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Department of Data Science

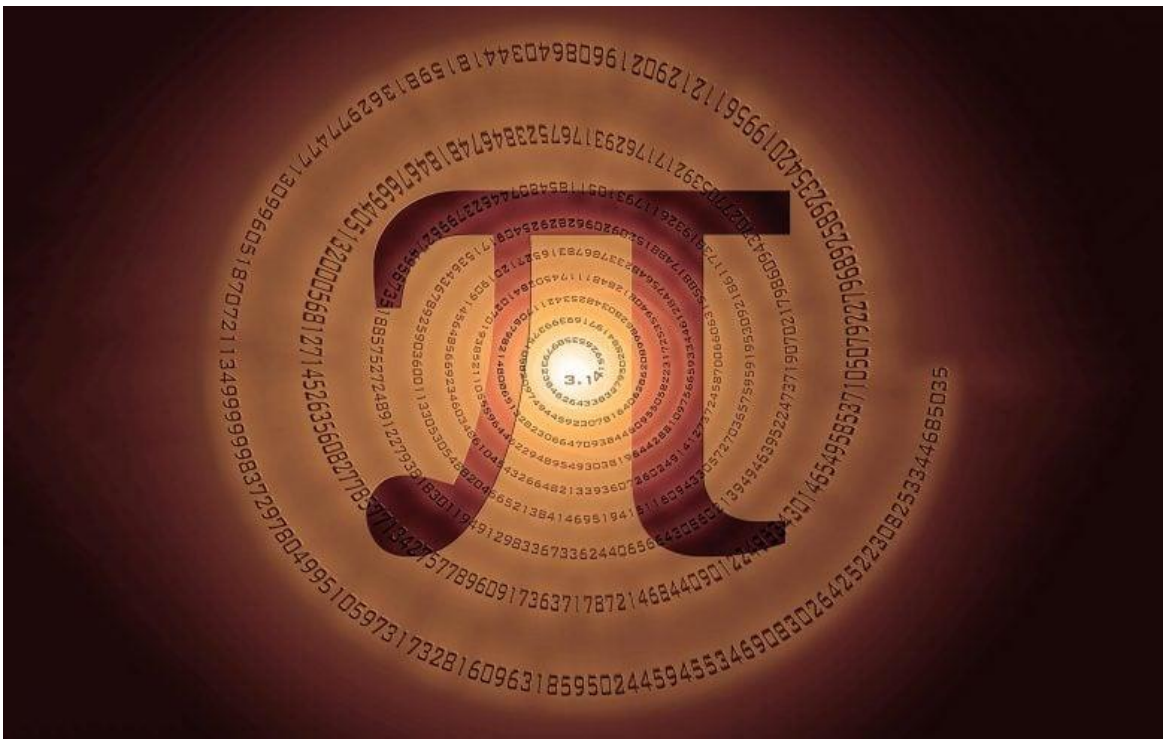
Weekly Data Science Bytes

The "Sixth Mass Extinction" Might Be a Myth, New Evidence Shows

- A new study from Kristen Saban and John Wiens of the University of Arizona Department of Ecology and Evolutionary Biology offers a contrasting view. Their findings indicate that extinctions among plants, arthropods and land vertebrates reached their highest point roughly a century ago and have decreased since that time.
- The researchers also noted that the earlier extinctions often used to justify current forecasts were primarily driven by invasive species on islands rather than today's primary threat, which is widespread habitat destruction.

Source: https://scitechdaily.com/the-sixth-mass-extinction-might-be-a-myth-new-evidence-shows/

Ramanujan's 100-Year-Old Pi Formula That Hides the Secrets of the Universe



- Researchers at the Centre for High Energy Physics (CHEP), Indian Institute of Science (IISc) have now shown that some of the purely mathematical formulas created a century ago to calculate pi are closely linked to present-day fundamental physics. These old formulas reappear in theoretical models used to study percolation, turbulence, and certain aspects of black holes.
- The trail leads back to 1914. Just before leaving Madras for Cambridge, the renowned Indian mathematician Srinivasa Ramanujan published a paper that introduced 17 formulas for calculating pi. These formulas were exceptionally efficient, allowing pi to be computed more quickly than with other methods available at the time. Although they contained only a small number of mathematical terms, they still produced many correct decimal places of pi. Over the years, they became so important that they now underpin modern computational and mathematical techniques for evaluating pi, including the methods used on today's supercomputers.

Source: https://scitechdaily.com/ramanujans-100-year-old-pi-formula-that-hides-the-secrets-of-the-universe/

Department of Science and Technology rolls out INSPIRE programs to boost STEM learning across India

In a bid to strengthen India's research and development ecosystem, the Department of Science and Technology (DST) is implementing a suite of science-focused programs under its INSPIRE initiative. According to an official release shared by the Press Information Buraeu, these programs include the INSPIRE-MANAK (Million Minds Augmenting National Aspiration and Knowledge) scheme, INSPIRE Scholarship for Higher Education (SHE), and the Vigyan Jyoti program. Together, these initiatives aim to attract talented youth to study basic and natural sciences at school and college levels, foster innovative thinking, and encourage careers in research across disciplines including engineering, medicine, agriculture, and veterinary sciences. By engaging students from diverse backgrounds, these schemes are helping build a strong pipeline of future scientists and innovators.

Source: https://timesofindia.indiatimes.com/education/news/department-of-science-and-technology-rolls-out-inspire-programs-to-boost-stem-learning-across-india/articleshow/125908102.cms

Power-Hungry Data Centers Are Warming Homes in the Nordics

- When Finnish engineer Ari Kurvi takes a hot shower or turns up the thermostat in his apartment, he's tapping into waste heat generated by a 75-megawatt data center 5 kilometers away. As its computer servers churn through terabytes of digital information to support video calls, car navigation systems and web searches, an elaborate system of pipes and pumps harvests the cast-off energy and feeds it to homes in the town of Mantsala in southern Finland.
- Since it began operation about a decade ago, the data center has provided heat for the town. Last year, it heated the equivalent of 2,500 homes, about two-thirds of Mantsala's needs, cutting energy costs for residents and helping to blunt the environmental downsides associated with power-hungry computing infrastructure.

Source: https://www.bloomberg.com/news/features/2025-05-14/finland-s-data-centers-are-heating-cities-too

Adopt fast or fall behind in AI, Microsoft CEO Nadella tells India

- India should prioritise ensuring that organisations and citizens adopt the latest technologies as quickly as possible to maximise benefits from innovations in artificial intelligence (AI), Microsoft Chairman and Chief Executive Officer Satya Nadella said on Wednesday.

- "I am a firm believer that ultimately, when it comes to new technology, the rate of diffusion is the winner. People who have studied historical technological waves have said that countries, communities, and companies that adopted leading technology to create more leading technology were the winners," he said.

Source : https://www.business-standard.com/technology/tech-news/india-should-focus-on-rapid-tech-adoption-to-win-ai-race-says-satya-nadella-125121001113_1.html

ndia's deep tech story: Time to move from being imitators to becoming inventors

Our true strength lies in tackling complex challenges at scale with speed and precision, powered by a vast, skilled technical workforce, writes **Prof TG Sitharam**

India's position in the global deep tech ecosystem has become a subject of renewed attention, globally. Deep tech refers to advanced technologies grounded in substantial scientific and engineering innovation. It includes domains such as AI, Robotics, Quantum Computing, Semiconductors and other emerging areas that require deep domain expertise, sustained R&D, and significant societal impact. India's deep tech credentials are already visible through the achievements of its globally respected institutions — ISRO, DRDO, and BARC. For more than six decades, these agencies have been working in isolation and now delivering cutting-edge innovations in space exploration, defence technologies, and atomic research — all pillars of deep tech advancement.

India's digital journey, which began with the launch of Aadhaar in 2009, has been transformative, both in scale and impact. At its core, it tackled a foundational challenge by providing a secure, digital identity to every citizen, but it was only the beginning. What followed was the emergence of a robust Digital Public Infrastructure (DPI) ecosystem — an innovation not just in service delivery, but in technological architecture.

DPI has now become a cornerstone of India's deep tech evolution, enabling advanced, scalable, and interoperable systems that power real-time authentication, financial transactions, document access, and more. Platforms such as UPI, DigiLocker, and CoWIN illustrate how DPI is seamlessly integrating cutting-edge technologies such as AI, biometrics, and cryptography into everyday life.

It is also key to recognise the context of India's deep tech landscape. India is a developing nation with the world's largest population and a diverse socio-economic fabric. To understand India's place in the deep tech world, one must appreciate its unique developmental journey. Far from standing still, India is moving forward with strategic intent determined not just to participate in the global deep tech race, but to help lead it.

India is in the top ranks when it comes to the startup ecosystem, science and technology, defence & atomic energy technology

Far from standing still, India is moving forward with strategic intent determined not just to participate in the global deep tech race, but to help lead it.
—**Prof TG Sitharam**, AICTE chairman

Recognising the unique demands of deep tech ventures, the government has introduced a range of focused policies to nurture this sector from the ground up. The IndiaAI Mission, with a budget of Rs 10,371.92 crore, is designed to empower AI startups and researchers and boost India's global standing in AI. Its Startup Financing Pillar dedicates Rs 1,942.5 crore to deep tech ventures. Complementing this are programmes such as the Design Linked Incentive (DLI) Scheme and the Chips to Start-up (C2S) Programme under the Semicon India initiative, which offer strategic support for semiconductor design and development. The GENESIS Scheme, with an allocation of Rs 490 crore, is fostering deep tech innovation in tier-II and tier-III cities, supporting 25 startups with funding of up to Rs 1 crore each. Moreover, India's commitment to frontier technologies is evident through its National Quantum Mission aimed at advancing quantum research and encouraging quantum-focused startups. The Anusandhan National Research Foundation (ANRF) further strengthens this ecosystem, intending to mobilise Rs 50,000 crore between 2023 and 2028 for research and innovation.

India is in the top ranks when it comes to the startup ecosystem, science and technology, defence, atomic energy technology etc. India's space sector has undergone a dramatic transformation, characterised by global partnerships and path-breaking missions.

What India needs now is a mindset shift. The perception that India cannot lead in deep tech is a myth of a bygone era. The real barrier is not skill or infrastructure, but belief. It is time to move from being imitators to becoming inventors, from incremental change to radical innovation. This is the moment for government, industry, academia, and the startup ecosystem to come together and chart a bold course forward. The foundational elements are in place — talent, tools, intent, and vision. What we now need is the collective will to lead.

(The author is chairman, AICTE)