INDIA FUTURE FOUNDATION

Freedom of Expression, Trust and Safety on the Internet

IN THE SPOTLIGHT

BHASHINI TO BE OFFERED TO SCO

During a virtual summit of the Shanghai Cooperation Organisation (SCO), Narendra Modi, Prime Minister of India, expressed his support for sharing India's AI-based language platform, Bhashini, with member countries of the international grouping. The platform aims to eliminate language barriers and promote inclusive growth through the power of digital technology.

The SCO, founded in 2001, by the presidents of Russia, China, the Kyrgyz Republic, Kazakhstan, Tajikistan and Uzbekistan, welcomed India and Pakistan as permanent members, in 2017. At present, the official languages within the SCO are Mandarin and Russian.

PM Modi underscored the importance of India's AI-based language platform during his address, expressing the country's willingness to share Bhashini with all SCO member countries to address language barriers within the organization. He highlighted the platform as an exemplary use of digital technology for fostering inclusive growth.

India's proposal to offer the Bhashini language platform reflects its commitment to leveraging advanced technologies to bridge linguistic divides and foster collaboration among SCO member countries.

The inclusion of additional languages, such as English, has been a matter of discussion within the SCO, and India has consistently advocated for its recognition as an official language within the alliance.

By sharing the Bhashini language platform, India aims to contribute to a more inclusive and accessible communication framework within the SCO, enabling seamless interactions and cooperation among member nations.

NEWS FROM AROUND THE WORLD

GENERATIVE AI: PROJECTED ECONOMIC GAINS AND SOCIETAL IMPLICATIONS

A new report by management consultancy McKinsey reveals the potential economic impact of generative AI, projecting that it could contribute between USD 2.6 trillion and USD 4.4 trillion to the global economy annually. This would account for approximately 2-4 per cent of the world's combined gross domestic product (GDP). The report examined adoption scenarios and assessed the technology's potential to automate tasks across various occupations.

The high-tech sector is expected to benefit the most from generative AI, with a potential increase in its value by 4.8- 9.3 per cent if universally adopted. Other sectors such as banking, education, pharmaceuticals and telecommunications could also experience significant growth, with value boosts ranging from 2-5 per cent. The report identifies sales and marketing, software engineering, customer operations, and product research and development as the key areas that could generate 75 per cent of the total economic gains.
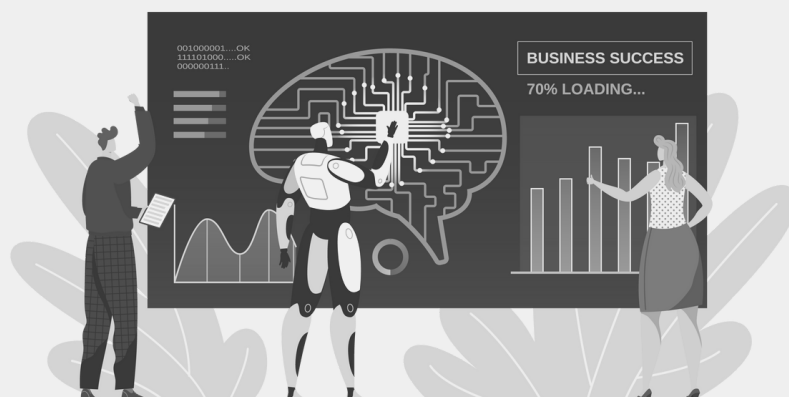
However, the increasing automation potential of generative AI raises concerns among the general public. A CNBC survey found that 24 per cent of workers in the US expressed worry that AI could render their jobs obsolete. This anxiety was more prevalent among younger individuals, minorities and those with lower incomes. The study predicts that generative AI could automate 50 per cent of all work tasks between 2030 and 2060, particularly those involving logical reasoning and natural language generation.

While the prospective economic gains are promising, it is crucial to consider the broader context. There is a real risk that AI's automation capabilities could leave many people unable to contribute significantly to the economy. To mitigate this, the report suggests democratizing the technology to ensure widespread benefits and enabling collective decision-making.

The impact of generative AI is already being felt in venture investments, indicating potential disruptive effects in the future. However, it is important to address the potential challenges associated with job displacement and ensure that AI is harnessed in a way that benefits society as a whole.

MIT-PILLAR AI COLLECTIVE FUNDS PROMISING AI RESEARCH PROJECTS

The MIT-Pillar AI Collective has announced the recipients of its inaugural seed grants. Six teams, comprising of students, alumni and postdocs, were selected for their innovative research in artificial intelligence (AI), machine learning (ML) and data science. The grants provide funding and support for projects that have the potential to lead to commercially viable products or companies.

The programme, launched in September 2022 with a USD 1 million gift from Pillar VC, aims to cultivate prospective entrepreneurs and drive innovation in AI-related fields. Administered by the MIT Deshpande Centre for Technological Innovation, the AI Collective focuses on the market discovery process, guiding projects through market research, customer discovery, and prototyping. Additionally, the programme provides mentorship, guidance, and community events to the grant recipients.

The selected projects cover a wide range of applications. Abdullah Alomar, an electrical engineering and computer science PhD candidate, is developing a predictive query interface for time series databases, which could improve demand and financial data forecasting. Simon Axelrod, a chemical physics PhD candidate, combines AI with physics simulations to design light-activated drugs, potentially minimizing side effects and increasing effectiveness. Arjun Balasingam, a PhD student in electrical engineering and computer science, is working on MobiSee, a technology enabling real-time 3D reconstruction in dynamic environments using AI and mobile devices. Guillermo Bernal, a recent PhD graduate in media arts and sciences, is creating Fascia, a sleep therapeutic platform that allows remote sleep studies and personalized therapy plans. Michael Foshey, a mechanical engineer, aims to develop an AI-enabled tactile perception system for robots, improving their dexterity and automating assembly tasks in manufacturing. Vibhaalakshmi Sivaraman, an electrical engineering and computer science PhD candidate, is working on Gemino, a generative technology to facilitate video conferencing in low-bandwidth network environments.

The MIT-Pillar AI Collective's seed grants not only provides for financial support but also equips recipients with essential mentorship and guidance. By bridging the gap between academia and industry, the programme empowers aspiring entrepreneurs to transform their research into practical applications and potentially launch successful startups.
The chosen projects reflect AI Collective's commitment to fostering entrepreneurship and driving innovation in the rapidly advancing field of AI. With the support of the MIT-Pillar AI Collective, these visionary researchers are poised to make groundbreaking contributions that could revolutionize a range of industries, from healthcare to manufacturing and beyond.

INFLECTION AI, CLOSES USD 1.3 BILLION FUNDING ROUND

Inflection AI, a startup focused on creating personalized AI experiences, has secured a significant investment of USD 1.3 billion. The funding round was led by prominent investors including Microsoft, Reid Hoffman, Bill Gates, Eric Schmidt, and new investor Nvidia. With this investment, Inflection's total raised capital reaches USD 1.525 billion, valuing the company at USD 4 billion.

Inflection AI, founded by Mustafa Suleyman, co-founder of Google-owned DeepMind, aims to develop its first product, an AI-powered assistant called Pi. The funding will support the company's efforts in building and designing Pi, which is intended to provide personalized knowledge and support, based on individual interests and needs.

Pi is described as a "kind" and "supportive" companion, offering friendly advice and information in a natural and flowing style. Inflection-1, the AI model powering Pi, has shown competitive or superior performance compared to models such as OpenAI's GPT-3.5 and Google's PaLM-540B in various measures, but it falls behind in coding tasks.

To develop larger and more capable AI models, Inflection is collaborating with Nvidia and CoreWeave, a GPU cloud provider, to create one of the world's largest AI training clusters. This cluster will consist of 22,000 Nvidia H100 GPUs.

With this latest investment, Inflection becomes the second-best-funded generative AI startup after OpenAI. The continued influx of capital into generative AI startups demonstrates the industry's potential and attractiveness to investors, with significant deals taking place in the sector.

OPENAI FACES A CLASS ACTION LAWSUIT OVER DATA TO TRAIN AI

OpenAI, the company behind the ChatGPT AI chatbot, is facing a class action lawsuit in California. The lawsuit accuses OpenAI of misappropriating personal information for training purposes without compensation. The complaint lists multiple causes of action, including violations of the Computer Fraud and Abuse Act, the Electronic Communications Privacy Act, and state consumer rights laws.

The plaintiffs argue that OpenAI "stole" their private information from the public Internet to train and develop ChatGPT. They claim that OpenAI's actions violated their privacy by using personally identifiable information. The identities of the plaintiffs were not fully disclosed in the complaint to avoid intrusive scrutiny.

In addition to seeking monetary damages, the plaintiffs are requesting corrective actions, including the establishment of an independent AI council for governance and open access to all personal information collected by OpenAI.

The lawsuit could test whether the use of data from the public Internet for AI training constitutes fair use under US copyright law. Another class action lawsuit filed by authors from Massachusetts directly alleges copyright violations by OpenAI for using their material to train AI models.

OpenAI has not yet responded to requests for comment on the lawsuit.

4 KEY TRENDS SHAPING THE FUTURE OF FINANCIAL TECHNOLOGY

The fintech sector in India has witnessed remarkable growth in recent years, revolutionizing the way financial services are accessed and utilized. With advancements in technology, particularly in AI, the future of fintech looks promising. Here are the four key trends that are reshaping the fintech landscape in the age of AI.

Personalized Lending Models

Ensuring financial inclusion and expanding access to loans and credit are crucial goals for the fintech industry. Alternative lending start-ups are leading the way by leveraging technology and data analytics to create personalized loan and credit options. These start-ups consider non-traditional criteria, such as rental history or utility payments, when providing mortgage loans. By tailoring their services to individual needs and circumstances, these alternative lenders are expanding opportunities for home ownership and fostering financial inclusivity. Additionally, machine learning algorithms help these start-ups detect and prevent financial fraud, safeguarding consumers' financial information.

AI-Driven Experiences

AI technology is transforming the banking industry by delivering highly personalized customer experiences. Traditional banks are facing stiff competition from fintech companies that leverage AI to offer better customer interactions. Through open banking APIs, fintech firms can access bank accounts and debit cards, providing them with a competitive advantage. By analyzing customer data using AI algorithms, banks can offer tailored recommendations and solutions, ultimately improving customer satisfaction.

Embedded Finance

One of the most significant trends gaining traction is embedded finance, which involves integrating financial services into non-financial products or services. This innovation allows companies to offer a seamless user experience by incorporating banking services into e-commerce platforms or insurance offerings into ride-sharing apps.

New age banks and Embedded Finance

New age banks also called neobanks which are digital banks operating exclusively online, are gaining popularity among tech-savvy young consumers. Offering lower fees, user-friendly interfaces and flexible payment options, neobanks prioritize mobile banking and provide dedicated apps for managing finances on the go. They often include features for budgeting, tracking spending and even buy now, pay later (BNPL) services. New age banks are now embracing embedded finance, integrating financial services into non-financial platforms, which further expands their appeal. This integration allows users to access banking services seamlessly while using other digital products or services.

STABILITY AI CEO PREDICTS AI TO REPLACE PROGRAMMERS WITHIN FIVE YEARS

Emad Mostaque, the CEO of Stability AI and the creator of Stable Diffusion, has made a bold prediction that there will be no programmers within the next five years. Mostaque's statement highlights the increasing dominance of AI tools, such as ChatGPT, in the field of programming.

During an interview with author Peter H Diamandis on the show "Why AI Matters And How To Deal With The Coming Change," Mostaque expressed his vision for the future of AI and its potential impact on human roles. He suggested that the prospects for human programmers appear bleak, underscoring the profound transformation that AI tools are poised to bring about.

To support his claim, Mostaque referred to data from GitHub, which revealed that 41 per cent of all code currently in existence is AI-generated. He further emphasized on the growing popularity of AI by stating that it surpassed Bitcoin and Ethereum on GitHub within just three months.

Mostaque also made another intriguing prediction, stating that by the end of the next year, individuals will have access to ChatGPT on their smartphones without the need for Internet connectivity. This assertion signifies a significant shift in technology usage, with AI assuming an integral role in various aspects of daily life.

GOOGLE'S PRIVACY POLICY INDICATES UTILIZATION OF PUBLICLY AVAILABLE DATA FOR AI MODEL TRAINING

Google's updated privacy policy has revealed the company's intention to employ publicly available Internet data to train its language models, including the development of its large language AI model called Bard. The policy indicates that Google will utilize publicly accessible information to enhance its services and create new products and features that benefit both users and the public.

According to a report by Gizmodo, Google's use of publicly available data for training its AI models extends to products such as Google Translate, Bard and Cloud AI capabilities. By leveraging this data, Google aims to improve the performance and functionality of its generative tools.

However, this approach has raised concerns about the exploitation of the openness of the Internet. Some argue that limitations, such as the Twitter (read limit enforced by Elon Musk), are necessary to prevent companies from scraping data from platforms to train their AI models. These limitations restrict data access for both individuals and corporations.

Furthermore, the recent introduction of charges for accessing Reddit's API is seen as an effort to prevent companies from freely harnessing data from subreddits. The use of publicly available data for training AI models has sparked discussions surrounding copyright issues and the concentration of Internet control within a few entities.

While Google's utilization of publicly available data offers advantages in developing advanced language models, it also raises important questions about data access, ownership, and the ethical use of publicly shared information. As the company continues to refine its AI capabilities, balancing privacy concerns and innovation will be paramount in building trust with users and the wider public.

AXEL SPRINGER IMPLEMENTS AI TECHNOLOGY, DOWNSIZES WORKFORCE IN NEWSROOM RESTRUCTURING

Axel Springer, a prominent German media company, has attracted attention with its recent announcement of laying off 20 per cent of its newsroom staff and exploring the replacement of certain employees with artificial intelligence (AI) technology. The decision reflects the organization's strategic shift towards a "digital-only" approach under the leadership of CEO Mathias Dopfner, who has initiated transformative changes aligning with the growing influence of AI in the media industry.

In a memo circulated by the publisher, it was revealed that positions such as editors, photo editors, proofreaders, and other roles involved in print production would undergo significant transformations or will be phased out entirely. This restructuring will primarily impact Bild, one of Europe's best-selling newspapers, among other multimedia news brands owned by Axel Springer, including Welt, Politico, and Insider.

While approximately 200 out of 1,000 Bild employees are expected to be affected by the job cuts, a spokesperson from the company clarified that the layoffs were not directly tied to AI technology. Instead, AI is viewed as a time-saving and valuable tool that can assist editors and reporters in their work.

Axel Springer's decision to incorporate AI technology and downsize its workforce reflects the ongoing discussion surrounding the impact of automation on traditional roles within various industries, including journalism. The outcome of these changes will shape the future of the media landscape, as well as the evolving relationship between AI and human professionals. By leveraging AI tools, Axel Springer aims to optimize its operations and ensure exceptional original content creation to thrive in the digital era.

As AI continues to advance, the media industry and professionals within it will need to navigate the transformative landscape, embracing the potential of AI while preserving the value of human expertise and creativity in journalism.

NEWS FROM INDIA

INDIA SET TO REGULATE AI, BIG TECH WITH DIGITAL INDIA ACT

India's long-awaited Digital India Bill is set to bring comprehensive regulations to the digital space, covering areas such as AI and online content. Consultations for the Bill began in March 2023, and the draft is expected to be introduced in early June. One key focus of the legislation will be the regulation of AI systems, with the aim of addressing user harm. The draft law is also expected to address online content moderation, including measures against "fake news" on social media and age-based restrictions on addictive services. Changes to safe harbour provisions and the establishment of a government-operated fact-checking service are also under consideration.

In addition to the digital regulations, there are also plans to roll out a roadmap for semiconductor research and development (R&D), in the country. The roadmap will cover areas such as system packaging, chiplet architectures, technology and collaborative frameworks, aiming to strengthen India's semiconductor R&D ecosystem. The comprehensive nature of the Digital Act and the semiconductor strategy are expected to spark debates and controversy, both within India and internationally. Content takedown powers and fact-checking have already faced opposition within the country, with concerns about potential misuse against political opponents. Meanwhile, Big Tech companies and lobby groups argue that the proposed regulations may hinder the development of India's tech sector. Nevertheless, India is determined to establish its own digital regulations while ensuring the growth of its tech industry.

INDIA'S POSITION IN THE GENERATIVE AI RACE

India's technology ecosystem is striving to make its mark in the competitive field of generative AI, but faces challenges in catching up to global leaders. Despite a vibrant startup ecosystem, Indian contenders have yet to emerge as significant players in the rapidly advancing AI arena. Large language model giants like OpenAI's ChatGPT and Google-backed Anthropic continue to dominate this field. However, many Indian startups are utilizing machine learning to enhance various aspects of their business operations, such as customer experiences, payment fraud prevention, and accessible education.

Lack of AI-first startups, in India, can be attributed, in part, to a skills gap in the workforce. The advent of generative AI has the potential to disrupt many service jobs, creating a need for upskilling and resource optimization. While automation may not be a priority in sectors like agriculture and manufacturing, the services sector stands to benefit the most. Consultancy giants like Infosys and Tata Consultancy Services (TCS) are already exploring generative AI projects to address specific business needs of their clients.

India's approach to AI regulation sets it apart from other countries, as the government aims to foster growth and innovation by harnessing AI's potential without imposing strict regulations. This landscape has given rise to promising startups that are actively involved in generative AI, repurposing videos, building language models and facilitating AI-powered customer support. Venture funds in India are also showing increased interest and are developing investment strategies in this emerging space.

However, entrepreneurs express concerns about the lack of funding and conviction from investors to support the creation of large language models due to high compute and infrastructure costs. It is important for investors to have a deep understanding of AI to avoid repeating mistakes made during the crypto craze. Despite challenges, the surge of interest and involvement from startups and venture firms indicate that India's generative AI ecosystem is gaining momentum and holds promise for the future.

MOS REJECTS JOB LOSS CONCERNS

Mr Rajeev Chandrasekhar, Minister of State (MOS). Ministry of Electronics and Information Technology (MeitY), Government of India recently dismissed concerns about artificial intelligence (AI) taking away jobs in India, labelling such comments as "nonsense" and "bakwas" (meaning 'rubbish' in Hindi). Mr Chandrasekhar emphasized that AI is currently task-focused and primarily aimed at enhancing efficiency by simulating human behaviour.

Speaking at the unveiling of the state-of-the-art electromagnetic interference and compatibility laboratories at the Society for Applied Microwave Electronics Engineering and Research (SAMEER), Mr Chandrasekhar stated that the government is actively collaborating with AI researchers and startups by providing curated datasets obtained from anonymized government data.

He further revealed that the government has been engaged in building a semiconductor ecosystem, with plans to establish a semiconductor industry in India within the next three to five years. Chandrasekhar highlighted the remarkable progress made in this regard, citing the presence of nearly 30 semiconductor design startups that have received significant private capital funding, including a notable example from IIT Madras.

Comparing India's ambitions to China's efforts in the semiconductor industry, Mr Chandrasekhar expressed confidence in India's ability to achieve what China failed to do in 30 years within a decade. He cited the transformation of the electronics industry in India since 2014, with the country becoming a trusted and significant player in the field.

Mr Chandrasekhar's optimistic outlook for India's semiconductor ecosystem is based on the belief that the country will soon establish a world-class, fully competitive semiconductor industry. By focusing on semiconductor design and development, India aims to address its historical reliance on imports and emerge as a key player in the global semiconductor value chain.

The minister stressed that the progress made in AI and semiconductor industries is testament to India's dedication to technological innovation and its potential to shape the future of these sectors. With ongoing efforts to foster collaboration between the government, researchers, and startups, India is positioning itself as a leading force in the fields of AI and semiconductors.

OVER 40 LAKH MOBILE NUMBERS ACQUIRED THROUGH FAKE DOCUMENTS

A recent investigation by the Union Ministry of Communications, has brought to light the fact that out of the 87.85 crore mobile connections analyzed across India, approximately 40.87 lakh numbers, were obtained using fraudulent documents. The analysis, conducted in the initial phase, covered a total subscriber base of 131 crore in 22 Licenced Service Areas (LSA) circles.

A communication issued by Mr K Rajaraman, Secretary, Ministry of Communications, Government of India, addressed to the Chief Secretaries and Director Generals of Police of all states and Union Territories, revealed that out of the identified 40.87 lakh fraudulent connections, 38 lakh numbers have already been disconnected. This identification was made possible through the implementation of Artificial Intelligence and Facial Recognition (ASTR), an advanced solution employed for telecom SIM subscriber verification.

The study also highlighted the involvement of 44,582 Point of Sales (PoS) belonging to various telecom service providers in the sale of these fraudulent connections. The Department of Telecommunications (DoT) has subsequently blacklisted these identified PoS. However, it is disconcerting to note that only 181 First Information Reports (FIRs) have been registered nationwide, covering a mere 1,575 of the total offenders involved in the illicit activities.

To curb the rise in cybercrime cases, the Ministry has urged all States and Union Territories to file FIRs against all offenses related to this issue. The highest number of FIRs, totalling 86, were lodged in the Jammu and Kashmir circle, which identified 173 erring PoS. Gujarat followed with 26 FIRs, while Bihar (including Jharkhand) and Tamil Nadu recorded 18 FIRs each. Surprisingly, despite discovering a significant number of fraudulent connections, no FIRs were filed in the West Bengal circle.

A closer look at the data revealed that in Jammu and Kashmir, out of the 1.20 crore mobile connections analyzed, 15,194 were obtained using fake or forged documents, wherein investigators discovered instances of identical faces with different names. Consequently, 14,494 of these fraudulent connections were terminated, and 3,024 PoS were blacklisted.

PIONEERING AI INTEGRATION IN INDIAN HIGHER EDUCATION

Universal AI University, India's first dedicated institution focusing on Artificial Intelligence (AI) education, is gearing up to usher in a new era of futuristic learning in undergraduate, graduate and postgraduate programmes. The University aims to foster dynamic educational excellence by offering a multi-disciplinary and interdisciplinary curriculum that places AI at the core of every subject, equipping students to assume leadership roles in various industries.

Having received the final approval from the Government of Maharashtra, Universal AI University is set to commence its first academic year on 1 August 2023. Initially, the University will offer AI-led subjects across five disciplines— AI and Machine Learning (ML), Business Analytics, Liberal Arts with a focus on Psychology and Economics, as well as Business Studies with specializations in Finance, Marketing, and Commerce. Subsequently, the university plans to introduce programmes in Law, Design, Sports Sciences, International Affairs and Diplomacy.

Universal AI University has strategically partnered with Univitt Technologies, a non-governmental organization actively engaged in live AI projects. This collaboration ensures that students gain valuable hands-on experience by participating in these projects. Furthermore, the University is in advanced discussions with a multibillion-dollar company to further enhance its AI curriculum and provide dedicated projects exclusively for its students.

The objective, of the University, is to equip students with a strong foundation in emerging technologies, including AI, ML, Internet of Things (IoT), Virtual Reality (VR), Mixed Reality (MR) and Augmented Reality (AR). As part of their final year, students will undertake projects that explore the impact of AI on their respective fields, be it social sciences, law, or business. The University places a significant emphasis on experiential learning, with 50-70% of the pedagogy dedicated to practical application. As a part of the course curriculum, each undergraduate student will also be required to write and publish a research paper or case study.

In terms of fees, the School of AI and Future Technologies offers Bachelor of Science (BSc) programmes in AI and ML, as well as Business Analytics, with an annual fee of INR 3.98 lakh. The School of Liberal Arts and Humanities provides Bachelor of Arts (BA) (Hons.) programmes in Psychology and Economics, with an annual fee of INR 3.48 lakh. Universal Business School offers Bachelor of Business Administration (BBA) and BBA plus Masters of Business Administration (MBA) programmes in Business Studies and Commerce, with annual fee of INR 5.18 lakh and INR 5.98 lakh per year, respectively. Additionally, the University offers a Bachelor of Commerce (B.Com) programme at an annual fee of INR 1.98 lakh.

Applications for undergraduate programs are now open to students from all streams and boards, from India and overseas. As per the University's admission criteria, applicants must have either completed their 12th grade or be in the process of completing it in the same year they intend to commence their undergraduate studies. The undergraduate programme at Universal AI University spans four years, adhering to the guidelines outlined in the National Education Policy (NEP).

HYDERABAD EMERGES AS INDIA'S AI CAPITAL

Hyderabad has now established itself as India's Artificial Intelligence (AI) capital, surpassing its previous recognition as the pharmaceutical and vaccine capital, of the country. This declaration was made by K Krishna Murthy, President and Chief of The India Hardware and Semiconductor Association (IESA).

Expressing appreciation for Hyderabad's rapid growth, Murthy acknowledged the positive changes happening in the city. He praised the Telangana government's focused efforts and commended IT Minister KT Rama Rao for his unwavering commitment to the technology sector, which has propelled the state forward.

Hyderabad's newfound recognition as the AI capital further solidifies its position as a leading hub for technological advancements in India. With its conducive environment and supportive government initiatives, the city is poised to become a prominent player in the AI and machine learning domain, attracting businesses, talent, and investment in the field.

AI CAMERAS CAPTURE OVER 20 LAKH TRAFFIC VIOLATIONS

The newly installed cameras powered by AI, in Kerala have recorded a staggering number of traffic violations within a month. Between June 5 and July 3, the AI powered cameras captured a total of 20,42,542 traffic violations across the state.

The positive impact of use of AI powered cameras is the drastic reduction in the number of fatal road accidents. In June 2022, the state reported 344 deaths and 4,172 injuries from 3,714 road accidents. However, due to the installation of the AI powered cameras, in June 2023, the number of road accidents reduced to 140 deaths, 1,278 accidents and 1,468 injuries.

Out of the total violations recorded, 7,41,766 cases were verified, 1,77,694 cases were uploaded to the Integrated Transport Monitoring System, 1,28,740 cases were approved by the Motor Vehicle Department and 1,04,063 challans were sent via post to the offenders.

The most common traffic violations captured by the new age cameras include riders without helmets (73,887 cases), pillion riders without helmets (30,213 cases), triple riding on two-wheelers (1,818 cases), front seat passengers without seat belts (57,032 cases), car drivers without seat belts (49,775 cases) and usage of mobile phones while driving (1,846 cases).

The AI powered cameras have proved to be instrumental in promoting road safety and enforcing traffic regulations, significantly reducing road accidents and saving numerous lives.

IIT GUWAHATI LAUNCHES PROGRAMME ON AI

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Recognizing the projected growth of tech roles by the World Economic Forum, IIT Guwahati aims to meet this demand and contribute to increasing the Gross Enrollment Ratio in higher education. The programme offers multiple exit options, allowing learners to obtain certificates, diplomas, degrees, and even honours degrees based on their accumulated credits.

To be eligible for admission, in the course, students should have cleared Class 12/High School or equivalent with a minimum of 60% marks and mathematics as a compulsory subject. The admission committee will rank applicants based on their performance in Classes 10 and 12, as well as through an online Massive Open Online Course (MOOC) and then grant admissions accordingly. Direct admission is granted to those who have registered for JEE Advanced, while others can demonstrate their proficiency by completing an online course.

The online degree programme provides learners with the flexibility to study at their own pace, with primarily asynchronous courses. Optional campus visits offer opportunities for students to engage with faculty and peers. The programme fee, for the course, is INR 3,49,000, with pay-per-credit options and flexible payment plans.

Upon completion of the programme, students can pursue roles such as AI Engineer, Data Engineer, ML Engineer, and Data Analyst. They will receive exclusive career guidance from the IIT Guwahati placement cell. The curriculum is industry-aligned, including certificates from leading partners such as IBM, Meta and Google. Students will build a strong programming foundation in Python, C, R, and Java and develop machine-learning systems under the supervision of industry leaders. They can also participate in optional on-campus immersion sessions for a valuable hands-on experience.

Additionally, students will have access to two powerful supercomputers, PARAM-Kamrupa and PARAM-Ishan, at IIT Guwahati. The programme is offered in partnership with Coursera, a leading online learning platform.

INDIA'S AI RESEARCH TALENT POOL: LESS THAN 500 ACTIVE RESEARCHERS ACCESSIBLE

India's artificial intelligence (AI) research landscape is still in its infancy, with fewer than 500 active and accessible AI researchers specializing in the Indian AI industry, according to staffing firm Xpheno. Despite the talent pool growing by over 15% in the past year due to the rise of AI ventures and increased demand, the relatively short track record of mainstream AI deployments means that experienced AI researchers have emerged only within the last decade.

Stanford University's AI Index 2023 report acknowledged India's "increasingly important role" in the AI ecosystem, highlighting the growth of Indian publications in peer-reviewed AI journals. However, brain drain remains a concern for India, as top-tier AI researchers typically tend to work abroad.

In contrast to the US, where most top-tier AI researchers prefer to work within their country, China and India account for over half of the population of top-tier immigrant researchers, in the US.

Despite competition from the US and China, India has been making steady progress in producing AI researchers. With a large talent pool, collaborations, and government support, India is actively competing and contributing to the global AI race. The success of Indian AI researchers on the global stage reflects the country's competitiveness in the field of AI.

India's AI research landscape holds promise for the future, but efforts are needed to retain talent domestically and nurture a vibrant AI ecosystem within the country.

SPACENET AND PATHFINDER JOIN FORCES TO REVOLUTIONIZE RETAIL SECTOR

Spacenet Enterprises India Ltd, a prominent player listed on the NSE, has entered into a Memorandum of Understanding (MoU) with Pathfinder Enterprise Solutions Pvt. Ltd., a leading business analytics and generative artificial intelligence (AI) firm based in Chennai. This strategic alliance aims to revolutionize the retail sector in India by harnessing the expanding scope of AI.

At the heart of this partnership lies the integration of RETAILGPT, Pathfinder's proprietary generative AI platform. By leveraging AI technology, RETAILGPT bridges the gap between physical and digital retail, providing an AI-enabled digital commerce interface for shopping centers, airports and e-commerce platforms.

RETAILGPT, powered by a 'Phygital' ecosystem, is set to redefine retail business strategies and enhance customer engagement. With simplified navigation and personalized shopping experiences, it enables retailers to establish a prominent digital presence while minimizing dependency on online marketplaces and associated commissions.

The merger between Spacenet and Pathfinder holds significant benefits for both entities. Shareholders of Spacenet will gain ownership in Pathfinder, allowing them to participate in a rapidly growing market and enjoy enhanced returns on investment. Pending regulatory and shareholder approval, this composite scheme of arrangement will lead to Pathfinder's listing on the NSE, aligning with applicable laws.

NEW DEVELOPMENTS

RESEARCHERS HAVE PRESENTED IMPORTANT FIRST STEPS IN BUILDING UNDERWATER NAVIGATION

Researchers from Brown University, USA, have achieved a significant milestone in the development of underwater navigation robots by drawing inspiration from the swimming technique of krill. In a study published in Scientific Reports, the team introduced Pleobot, a small robotic platform designed to replicate the metachronal swimming method of krill. This achievement marks an important first step towards creating coordinated networks of autonomous robots capable of conducting scientific surveys or search-and-rescue missions in the depths of the ocean.

Krill, known for their remarkable swimming abilities, excel in manoeuvring underwater by displaying mastery in acceleration, braking and turning. By closely studying the fluid-structure interactions involved in krill swimming, the researchers were able to design Pleobot with three articulated sections that emulate the legs of these aquatic athletes. Pleobot serves as both a tool for understanding krill-like swimming and a foundation for building highly manoeuvrable underwater robots.

The researchers believe that Pleobot has immense potential in helping the scientific community unlock the secrets of 100 million years of evolution and apply them to engineer better robots for ocean navigation. By accurately replicating the essential movements of krill legs, Pleobot provides unprecedented control and resolution, enabling detailed investigations into the mechanics of krill-like swimming.

Furthermore, the study sheds light on the mechanisms that enable krill to generate lift and maintain buoyancy while swimming forward. This understanding is crucial as krill need to create lift even during forward motion to prevent sinking. The researchers discovered an important low-pressure effect at the back side of the swimming legs, which contributes to enhanced lift force during the power stroke of the moving legs. This breakthrough insight was made possible through the use of Pleobot.

Looking ahead, the research team plans to continue building upon this achievement. They aim to further refine and test the Pleobot design, incorporating additional morphological characteristics of marine organisms, such as the flexibility and bristles found on shrimp. The ultimate objective is to develop the next generation of autonomous underwater sensing vehicles, capable of mapping Earth's oceans and exploring the oceans of other celestial bodies, including potentially habitable moons like Europa.

The development of Pleobot and its ability to replicate the intricate swimming technique of krill represents a remarkable accomplishment in the field of underwater robotics. This achievement not only contributes to our understanding of marine locomotion but also opens up new possibilities for leveraging nature-inspired designs in the creation of advanced robotic systems for ocean exploration and research.

## NEW METHOD FOR CONTROLLING LOWER LIMB EXOSKELETONS USING DEEP REINFORCEMENT LEARNING DEVELOPED

A groundbreaking advancement in the field of lower limb exoskeleton control has been achieved by a team of researchers using deep reinforcement learning. The innovative method, described in a study published in the Journal of NeuroEngineering and Rehabilitation, revolutionizes the control of lower limb exoskeletons, enabling more robust and natural walking for users. The study, titled "Robust walking control of a lower limb rehabilitation exoskeleton coupled with a musculoskeletal model via deep reinforcement learning," is available open access.

Current control methods for lower limb exoskeletons often struggle to provide natural and intuitive movements, leading to compromised balance, user fatigue, and discomfort. However, this research fills that gap by developing a novel control system that optimizes the user's experience in terms of safety and independence.

Using deep reinforcement learning, the research team trained the exoskeleton control system to achieve natural walking patterns by simulating the movements of the lower limb with a musculoskeletal model. The system demonstrated improved walking stability and reduced user fatigue during real-world testing with a lower limb exoskeleton.

The proposed model generated a universal robust walking controller capable of handling various levels of interaction between the user and the exoskeleton, eliminating the need for tuning parameters. This breakthrough has the potential to benefit individuals with lower limb impairments caused by conditions such as spinal cord injuries, multiple sclerosis, stroke, and other neurological disorders.

The researchers are enthusiastic about the possibilities this new system offers in terms of enhancing the quality of life for individuals with lower limb impairments. By enabling more natural and intuitive walking patterns, the goal is to provide exoskeleton users with greater ease and confidence in their mobility. Ongoing testing and further refinements to the control algorithms are planned to improve walking performance and ensure the system's effectiveness.

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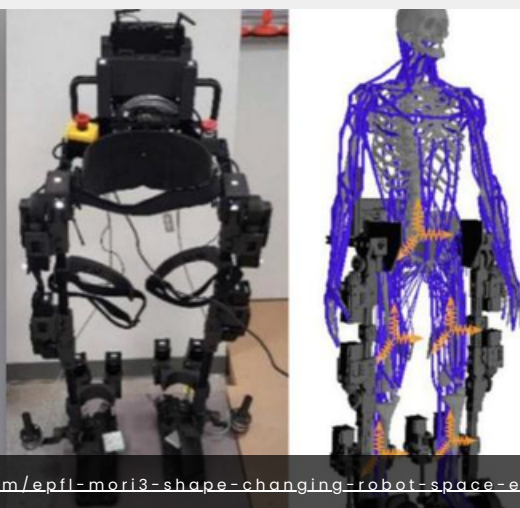
## POLYGON SHAPE-SHIFTING ROBOT FOR SPACE TRAVEL IS BEING DEVELOPED

A groundbreaking polygon shape-changing robot has been developed by researchers at EPFL's School of Engineering, Lausanne, Switzerland, offering immense potential for space exploration. The Mori3 robot, inspired by both the digital world of polygon meshing and the biological world of swarm behaviour, can transform from 2D triangles into almost any 3D object. By leveraging modular robotics, the Mori3 robot can be assembled and disassembled to adapt to various environments and tasks.

The robot consists of triangular modules that easily join together, forming polygons of different sizes and configurations. This unique capability, known as polygon meshing, allows the robot to change its size, shape, and function. The research team pushed the boundaries of robotics design, incorporating advancements in mechanical and electronic design, as well as computer systems.

The Mori3 robot has demonstrated proficiency in three key areas: autonomous movement, interaction with users and handling and transporting objects. Its shape-shifting ability makes it highly versatile and adaptable to different applications. While specialized robots may excel in specific tasks, the Mori3 robot's modularity and versatility make it a valuable asset for space missions.

The compact nature of the Mori3 robot makes it particularly suitable for space exploration, where storage space is limited. Rather than carrying multiple robots for different tasks, the shape-changing robot can fulfill various functions within a single unit. The researchers envision its application in spacecraft, communication tasks, and external repairs.

The successful proof of concept of the Mori3 robot marks a significant achievement in the field of robotics. By enabling robots to adapt their morphology and behaviors, researchers are opening up new possibilities for exploration and problem-solving in dynamic and challenging environments.

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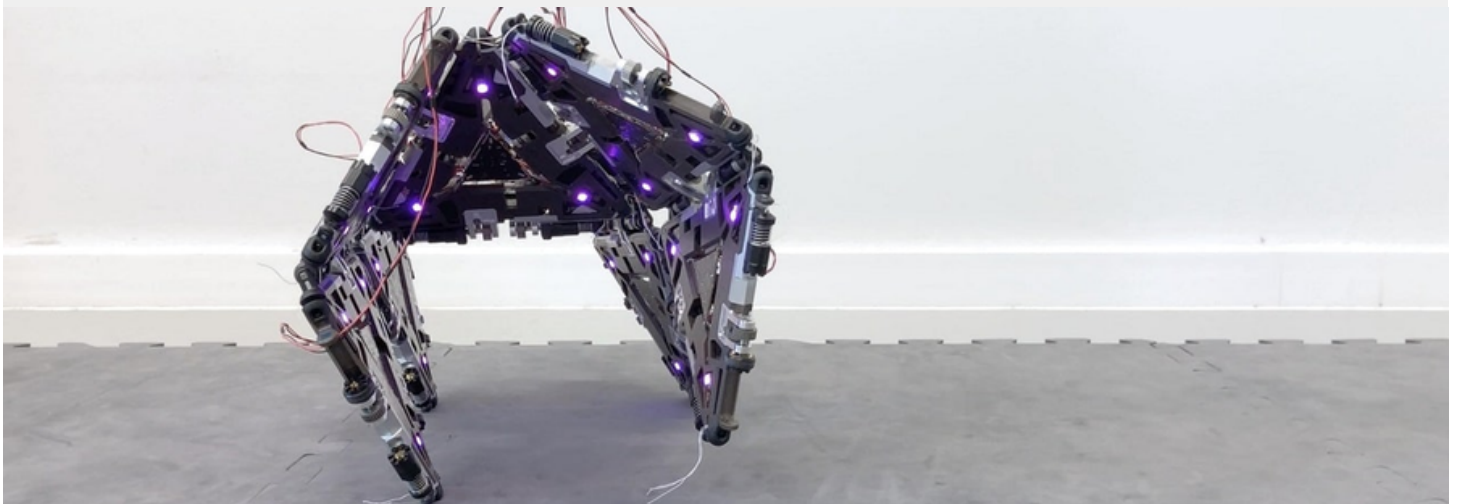
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