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SECTOR FOCUS

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WHAT'S HOT

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HOW ARE WEARABLES EVOLVING?

When we think of wearables, it's easy to picture a fitness tracker, the latest smartwatch, or a heart rate monitor that elite athletes wear during games to monitor performance. These devices all have a single purpose: making our lives better using biometric data mapped over activity levels. However, with technology playing an even greater role in our lives, a revolution in wearable technology is underway. We will see advances in how we manage tokenised payments, enhanced digital-physical interactions, and even ways to interface with devices mentally.

TOKENISING WEARABLES PAYMENTS

Smart textiles are now available because of advancements in clothing fabrication and flexible electronics. Google launched Project Jacquard to create smart clothing that integrates touch and gesture controls for electronic devices. And MatchMove, a Singapore-based banking-as-a-service provider, partnered with Tappy Technologies, a wearable payment integrator, to introduce tokenisation into a small, flexible chip. The chip can be attached to a range of battery-less wearables and accessories such as watch straps or keyrings, turning them into secure contactless payments devices. Purchasing a playlist and then riding down a mountain on a snowboard while swiping your sleeve to change songs is here.

ENHANCING REALITY WITH SMART CONTACTS

As companies continue to explore the development of smart glasses, Mojo Vision is bringing augmented reality directly onto our eyeballs using microelectronics and contact lenses. This system is designed to be worn all day and not obstruct the view of the user. Mojo uses a term called 'invisible computing' to describe information that is displayed as needed. These smart contact lenses could show a range of pertinent information in your time of need. The augmented content could include directions to a location, airport information when you look at a boarding pass, the script for a keynote presentation, or live translations of signposts when traveling to a foreign destination.

AUGMENTING THE LABOUR WORKFORCE

Beyond smart textiles and enhanced vision, there has been renewed interest in the use of wearable exoskeletons. Car manufacturers including BMW, GM, Ford, Honda, Nissan, Toyota and Volkswagen are piloting some form of exoskeleton suit for factory line workers. When worn, these devices help to reduce worker fatigue, specifically in performing overhead work. During electromyography studies, significant reductions in shoulder and back muscle contractions translated to less muscle fatigue. The benefits of this wearable technology have resulted in fewer injuries and lower costs. While the equipment can cost as much as \$70,000, it is much less compared to the costs and impact of debilitating injuries on team members and shutting down production lines.

COMMUNICATING WITH YOUR MIND

We already see voice-first interaction with devices, but voice could evolve into brain-computer interfaces (BCIs) with wearables soon. This evolution could allow our thoughts to activate procedural commands and give us augmented powers and capabilities. For example, neuroscientists with the BrainGate consortium have been working on BCIs for years. However, they have translated the cognitive signals associated with handwriting into text in real time for the first time. This technique could enable a paralysed human to text at a rate of 16 words per minute.

And at MindX, teams are using licensed technology from the Johns Hopkins Applied Physics Laboratory that can detect signals from eye movement and brain waves to know where you are looking and what you think when you look there. Using brain neuro signals, you can even send messages to other devices.



The wearable industry will continue to evolve and payments and personal monitoring are just the beginning. The digital-physical interaction of devices, health-tech tracking and physical validation will create a new level of consumer experience.

Imagine using your smart contact lenses to summon an AI avatar for assistance. Your personal assistant could read your mind and emotions, react accordingly, giving you what you need now, and anticipate what you need next. Far from dead, wearables are just getting started./

Source: Keith Jordan via Silicon Republic

ARTIFICIAL INTELLIGENCE ENTERS BAHRAIN SCHOOL CURRICULUM

Dr Majid Al Nuaimi, the Minister of Education, said Al would be in the 2021-2022 design and technology curriculum for the second and thirdgrade of primary school. The ministry, he said, is also adding topics on the digital economy in the syllabus for business sciences for secondary students. The design and technology books account for the changing times and prepare students for more advanced curricula such as designing robots. The books on information and communication technology, the minister said, will be for all primary grades and first preparatory grades to help them keep pace with future developments. /

Source: newelectronics.co.uk



EYE TRACKING FOR AUTOMOTIVE SYSTEMS THAT TRACK DRIVERS

Tobii Group announced this week it is acquiring Phasya, an automotive systems company, for \$4.7 million. It is also working with automotive suppliers such as Sunny SmartLead and Nviso. The idea is to apply both eye tracking and AI to decipher key data points about a driver's attention and drowsiness to enhance traffic safety. It can monitor multiple people, detect emotions, review upper body movement, and gestures./

Source: newelectronics.co.uk



TO CREATE AGI, WE NEED A NEW THEORY OF INTELLIGENCE

For decades, the holy grail of **artificial general intelligence (AGI)**, computers that can think and act like humans, has continued to elude scientists and researchers. Titled, "Intelligence–consider this and respond!", the paper sheds light on the possible causes of the troubles that have haunted the AI community for decades and draws important conclusions, including the consideration of embodiment as a prerequisite for AGI. Raghavachary proposes in his paper that "intelligence is a biological phenomenon tied to evolutionary adaptation, meant to aid an agent survive and reproduce in its environment by interacting with it appropriately – it is one of considered response." The considered response theory is different from traditional definitions of intelligence and AI, which focus on high-level computational processing such as reasoning, planning, goal-seeking, and problem-solving in general./

Source: venturebeat.com



LAW FIRMS IN TAIWAN CONSIDER USING AI FOR WORK EFFICIENCY

Barry Kuo, Lawsnote founder said artificial intelligence can do or assist some works such as contract reviewing and legal compliance monitoring. Without assistance from robots, it could take an hour for paralegals to go through a contract. But with robots, it takes only five minutes. Automated legal compliance solutions are designed initially for legal professionals in the financial industry who need to go through thousands of trivial laws, codes, regulations to ensure there are zero risks in violating laws. Kuo said Lawsnote's job is to detect any changes in these laws and notify the clients./

Source: DIGITIMES



BIPEDAL ROBOT BECOMES 1ST EVER TO RUN 5K, UNIVERSITY SAYS

A bipedal robot invented and assembled at Oregon State University made history by completing a 5-kilometer (3.1 mile) race course using machine learning, according to the university. The robot, named Cassie, completed the 5K course consisting of gravel, sidewalk and fields in 53 minutes and a singular charge. In a video published by OSU, the robot stands on two human-like legs and begins to jog as a group of students and faculty follow behind. Cassie switches up her pace as she cruises through the 5K course. In the future, robots like Cassie will deliver packages, manage warehouses, and help people in their homes, according to the university./

Source: foxla.com



NLP IN HEALTHCARE AND LIFE SCIENCES MARKET WORTH \$4.3 BILLION BY 2026

According to a research report 'NLP in Healthcare and Life Sciences Market' published by MarketsandMarkets, the global NLP in healthcare and life sciences market size to grow from USD 1.8 billion in 2021 to USD 4.3 billion by 2026, at a Compound Annual Growth Rate (CAGR) of 19.0% during the forecast period. Factors such as growing need to analyze and extract insights from narrative text and huge amount of clinical data, increasing demand for improving EHR data usability to improve healthcare delivery and outcomes and the rising urge of predictive analytics technology to reduce risks and improve significant health concerns are driving the adoption of the NLP in healthcare and life sciences market across the globe./

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Source: Electronic News Publishing.

HOW AI CAN HELP DEMONSTRATE HEDGE FUNDS' ESG EDGE TO INVESTORS

Source: Hedgeweek

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The way in which hedge funds can demonstrate the value of ESG indicators within their portfolios is becoming a key task for managers of all stripes and strategies. A recent webinar, jointly hosted by FIS Global and Hedgeweek, examined how AI technology can help firms rise to the assortment of challenges arising within this sphere.

The discussion heard how ESG funds have attracted some USD340 billion of net inflows from investors over the past two years, and recent studies suggest up to three-quarters of ESG funds' outperformance is down to quality metrics.

Against that backdrop, the webinar considered how managers can better utilise data analytics and data tools to demonstrate to investors how they can generate outperformance and boost returns using ESG indicators. This includes not only ramping up their investment frameworks to better screen companies, but also strengthening the ways in which they track and report ESG factors in their portfolios.



SECTOR FOCUS | HOW AI CAN HELP DEMONSTRATE HEDGE FUNDS' ESG EDGE TO INVESTORS

Observing how ESG factors should form part of the investment hypothesis when entering into a trade, Trevor Headley, VP, product management, hedge funds at FIS Global – who has worked in technology offerings for hedge funds' front, middle and back office functions for some 15 years – said accessing timely information is key.

While a "rich ecosystem of data providers" allows hedge fund managers to utilise technology to bring data into their platforms and develop insights, this should be complemented by certain unstructured and alternative datasets.

"That unstructured data, or alternative data, is what is really going to give you the edge in terms of performance," he explained, adding that AI can serve as an enabler in this area. "Having that real-time view of how sentiment is potentially changing as it relates to some of these factors is incredibly important."

The discussion also explored how allocators' assessments of managers' research and screening processes is rapidly evolving beyond the standard measurement of sustainability factors within company practices.

"As fund selectors, we're always looking for outperforming funds and looking for why a fund is outperforming," said Sophie Outhwaite, head of equities and responsible investing at London-based Stanhope Capital. "Our starting point is that we are desperate for ESG-integrated or ESG-focused long/short funds."

Expanding on this point, Outhwaite believes that AI will become an invaluable tool in the drive for outperformance particularly within the short-selling component of hedge fund strategies.

"It may be a bold statement, but I think it's relatively easy to put together a long book of companies that you think will help the future arrive. The stock selection may be hard, but you know the themes – we have a very good idea of some of the sustainable, future-oriented, responsible themes now," she observed.

"But on the short side, the difficulty with most ESG factors is timing you don't know when regulation is going to suddenly heat up, you don't know when investor sentiment is suddenly going to turn. Al gives you the tools to be nimble."

Arnaud Langlois, portfolio manager of the 1798 TerreNeuve Fund at Lombard Odier Investment Managers in London, has been exploring sustainable investing for some 15 years, having earlier led the ESG research team at JP Morgan in 2005.

"The desire to demonstrate how ESG research can play a big role in delivering alpha has been at the centre of what I've been doing both on the sell side and the buyside for the last 12 years running money in the hedge fund space," Langlois said. "We've built our proprietary dataset that captures that. Effectively we can demonstrate that our stock selection based on our model would have probably played a big role in delivering the alpha we generated last year."



Elsewhere, the discussion touched on greenwashing, ESG integration and exclusion within portfolios, and some of the potential hurdles arising out of the explosion of datasets over the past few years. Both Outhwaite and Headley highlighted the enhanced reporting capabilities of AI.

"Longer term, we will see technology – specifically AI, and not just related to ESG – moving up the value chain from data aggregation and helping present data towards presenting more detailed insights as to how things are moving and trending," said Headley.

Langlois added: "I don't consider myself to be an expert in AI, but I can see the role that can play in the future. Our work has been centred on a few things: we continue to pursue the objective of having a net long exposure to the thematics around decarbonisation, so we've done a lot of work internally on net zero targets by 2050, developing some proprietary tools that allows us to calculate the trajectory and footprint of companies."

Headley said that while the Al-based tech capabilities have evolved, he also cautioned that there are risks, noting there are trading algorithms which often all point in the same direction.

Langlois meanwhile warned that datasets by their nature are often backward-looking, adding: "You can't rely too much on data providers to tell you what the future will look like."//



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