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AI:10

GET INSIGHTS ON AI UNDER 10 MINUTES

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WHAT'S HOT

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SECTOR FOCUS

MICROSOFT KEEPS ITS FINANCE HEAD COUNT FLAT WITH AI, BOTS AND OTHER TECH

3 AI TRENDS TO WATCH IN 2022

Of course, A.I. comes with certain challenges (like any emerging technology), especially as companies more fully operationalize it. In fact, there are at least three significant A.I. trends already on the move this year -- and I'm closely watching how these shifts will help businesses continue to navigate A.I. hurdles like removing bias and building trust.

TREND 1: ACTIONING A.I. ETHICS AND GOVERNANCE

For years, there's been discussion about eliminating bias from A.I. models. These concerns are not only prominent among industry professionals -- they're increasingly arising in mainstream media outlets as well. In 2022, we're seeing conversations about A.I. ethics and bias mitigation transition from abstract frameworks into real-world practices. This evolution is largely powered by emerging startups that provide A.I. monitoring and governance solutions for businesses. Now, a big question mark for A.I.-driven companies is whether to outsource machine learning performance monitoring to companies like Credo, Fiddler and Arize AI, or build out internal capabilities to validate, monitor and analyze machine learning models.

Don't overthink this decision. However, if your organization currently lacks the in-house expertise to properly operationalize A.I. ethics and governance, go ahead and bring on a partner who can. Many third-party solutions can implement systems that can train, validate, and analyze the efficacy of your A.I. systems, and at levels that are difficult to achieve with data offered by your customer base alone. Start simple as well, perhaps by monitoring the diversity of your training and test data or biases present in your inference results. Then you can work off of this information to intervene as required.

Over time, you can increase efforts and adopt more tools and capabilities to help eliminate bias and add model explainability. From my perspective, the important thing is that your organization is bringing A.I. ethics and governance into action now.

TREND 2: INCREASING A.I.'S ROLE IN HYBRID WORKPLACES

According to recent research from Microsoft, more than 70 percent of workers globally want flexible remote work options to continue. Hybrid work environments are here to stay - A.I. will continue to drive innovation in the future of work.

We've seen a recent rise in organizations embracing collaboration and workspace tools designed to boost engagement and happiness levels. As a next step, layering in A.I. can help you learn so much more about how your team is doing. For example, Read AI, which monitors meetings in real time to gauge who speaks the most, the overall sentiment in the "room," and other nuanced behaviors. Over time, gathering this information helps leaders improve future experiences for employees, surface helpful coaching insights, and uncover team members' skills.

The pandemic has accelerated the adoption of virtual and/or hybrid settings, and it's great to see more tools coming to market that can quantify and support social and emotional intelligence in organizations. Upgrading how you engage with employees has powerful mental health implications, too. Rightfully so, building out more helpful mental health resources remains a top priority for organizations in 2022 -- nearly 40 percent of employers expanded mental health benefits during the pandemic. It is expected for more large-scale deployment of A.I. systems that better quantify an individual's mental health needs and can provide just-in-time support -- stay tuned for more updates on that front!

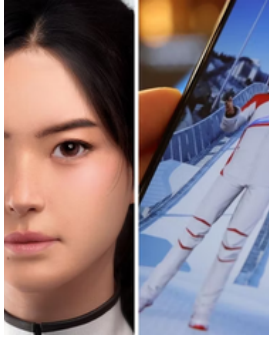
TREND 3: EXPLORING A.I. AND WEB3

A third trend is the intersection of A.I. and the emerging world of Web3, crypto, and NFTs (non-fungible tokens). One obvious area where A.I. is being applied is in synthetic data -- otherwise known as artificially created data. We're slowly seeing the application of generative adversarial networks in Web3, where one can create thousands of unique, synthetic characters to populate the metaverse. This opens the door to engineering new user experiences, and even exploring new monetization and branding opportunities (think influencers in the metaverse!)
The same goes for NFTs. While NFTs themselves still feel quite new, there are a lot of opportunities to embed A.I. and make these digital assets more interactive. Imagine intelligent NFTs (iNFTs) that have natural language understanding, perceptual capabilities, and computer vision, and therefore can engage audiences in conversations -- an iNFT telling you about its "origin story," for instance.

Amid divergent trends, there's a consistent element in 2022: keeping humans central to the A.I. equation.

Source: inc



THE WORLD'S TOP GT SPORT PROS CANNOT BEAT SONY'S GRAN TURISMO AI

Sony's artificial intelligence team published its work on a bot called "GT Sophy" in the Nature science journal. The AI is a neural network that strives for perfection on the race tracks of Gran Turismo Sport through reinforcement learning. It has trained the equivalent of over 45,000 hours and can run a race line to within one millimeter of precision. The team recently tested four GT Sophy bots against four professional esports champions. The AIs came in first, third, fifth, and seventh, beating their respective human counterparts on the eight-car grid. As it was, the bot in pole, nicknamed GT Sophy Rogue, remained in first the entire three-lap race on GT Sport's Autodrome Lago Maggiore course.

Source: techspot

STANFORD RESEARCHERS PROPOSE 'JURY LEARNING' AS A WAY TO MITIGATE BIAS IN AI

In search of a solution to the problem of annotator bias, researchers at Stanford recently investigated an approach that they call "jury learning." The idea is to model "individual voices" in training datasets toward designing a system that makes it possible for developers to explore — and ideally shift — the behavior of AI systems. Research shows that up to a third of expert annotators — most of whom originate from the U.S. and India — disagree with each other when labeling an average example. In one study, properly accounting for minority groups reduced the accuracy of an online comment toxicity detector from 95% to 73%, showing the degree to which these groups an be muzzled. Rather than silencing these disagreements, the Stanford researchers' "jury learning" technique is designed to resolve them through the metaphor of a jury. Jury learning aims to define which people or groups determine a system's prediction and in what proportion, allowing developers to analyze — and respond to — dissent.

Source: venturebeat

APPLE ACQUIRES STARTUP BEHIND INFINITE MUSIC ENGINE THAT ADAPTS MUSIC TO YOUR HEARTBEAT

Apple on Monday acquired AI Music, a startup that has developed a platform capable of creating songs using artificial intelligence. The acquisition, according to sources familiar with the matter, was completed in recent weeks. As reported by Bloomberg, AI Music's technology can create royalty-free soundtracks using AI.The soundtracks are dynamic and can change based on user interaction in real time. As an example, a song can have a different tone during more intense parts of a workout. As described by the startup's website, which has now been taken down (but you can still view it via a cached version), AI Music can even create songs that "adapt to your heartbeats."

Source: 9to5mac

ALIBABA CREATES VIRTUAL INFLUENCER FOR WINTER OLYMPICS TO HIGHLIGHT INNOVATION CAPABILITIES

Alibaba has created a virtual influencer for the 2022 Winter Olympics in Beijing that it hopes will showcase its digital innovation. The virtual influencer, called Dong Dong, is a 22-year-old woman who has human-like features and a vibrant personality and is well-versed in engaging with audiences. While her main purpose is to promote Olympic merchandise using livestreams, Dong Dong is also able to answer viewers' questions and use body gestures like dancing to communicate with them. Alibaba explained it used a wide range of tools like Text to Speech, Natural Language Processing (NLP), Emotional Speech Synthesis, and computer vision on the cloud to bring Dong Dong to life.

Source: thedrum

MAN WITH SEVERED SPINAL CORD WALKS AGAIN, THANKS TO AI IMPLANT

Rocatti had lost all feeling and motion in his legs after the motorbike crash. But thanks to electrodes implanted in their spines in experimental surgery in Lausanne, Switzerland, he and two other young men (29–41) were able to "to stand, walk, ride a bike and even kick their legs in a swimming pool" again. It is within hours of them having the flexible, multi-electrode device embedded into their spines. The device and software, developed by researchers at Lausanne University Hospital and the Swiss Federal Institute of Technology (EPFL) in Lausanne, significantly reduce the time between surgical implantation and a patient taking their first steps compared to other treatments or robotic exoskeletons, which can require extensive training to use.

Source: mindmatters

A NEW PROGRAMMING LANGUAGE FOR HIGH-PERFORMANCE COMPUTERS

A team of researchers, based mainly at MIT claim that one can, in fact, have it all. With the new programming language, which they've written specifically for high-performance computing, says Amanda Liu, a second-year PhD student at the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL), "speed and correctness do not have to compete. Instead, they can go together, hand-in-hand, in the programs we write." She described the potential of their recently developed creation, "A Tensor Language" (ATL), last month at the Principles of Programming Languages conference in Philadelphia. The language is aimed at producing either a single number or a tensor." Tensors, in turn, are generalizations of vectors and matrices. Whereas vectors are one-dimensional objects (often represented by individual arrows) and matrices are familiar two-dimensional arrays of numbers, tensors are n-dimensional arrays, which could take the form of a 3x3x3 array, for instance, or something of even higher (or lower) dimensions.

Source: news.mit.edu

AN INTERVIEW ON

SOCIAL INNOVATION

AI FOR POSITIVE IMPACT

DR. INTAN AZURA MOKHTAR

Deputy Director of Community Leadership and Social Innovation Centre (CLASIC), Singapore Institute of Technology

01 *Your thoughts and views on the disadvantaged groups on employability issues and what can be done to help them.*

Broadly speaking, those who are disadvantaged certainly face more hurdles and challenges in staying relevant in the workforce or in finding suitable employment or even in having fair employment opportunities.

For example, persons with disabilities seem to have very few options for employment, with many vacancies requiring the abilities or provisions that typical individuals without disabilities would have (eg. use of all their limbs, ability to move about easily). Another example would be for seniors or older workers, where employment seems to hinge on age and youth, rather than experience or wisdom. Older workers are deemed too expensive to hire or retain, and older workers are usually at risk of losing their job to someone younger and "more affordable" to hire.

02 *The types of schemes that could be considered and formulated by policy makers to help address employment and education issues.*

Short of legislating this, employers can look at retaining older workers in training, supervisory or mentorship roles, particularly for younger and newer employees, rather than retrenching older workers because they are "too old" or "too expensive" to retain. Much like in the education sector or academia, older workers have a wealth of knowledge and experience, as well as institutional knowledge, that can be tapped on and which can benefit younger and newer employees who can learn from them.

The government can introduce enhanced employment support schemes to help employers retain such older workers in these training, supervisory or mentorship roles.

03 *The role of technology like AI to help institutions perform their tasks to manage the disadvantaged groups across the value chain (upstream / downstream).*

AI can have a significant role to play in helping disadvantaged groups. For example, the use of AI in monitoring the safety, well-being or whereabouts of elderly persons may help alleviate some of the stresses of caregiving for their caregivers. This can be particularly helpful in monitoring elderly persons with dementia (eg. in locating where they are in case they get lost when they walk about) or monitoring the vital statistics of elderly persons living alone at home (eg. checking on their pulse, heart rate, falls, etc.).

Any trigger alarms picked up through the AI-based system can be immediately referred to the senior care centre or community hospital or primary care network provider that is nearest to the elderly person concerned, to render the necessary help.

- To be continued at the left column.

04 *What do you think will be the key success factors of using AI for this purpose?*

- One, is that the AI must be intuitive and easy-to-use for any user or caregiver to use easily and quickly, with little learning or onboarding required.
- Two, the AI must be contextualised for the local context eg. location, colloquial cues for assistance or help.
- Three, the AI must have some form of interactive elements to allow the system or software to double check with the user, to minimise potential false positives.
- Four, the AI must incorporate machine learning (ML) features as well, so that it is smart enough to adapt to the user and caregivers concerned.

05 *What type of human-machine engagement model needs to be done ? How do you maintain the balance between machines and humans for this type of beneficiary evaluation and social impact assessment?*

Most technological tools or AI-based tools are smart but seem to lean more heavily in terms of data input. Not enough is put into sustained communication and ML with the user.

Most human engagement is two-way interactive communication. Hence, any type of human-machine engagement involving AI must allow for that two-way interactive communication to happen, and where responses can be incorporated into subsequent communication and actions.

MICROSOFT KEEPS ITS FINANCE HEAD COUNT FLAT WITH AI, BOTS AND OTHER TECH

Microsoft Corp. employs about 5,000 people in its finance team, a number that has remained largely flat in recent years, even though the company's operations, profit and market capitalization have grown tremendously. Microsoft had 181,000 employees at the end of June, when its fiscal year closed, up from around 163,000 a year before.

A host of technologies, including artificial intelligence, bots, the cloud, data lakes and machine learning, are helping Chief Financial Officer Amy Hood keep a tight lid on finance head count. Cory Hrncirik, who works on Ms. Hood's team and leads Microsoft's Modern Finance initiative shared about the new tools, and why the organization still uses Excel for some tasks.

Edited excerpts follow.

WHEN DID MICROSOFT EMBARK ON ITS DIGITIZATION JOURNEY?

Mr. Hrncirik: About seven or eight years [ago], we moved all of our data to the cloud. You have to deal with looking ahead and trying to understand the future of your team. We call that strategy and forecasting. We think about the manual tasks that we have to do, and we think about how we automate those. We focused a lot about streamlining our data, creating one source of truth.

WHAT IS THE UPSIDE FOR FINANCE EMPLOYEES?

Mr. Hrncirik: We want to use technology for areas where [it] is suited to streamline and simplify the work that our people do. We want them focusing on areas that, frankly, technology still can't help us solve very well, like negotiating with business partners or looking for greenfield opportunities or managing complex projects.

HOW MUCH IS THE COMPANY RELYING ON MACHINE LEARNING?

Mr. Hrncirik: Our first foray into machine learning was in the forecasting arena. Forecasting is something that every finance group does, regardless of company or organization. For most, it takes a lot of time. For most, it's a lot of heavy lifting in Excel, and it was for us as well. Just to put that in perspective, we typically would spend about three weeks every quarter building a forecast, and we would involve a thousand people in that process, creating Excel spreadsheets in all of our subsidiaries and in all of our product teams. And then bubbling those forecasts up until they reach the CFO.

We introduced machine learning back in 2015, and within two quarters we realized that our algorithms were not only performing as well as the human-based process, but we cut our variance rate in half from about 3% to 1.5%. [Now], we can actually turn those models around in about 30 minutes.

Sector Focus: Microsoft Keeps Its Finance Head Count Flat With AI, Bots and Other Tech

THIS IS THE QUARTERLY FORECAST, CORRECT? INSTEAD OF THREE WEEKS, THAT NOW TAKES ABOUT 30 MINUTES?

That's right. We then push the insights out to our people around all of our subsidiaries. They still have a chance to look at them because they bring unique knowledge of local markets. They'll often say, "Oh, the all-up number looks perfect," but we want to adjust some of the seasonality or the split between different products or things like that. Machine learning doesn't always perform really well at the deep, granular level.

ARE THERE OTHER USE CASES?

Mr. Hrncirik: We've branched out and employed [it] in things like compliance. We employed it in speeding up our internal audit process. We employ it in predicting recessions. We use it in our treasury group for analyzing documents from governments around the world to understand possible risks. We use it even to identify which invoices can be automated and which need human intervention.

WHAT NEEDED TO CHANGE FOR THAT?

When I started my career, I [had] to connect to 50 different data sets to pull information into Excel and then manually create insights from that data. We've moved all of those data sources, actually over 100 different [ones]. We've merged [them] in a data lake, and so you merge all of that data together in the cloud. The second step is creating standard reports and analytical frameworks so that we can talk about the same business the [same] way everywhere around the world.

ARE YOU USING BOTS?

Mr. Hrncirik: The use of virtual agents was our foray into this world of artificial intelligence. It's natural language processing, either using text or voice, where this artificial intelligence is not only understanding the words that are spoken—in, by the way, over 60 languages—but also then inferring intent, and also streamlining some of their conversation into a thread. About 30% of a million [internal] queries are handled entirely through virtual agents now.

WHERE ARE YOU DEPLOYING THESE BOTS?

Mr. Hrncirik: The use of virtual agents was our foray into this world of artificial intelligence. It's natural language processing, either using text or voice, where this artificial intelligence is not only understanding the words that are spoken—in, by the way, over 60 languages—but also then inferring intent, and also streamlining some of their conversation into a thread. About 30% of a million [internal] queries are handled entirely through virtual agents now.

The algorithm also says, "Hey, by the way, we've detected an irregularity or an anomaly in this geography, or in this specific [stock keeping unit] or product area."

HOW ACCURATE IS THE TECHNOLOGY?

Mr. Hrncirik: Our error rate has gone from about 2% to less than 1%. It's so accurate because you don't have humans manually entering data into the system or manually doing some of the calculations and other things.

WILL THESE TOOLS ALLOW YOU TO BRING DOWN YOUR FINANCE HEAD COUNT?

Mr. Hrncirik: If you actually look at most finance teams, the head count grows in lockstep with business growth, and that was the case for Microsoft. Throughout our history, from the '70s, '80s and '90s, as we added additional revenue, we added more people.

The downturn of 2008 and 2009 was a catalyst for us. There was a decision made here at Microsoft to keep our [finance] head count flat. We've now done that over the past decade. Over the same time frame, our revenue has [nearly] tripled. Obviously, our market cap now is over $2 trillion, and the business is much more complex, and yet we have [roughly] the same number of people [in finance].

IS THE FINANCE ORGANIZATION STILL USING EXCEL?

Mr. Hrncirik: We love Excel, and we use it often. Excel has a place and always will have a place.

Source: wsj

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