to pay 8.9 million dollars in Wireless patent case:](#)

Electronics company HTC is held liable to pay over 8.9 millions dollars to in damages against willful infringement of wireless communication patents, said Delaware federal court. It held that data communication over an LTE network transgresses 3G Licensing's patent rights in similar technology. 3G Licensing claims to own over 400 patents covering wireless telecommunications technology which sued China based HTC when licensing negotiation failed to manifest.

• [Google to shield it's AI users against copyright claims:](#)

For users of generative AI systems in it's Google Cloud and Workspace platforms, google announces to protect users against intellectual property violations. Further adding its new policy applying to software, including its Vertex AI development platform and Duet AI system. Writers and illustrators, and copyright owners in several lawsuits are opposed to get their works used to train AI systems and system creating content which violate their rights, something to which AI defendant says qualify as fair used under U.S copyright aw.

• [Leaders of 'Five Eyes' accusing China of 'Intellectual Property' theft:](#)

U.S, U.K, Canada, Australia, and New Zealand, together renowned as Five Eyes accuse China of stealing intellectual property, trade secrets, and personal data across the globe. FBI director Wray notes approximately 2000 active investigations undergoing to probe on this matter. Not just government or military secrets, even data from academic research and universities are under threat as per Director General of MI5, equivalent to U.K's FBI.

• [Authors legal tussle with Meta, Bloomberg, and Microsoft in AI copyright clash:](#)

Writers and authors sue major companies for using their work without consent for training artificial intelligence systems. Controversial "Books3" dataset consisting thousands of pirated books is in question for teaching larger language models in relation to human response prompts. In a slurry of many copyright lawsuits against AI companies, comments provided in defense include the protection conferred by the U.S copyright law's fair use doctrine enabling AI companies to use data legally.

• [Intellectual property essential to pandemic accord for safety and health:](#)

German health minister Karl Lauterbach informs World Health Summit the impracticability of any pandemic agreement without intellectual property protection, adding it is imperative to acquire IP security before investing into vaccines, therapeutics, diagnostics, etc. Companies like Pfizer and Moderna argued that IP laws are necessary for them to undertake financial risk resulting in fast and efficient vaccine production to save lives across the planet.

## IP News (Contd.)



- [Cerence Files Patent Infringement Suit Against Samsung](#)

Cerence Inc. (NASDAQ: CRNC), AI for a world in motion, today announced the filing of a patent infringement lawsuit against Samsung Electronics Co., Ltd and Samsung Electronics America, Inc. in the United States District Court for the Eastern District of Texas. Cerence and its predecessors have a rich history of innovation and technological achievement, resulting in a large, international patent portfolio. The lawsuit against Samsung covers certain core Cerence technologies, including industry-leading voice recognition, handwriting recognition, and wake-up words. These technologies are foundational to Cerence's product portfolio and its work with the world's leading mobility OEMs.
- [Tecan Genomics files patent infringement lawsuits against Qiagen, Invitae, others](#)

Tecan Genomics has filed two separate lawsuits claiming patent infringement -- the first against Invitae, its subsidiary ArcherDx, and IDT (a subsidiary of Danaher); the second against Qiagen. Tecan has asserted in the first complaint that its technology is the basis for what Invitae, ArcherDx, and IDT call anchored multiplex PCR (AMP) target enrichment technology in Invitae's personalized cancer monitoring (PCM) service and ArcherDx's LiquidPlex, VariantPlex, and FusionPlex kits. Invitae sold its portfolio of ArcherDx assays to IDT in late 2022, retaining the use of the AMP technology for its PCM service.
- [Rising trademark infringement cases in Nepal due to poor IP awareness](#): With many enterprises copying the trademarks of foreign brands especially in cosmetics, apparel, electronics, beverages, due to which Nepal is facing growing concern in trademark infringement issues owing to lack of IP awareness and atmosphere as well as lack of initiatives by the government. However, government has decided to coordinate with the world intellectual property organization to provide IP training to officials in Nepal with a vision to curb these instances of safeguarding national prestige.
- [Exhibition to create IP awareness at Hanoi, Vietnam](#): An exhibit named "Recognition of Protected Trademarks" at Hanoi on 11 October, 2023 featured 500 products of leading brands alongside their counterfeit versions to educate public on real and fake products in a bid to solve the serious counterfeiting situation in Vietnam with online infringement which escalated the issue. Hands on experiences, and upfront visual impact can lead to people preventing themselves from falling into this trap.



## GLANCE @ EFFECTUAL



### Best Intellectual Property Consultant 2023



Effectual Services is pleased to inform that our beloved Director & Co-founder - Dr. Amit Goel has been recognized as the “Best Intellectual Property Consultant of the Year 2023” – for his Outstanding contribution to Nation Building, at the Indo-Global Entrepreneurship conclave, International Industry – Academia awards 2023 held on 26th October in Delhi, India.

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