DECEMBER 2022 | ISSUE #96

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Young Women in AI & Technology

AI:10

HEADLINE NEWS IN A FLASH

- Prediction of Alzheimer's Stages More Accurate with ML
- AI enables early detection of torn heart valve
- EU countries adopt a common position on Artificial Intelligence rulebook
- Artificial intelligence is permeating business at last
- How MIT is training AI language models in an era of quality data scarcity
- JPMorgan Uses Quantum Computing to Summarize Documents

INDUSTRY FOCUS

THE BIGGEST OPPORTUNITY

IN GENERATIVE AI IS LANGUAGE, NOT IMAGES

THE BIGGEST OPPORTUNITY

IN GENERATIVE AI IS LANGUAGE, NOT IMAGES

Source: Forbes

The buzz around generative AI today is deafening. Generative AI refers to artificial intelligence that can generate novel content, rather than simply analyzing or acting on existing data. No topic in the world of technology is attracting more attention and hype right now.

The white-hot epicenter of today's generative AI craze has been text-to-image AI. Text-to-image AI models generate detailed original images based on simple written inputs. (See here for some examples.) The most well-known of these models include Stable Diffusion, Midjourney and OpenAI's DALL-E.

It was the sudden emergence of these text-to-image AI models over the summer that catalyzed today's generative AI frenzy: billion-dollar funding rounds for nascent startups, over-the-top company launch parties, nonstop media coverage, waves of entrepreneurs and venture capitalists hastily rebranding themselves as AI-focused. It makes sense that text-to-image AI, more than any other area of artificial intelligence, has so captivated the public's imagination. Images are aesthetically appealing, easy to consume, fun to share, ideally suited to go viral.

And to be sure, text-to-image AI is incredibly powerful technology. The images that these models can produce are breathtaking in their originality and sophistication. We have explored text-to-image AI's tremendous potential in previous articles in this column, last month as well as in early 2021. Image-generating AI will transform industries including advertising, gaming and filmmaking.

But make no mistake: current buzz notwithstanding, AI-powered text generation will create many orders of magnitude more value than will AI-powered image generation in the years ahead. Machines' ability to generate language—to write and speak—will prove to be far more transformative than their ability to generate visual content.

Language is humanity's single most important invention. More than anything else, it is what sets us apart from every other species on the planet. Language enables us to reason abstractly, to develop complex ideas about what the world is and could be, to communicate these ideas to one another, and to build on them across generations and geographies. Almost nothing about modern civilization would be possible without language.

Every industry, every company, every business transaction in the world relies on language. Without language, society and the economy would grind to a halt.

The ability to automate language thus offers entirely unprecedented opportunities for value creation. Compared to text-to-image AI, whose impacts will be felt most keenly in select industries, AI-generated language will transform the way that every company in every sector in the world works.

AI LEARNS TO

WRITE COMPUTER CODE IN 'STUNNING' ADVANCE

Source: Science.org

Software runs the world. It controls smartphones, nuclear weapons, and car engines. But there's a global shortage of programmers. Wouldn't it be nice if anyone could explain what they want a program to do, and a computer could translate that into lines of code?

A new artificial intelligence (AI) system called AlphaCode is bringing humanity one step closer to that vision, according to a new study. Researchers say the system—from the research lab DeepMind, a subsidiary of Alphabet (Google's parent company)—might one day assist experienced coders, but probably cannot replace them.

"It's very impressive, the performance they're able to achieve on some pretty challenging problems," says Armando Solar-Lezama, head of the computer assisted programming group at the Massachusetts Institute of Technology.

AlphaCode goes beyond the previous standard-bearer in AI code writing: Codex, a system released in 2021 by the nonprofit research lab OpenAI. The lab had already developed GPT-3, a "large language model" that is adept at imitating and interpreting human text after being trained on billions of words from digital books, Wikipedia articles, and other pages of internet text. By fine-tuning GPT-3 on more than 100 gigabytes of code from Github, an online software repository, OpenAI came up with Codex. The software can write code when prompted with an everyday description of what it's supposed to do—for instance counting the vowels in a string of text. But it performs poorly when tasked with tricky problems.

AlphaCode's creators focused on solving those difficult problems. Like the Codex researchers, they started by feeding a large language model many gigabytes of code from GitHub, just to familiarize it with coding syntax and conventions. Then, they trained it to translate problem descriptions into code, using thousands of problems collected from programming competitions. For example, a problem might ask for a program to determine the number of binary strings (sequences of zeroes and ones) of length n that don't have any consecutive zeroes.

When presented with a fresh problem, AlphaCode generates candidate code solutions (in Python or C++) and filters out the bad ones. But whereas researchers had previously used models like Codex to generate tens or hundreds of candidates, DeepMind had AlphaCode generate up to more than 1 million.

To filter them, AlphaCode first keeps only the 1% of programs that pass test cases that accompany problems. To further narrow the field, it clusters the keepers based on the similarity of their outputs to made-up inputs. Then, it submits programs from each cluster, one by one, starting with the largest cluster, until it alights on a successful one or reaches 10 submissions (about the maximum that humans submit in the competitions). Submitting from different clusters allows it to test a wide range of programming tactics. That's the most innovative step in AlphaCode's process, says Kevin Ellis, a computer scientist at Cornell University who works AI coding.

HEADLINE NEWS IN A FLASH

PREDICTION OF ALZHEIMER'S STAGES MORE ACCURATE WITH ML

The treatment of Alzheimer's disease can be targeted with the help of machine learning. Researchers at Cornell University leveraged ML to narrow down the best treatment depending on the patient's stage of the disease, even if they weren't exhibiting any signs at all. The stages range from exhibiting normal cognitive skills to mild impairment.The model demonstrated that predicting decline was more accurate when a person was already displaying mild cognitive impairment. When an individual seems cognitively normal, the model is less accurate for a future time range. The study was published in the journal PLOS ONE. Electrical and computer engineering doctoral student Batuhan Karaman at Cornell University is the lead author.

Source: AI Business

EU COUNTRIES ADOPT A COMMON POSITION ON ARTIFICIAL INTELLIGENCE RULEBOOK

EU ministers green-lighted a general approach to the AI Act at the Telecom Council meeting on Tuesday (6 December). EURACTIV provides an overview of the main changes. The AI Act is a flagship legislative proposal to regulate Artificial Intelligence technology based on its potential to cause harm. The EU Council is the first co-legislator to finish the first step of the legislative process, with the European Parliament due to finalise its version around March next year. "The Czech presidency's final compromise text takes into account the key concerns of the member states and preserves the delicate balance between the protection of fundamental rights and the promotion of uptake of AI technology," said Ivan Bartoš, Czechia's Deputy Prime Minister for Digitalisation.

Source: Euractiv

HOW MIT IS TRAINING AI LANGUAGE MODELS IN AN ERA OF QUALITY DATA SCARCITY

Improving the robustness of machine learning (ML) models for natural language tasks has become a major artificial intelligence (AI) topic in recent years. Large language models (LLMs) have always been one of the most trending areas in AI research, backed by the rise of generative AI and companies racing to release architectures that can create impressively readable content, even computer code. Language models have traditionally been trained using online texts from sources such as Wikipedia, news stoies, scientific papers and novels. However, in recent years, the tendency has been to train these models on increasing amounts of data in order to improve their accuracy and versatility.

Source: VentureBeat

AI ENABLES EARLY DETECTION OF TORN HEART VALVE

A recent study unveiled that AI can spot aortic dissections – a tear in the heart valve with a high fatality rate if not treated early – with great accuracy, which can lead to faster patient treatments. According to diagnostic AI firm Viz.ai, its deep learning algorithm was trained on more than 1,300 CT angiography scans from patients in over 200 U.S. cities, the results of which were presented at the VEITHSymposium. "Automated detection may have a positive downstream effect on patient triage, leading to accelerated care coordination, earlier diagnosis, timely initiation of life-saving interventions and better patient outcomes," said the study's authors. The software accurately detected aortic dissections with approximately 94% sensitivity and excluded negative cases with more than 97% specificity.

Source: AI Business

ARTIFICIAL INTELLIGENCE IS PERMEATING BUSINESS AT LAST

The machines are coming for your crops—at least in a few fields in America. This autumn John Deere, a tractor-maker, shipped its first fleet of fully self-driving machines to farmers. The tilling tractors are equipped with six cameras which use artificial intelligence (ai) to recognise obstacles and manoeuvre out of the way. Julian Sanchez, who runs the firm's emerging-technology unit, estimates that about half the vehicles John Deere sells have some ai capabilities. That includes systems which use onboard cameras to detect weeds among the crops and then spray pesticides, and combine harvesters which automatically alter their own setting to waste as little grain as possible. Mr Sanchez says that for a medium-sized farm, the additional cost of buying an ai-enhanced tractor is recouped in two to three years. A survey by McKinsey, a consultancy, found that this year 50% of firms across the world had tried to use ai in some way, up from 20% in 2017.

Source: Economist

JPMORGAN USES QUANTUM COMPUTING TO SUMMARIZE DOCUMENTS

JPMorgan Chase researchers have successfully demonstrated using quantum algorithms to summarize documents using natural language processing (NLP).
Banks often need to provide summaries of documents for their customers that might otherwise be too long to read. They automate this using a process called extractive summarization, which uses NLP to extract sentences that represent the most relevant information from the original text. NLP enables computers to understand text and spoken words like humans using artificial intelligence. It is a potential use case for quantum computing as it is a complex optimization process, an application particularly suited to quantum algorithms.

Source: VentureBeat

CATALYST

CE.A.I. Centre for AI Innovation

Y:WAIT

Young Women in AI and Technology

Who are we?

Y:WAIT is a student-led organisation built to support young women in STEM involved in the application of AI, Sciences and Technology in the work we do.

What can you expect?

- Global mentorship and advisory network
- Company visits catered to young students interested in pursuing careers in the technology industry
- Seminars and webinars with esteemed speakers from all over the globe
- Nationwide & Gglobal competitions/hackathons designed to encourage innovation in AI, especially for female youths

What is our purpose?

Raise awareness and promote interest about young women in STEM, create new and innovative ideas, build connections and partnerships within the industry and form new ventures that create impact; a movement that encourages the question: why wait?

https://ceaiglobal.com/ywait/

YWAIT.CO@GMAIL.COM
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COMING SOON!

BREAKING THE GLASS CEILING FOR YOUNG GIRLS IN AI

AN INTERVIEW WITH KIERA NADINE,
PRESIDENT & CO-FOUNDER OF Y:WAIT (YOUNG WOMEN IN AI AND TECHNOLOGY)

Source: CEAIt

Young girls in STEM are often excluded from the conversation about AI and technology, but that's not because they're not interested. It's because the technology and its impact on people is often seen as intimidating or intimidating. According to a recent study by the Center for Information Technology Leadership, only 4% of women who worked in AI engineering and technical roles between 2007 and 2012 said they were satisfied with their job.

That's not surprising, considering that only 20% of artificial intelligence PhDs are women, and only 15% of all computer scientists are women. And that's just for starters. The stats keep getting worse: According to the National Center for Women & Information Technology (NCWIT), less than 5% of women hold leadership positions in tech companies, less than 15% of computing degrees go towards women-only classes, and only 7% of computing jobs are open to women (compared with 27% for men).

We also know that women have been under-represented in STEM fields for decades—and even though things have changed slightly (for example, when it comes to bachelor's degrees), it doesn't feel like women are getting enough credit for their work in these areas. The truth is: if we want more women working in STEM fields and making changes in our world, we need to start talking about them—and trying new ways to engage them with these topics.

Young girls in STEM are currently reacting to AI with a mixture of excitement and apprehension. They are excited because they see the potential for good, but apprehensive because they don't know how to navigate any challenges that may arise. AI is scary for young girls because it's not something they've encountered before. They have no frame of reference for what it means, or how they should respond to it. This is why it's so important that young girls have exposure to AI and technology early on in their education, whether that's through a hands-on experience or through classes at school. It helps them understand why AI is important, and gives them an opportunity to discuss it with their teachers and peers so they can start thinking about how they want to shape their careers.

Y:WAIT Young Women in AI and Technology
CE.A.I. Centre for AI Innovation

WOMEN INNOVATIONS GLOBALLY

HOW HIRING MORE WOMEN IT EXPERTS IMPROVES CYBERSECURITY RISK MANAGEMENT

At this point, it's no secret that cyber risk is a huge issue in the tech industry. While there are many factors that contribute to this, one of the most important things for companies to consider is how board gender diversity affects their ability to manage cyber risk effectively. In fact, a recent study from University of California Berkeley found that when women are on a company's board of directors, cybersecurity improves. The researchers found that women IT experts on boards result in improved cyber risk management—board monitoring, management supervision and corporate governance in particular.

Source: Flipboard

AFFECTIVA: BUILDING AI THAT READS HUMAN EMOTIONS

As the amount of data we collect increases, companies are leveraging advanced analytics to drive insights also from the most unusual sources of data, including people facial expressions or speech. Emotion AI combines analysis of both face and speech as complementary signals to provide richer insight into the human expression of emotion. Affectiva, is a pioneer in this space. By using a standard webcam, Affectiva can identify a face and its key landmarks to classify facial expressions into seven main emotions. With pre-recorded audio, speech detection can be integrated as well, with the ability to classify “how” something is said, with a frequency of few hundred millisecond. With about six million faces analyzed in 87 Countries, data accuracy is in the high 90th percentile.

Source: Harvard

NTEL EXEC HUMA ABIDI ON THE URGENT NEED FOR DIVERSITY AND INCLUSION IN AI

The gender gap in the technology field is still a problem, but there are signs of hope. The talent pool of young women in STEM/AI is expanding, and some of them are already making waves in their respective fields. One example is Huma Abidi, senior director of AI software products and engineering at Intel. Huma Abidi has been working with AI for years and has seen an increase in the number of women who want to pursue careers in tech. She said the industry has made progress toward closing the gender gap in recent years by increasing its efforts to recruit more female employees and by creating programs that encourage women to pursue higher education degrees related to computer science.

Source: VentureBeat

THE TECH FIELD’S UNCONSCIOUS BIAS ON WOMEN AND WHAT WE CAN DO ABOUT IT

Women in the tech field face a number of obstacles, but one that may be particularly difficult for them to overcome is the tech-industry's culture of male-dominated hiring, making it difficult for them to find jobs in the industry—especially if they want to advance their careers. This is where equal opportunity should come into play: promoting policies that encourage diversity in their workplace, which increases efficiency and promotes creativity within the workplace. It's important for companies to create an environment where employees feel safe enough to bring up concerns about gender bias or other issues related with gender inequality, by providing opportunities for employees who aren't sure how far they'll go with their careers.

Source: Tech In Asia

WHAT IS IDENTITY RESOLUTION? ITS BENEFITS, CHALLENGES AND BEST PRACTICES

*I*dentity resolution is defined as the process of linking online activity and information from many data sources to specific users. There are many benefits of identity resolution. It allows companies to keep their data secure and safe, while offering a better user experience for all users. The challenges of identity resolution include keeping up with compliance requirements, managing servers and databases, and maintaining security across networks.

Source: VentureBeat

WOMEN IN AI: WHOSE VOICE SHOULD BE LOUDEST IN THE DIVERSITY CONVO?

Women's voices are often marginalized in the technology industry. They're not granted the same opportunities as their male counterparts, and when they do succeed, it's with a lot of help from other women. We've all heard about the glass ceiling that keeps women from reaching the highest ranks in their companies. But what if we told you that there were ways to shatter this barrier? One way is by getting involved with diversity initiatives that help bring more women into tech fields.

Source: VentureBeat

CATALYST

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MyFinB is an award-winning tech company that specializes in artificial intelligence. The company developed its own natural language platform with predictive and prescriptive narrative capabilities - a niche area that differentiates itself from any others. MyFinB helps people understand and communicate what is most important in their data. By transforming data into insightful, human-like language, the company's natural language technology enables people to be data-driven and make better decisions, focus talent on higher-value opportunities, and create differentiated products.

Website: www.myfinb.com Email: enquiry@myfinb.com

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AIV50 is a tech venture company with a portfolio of 50 AI assets in 10 key verticals. The special purpose company forms part of a joint incubation and venture building project by MyFinB Group (MFB) and VSC Portfolio Investments (VSCPI).

Website: www.aiv50.com Email: ventures@aiv50.com

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Global Chamber's vision is a world where doing cross metro and cross border business is as easy as selling across the street. It also provides members with virtual connections, training, and information just right to grow... helping members connect with customers, partners and experts to grow across metros and borders. When members engage with Global Chamber, risk is reduced, and growth accelerates.

Website: www.globalchamber.org

Knowledge Chamber of Commerce And Industry

KCCI is a non-government, not-for-profit organization registered under the Central Government's Ministry of Corporate Affairs playing a proactive role in India's development process and become aKnowledge voice of India's business and industry.

Website: www.knowledgechamber.org
Email: info@knowledgechamber.org

Suryadatta Education Foundation

The Suryadatta Education Foundation, SEF, is a charitable trust registered with the Registrar of Societies, Government of Maharashtra. The Suryadatta Group of Institutes was established in the year 1999, with the blessing of Late Smt Ratanbai & Shri Bansilalji Chordiya in Pune - The Oxford of East.

Website: www.suryadatta.org Email: info@suryadatta.edu.in

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Website: www.yudiz.com

Federation of Indian Chambers of Commerce & Industry (FICCI)

Established in 1927, FICCI is the largest and oldest apex business organisation in India. Its history is closely interwoven with India's struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global economies. A non-government, not-for-profit organisation, FICCI is the voice of India's business and industry.

Website: www.ficci.in

Entrepreneurship Development Institute of India

- A National Resource Institute in Entrepreneurship Education, Research, Training & Institution Building. Promoted by IDBI Bank Ltd; IFCI Ltd, ICICI Ltd, SBI and Govt. of Gujarat.
- Pioneered the Entrepreneurship Development Programme (EDP) Model.
- Ranked as Number 1 by Atal Ranking of Institutions on Innovation Achievements (ARIIA) – 2021 in General (Non-Technical) Category. The only institute from Gujarat to be ranked as Number 1 across all seven categories.

Website: www.ediindia.org

Women Entrepreneurship Cell

Women Entrepreneurship Cell under Kadi Sarva Vishwavidyalaya (KSV), managed by Sarva Vidyalaya Kelavani Mandal, Kadi and Gandhinagar, Gujarat, India, established in 2016, to ignite the spirit of Entrepreneurship amongst our students. In the current era, countries should create more support systems for encouraging entrepreneurship among students. At the same time, it is to foster gender equality to break away from stereotyped mindsets.

Website: www.wecksv.org

Kadi Sarva Vishwavidyalaya

Kadi Sarva Vishwavidyalaya is a University established vide Gujarat State Government Act 21 of 2007 in May 2007 and approved by UGC (ref F. 9-18/2008(cpp-1) March 19,2009). The University has been established by Sarva Vidyalaya Kelavani Mandal to achieve the following objectives: To provide need-based education and develop courses of contemporary relevance. To be a University of excellence by providing research-based activities which would foster higher economic growth. To provide education to all irrespective of caste, creed, religion etc. The University has at present 19 Constituent Colleges/Departments at Gandhinagar and Kadi.

Website: www.ksv.ac.in

BE PHENOMENAL

Dr. Rachana specialized in Cosmetic Dentistry from State University of New York. After rendering her services to the medical field and its beneficiaries for a decade, she decided to contribute to her family business when she did her MBA from Nirma University with Gold Medal. Furthering the growth of human centric business approach, she successfully completed her course in Executive Education in Design Thinking from Stanford University.

Website: bephenomenal.co.in

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MyFinB is an award-winning tech company that specializes in artificial intelligence. The company developed its own natural language platform with predictive and prescriptive narrative capabilities - a niche area that differentiates itself from any others.

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The Centre for AI Innovation (CEAI) forms part of MyFinB Venture's portfolio of innovative, disruptive projects to guide and support the digital transformation initiatives by organisations and business innovators.

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'The AI World Summit: Where Innovators & Disruptors Meet to Challenge Limits' brings together the global AI community from a range of businesses, science and tech to go beyond the buzz and hype, discuss the most burning AI issues, share their developments, successes, challenges, and the resultant impact on their businesses.

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