TECH DOSE

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DEPARTMENT OF COMPUTER APPLICATION

TECHNICAL COMMITTEE

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1   ISRO Tests AI-Powered Lunar Rover for Chandrayaan-4
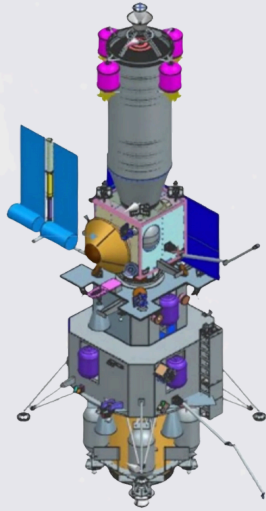

India took another step in its space exploration journey as ISRO successfully tested an AI-driven rover prototype for the Chandrayaan-4 mission. The rover demonstrated autonomous navigation, obstacle detection, and soil analysis features in a simulated lunar environment. Designed for longer mobility on the Moon, this rover integrates realtime decision-making algorithms to improve exploration efficiency. The test marks India's growing leadership in space robotics and AI.

3   IIT Madras Develops Indigenous AI Chip 'ShaktiX'
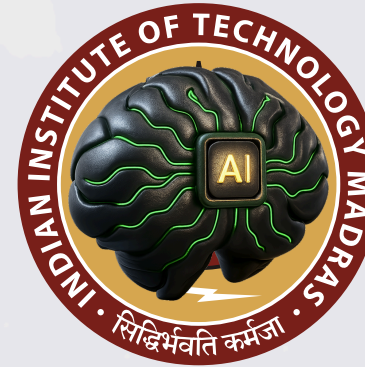
In a significant boost to India's semiconductor ecosystem, IIT Madras researchers launched ShaktiX, an indigenous AI accelerator chip. Optimized for low-power edge devices, the chip is expected to reduce costs in IoT, robotics, and smart city solutions. With government backing, the project addresses India's strategic need for self-reliance in chip manufacturing. Industry experts say it could open new opportunities for Indian startups in hardware innovation

Government Launches Bharat AI Cloud for Startups   2

The Government of India unveiled the "Bharat AI Cloud," a platform providing computing resources to startups, research labs, and MSMEs. The initiative aims to reduce dependency on foreign cloud services while promoting indigenous AI innovation. The platform offers subsidized GPU resources, open datasets, and developer tools to accelerate AI research. It aligns with the "Digital India" and "Atmanirbhar Bharat" missions.

Reliance Jio Rolls Out India's First 6G Pilot Network   4

Reliance Jio began testing India's first 6G pilot network in Mumbai and Delhi, achieving wireless speeds of up to 1 terabit per second. The trial leverages terahertz spectrum bands and advanced MIMO technology to support ultra-low latency services. Potential applications include autonomous vehicles, telemedicine, and smart factories. If successful, Jio could make India an early adopter in the global 6G race.

5 · Indian EdTech Startup 'SkillSphere' Partners with Microsoft

SkillSphere, an emerging Indian edtech company, announced a strategic partnership with Microsoft to bring AI-driven personalized learning to students in 10 Indian languages. The platform uses adaptive algorithms to assess performance and suggest tailored content. With digital education demand surging, the collaboration aims to make multilingual learning accessible in Tier-2 and Tier-3 cities. This partnership reinforces India's position as a global edtech hub.

Inc42 | Aug 2025

8 · India Leads in Selfie-Related Deaths

A recent study by The Barber Law Firm, reported in The New York Post, reveals that India tops the global list of selfie-related fatalities. Between 2014 and 2025, at least 214 people in India lost their lives while attempting risky selfies. Researchers analyzed incidents worldwide using Google News reports and found that social media's obsession with extreme shots often turns deadly. From cliffs to railway tracks, the chase for the perfect picture has made India the most dangerous place for selfies.

AAJTAK Report | Aug 2025.com

## CERT-In Warns of Rising AI-Powered Phishing Attacks · 6

The Indian Computer Emergency Response Team (CERT-In) issued an alert about the exponential rise in phishing campaigns powered by generative AI. Reports suggest cybercriminals are now deploying deepfake voice calls and AI-generated scam emails at scale. The agency urged organizations to strengthen multi-factor authentication and cyber hygiene practices. India's financial and healthcare sectors remain the most targeted industries.

Indian Express | Aug 2025

Google DeepMind Launches 'MedAI' for Cancer Detection · 9
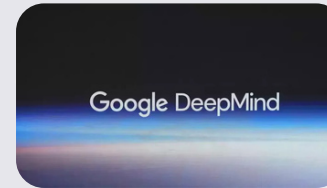
Google DeepMind unveiled MedAI, an AI tool achieving 95% accuracy in detecting early-stage cancers from CT and MRI scans. Trained on millions of anonymized medical images, the system outperformed traditional diagnostic methods in clinical trials. Experts predict the tool will transform preventive healthcare and significantly reduce cancer-related mortality worldwide. Regulatory approvals are currently underway in Europe and the U.S.

Nature | Aug 2025

7 · Flipkart Introduces Drone Delivery in Bengaluru Suburbs

E-commerce giant Flipkart began drone-based last-mile deliveries in suburban Bengaluru. The drones are equipped with real-time GPS, collision avoidance systems, and payload delivery up to 5 kilograms. Initial feedback highlights delivery time reductions of nearly 60% in pilot areas. The move signals growing competition in India's logistics innovation, following Amazon's earlier trials

Mint | Aug 2025com

10 · OpenAI Releases GPT-5.5 with Emotional Intelligence Features

OpenAI announced the release of GPT-5.5, a refined version of its flagship model with improved emotional intelligence capabilities. The upgrade allows AI to better understand user tone, sentiment, and intent in conversations. Potential applications include mental health chatbots, customer service, and personalized tutoring. However, experts emphasize the need for strong ethical safeguards to prevent misuse in manipulative contexts

Indian TechCrunch | Aug 2025.com

## 11 Apple Unveils Vision Pro 2 with Neural AR Capabilities

At its annual event, Apple introduced the Vision Pro 2, featuring advanced neural interfaces and AR capabilities. The device supports real-time brain-signal integration for immersive augmented experiences. Early demos showcased applications in education, design, and entertainment. With this release, Apple aims to dominate the emerging AR/VR market and redefine human-computer interaction.

Apple Newsroom

EU Launches 'CyberShield 2025' Program 12

The European Union rolled out CyberShield 2025, a coordinated cyber defense initiative across all member states. The program integrates AI-based monitoring systems with a centralized command hub in Brussels. Its goal is to counter escalating cyber threats, including ransomware and state-sponsored attacks. This marks Europe's largest digital security project to date.
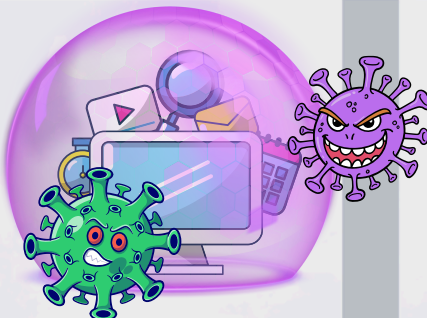
Reuters | Aug 2025

## 13 China Builds World's Largest Quantum Internet Testbed

China announced the deployment of a city-wide quantum internet testbed in Beijing, connecting universities, government agencies, and financial institutions. The network relies on quantum key distribution to ensure ultra-secure communications. This milestone makes China the frontrunner in building a scalable quantum internet infrastructure. Experts predict global competition in quantum networking will intensify

reuters.com

14 MIT Researchers Create AI Model to Predict Earthquakes

MIT scientists developed a deep learning model that can predict earthquakes up to 48 hours in advance. By analyzing seismic wave patterns and satellite data, the model achieved remarkable accuracy in pilot tests conducted in Japan and Chile. If scaled, this technology could revolutionize disaster preparedness and save countless lives in earthquake-prone regions.
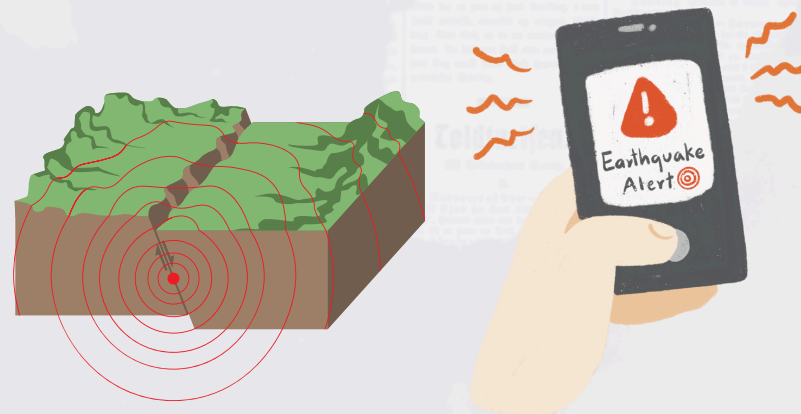
MIT News | Aug 2025

Tesla Introduces Fully Autonomous Taxi Service in California 15

Tesla officially launched its first fleet of Level 5 autonomous taxis in San Francisco and Los Angeles. The driverless vehicles are monitored through a cloud-based AI system ensuring passenger safety. Initial feedback highlights smoother rides and reduced traffic congestion in pilot zones. This milestone marks a leap toward mainstream adoption of autonomous mobility.

The Verge | Aug 2025

NATIONAL SPACE DAY

India's Giant Leap in Space Exploration

Commemorating Chandrayaan-3's Historic Moon Landing Celebrated every year on **23rd August, National Space Day** honors India's remarkable achievement of the **Chandrayaan-3 mission**, which made history in 2023 by successfully landing near the Moon's south pole. This day stands as a testament to India's growing capabilities in space exploration and scientific innovation.
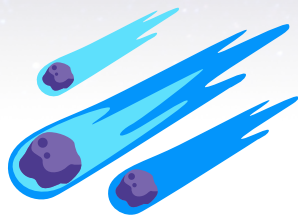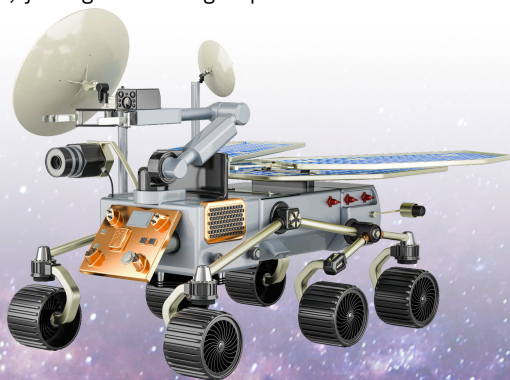
Why National Space Day is Celebrated

- Marks the first successful soft landing of an Indian spacecraft on the Moon.
- Recognizes the contribution of ISRO scientists, engineers, and researchers.
- Inspires the younger generation to pursue STEM education and space sciences.
- Showcases India as a global space power, joining the elite group of nations with lunar landing capabilities.

Key Highlights of Chandrayaan-3

- Landing Date: 23rd August 2023.
- Landing Site: Near the Moon's south pole, an unexplored region of immense scientific interest.
- Achievements:

  o Successful deployment of the Vikram lander and Pragyan rover.
  o Confirmed the presence of sulphur and other minerals on the lunar surface.
  o Collected valuable data for future lunar exploration and possible resource utilization.

Impact and Legacy

- Positioned India as the **first country to land on the Moon's south pole region.**
- Strengthened India's credibility in global space collaborations.
- Inspired initiatives like **National Space Day celebrations, space-tech startups, and new space policy frameworks.**
- Sparked pride and ambition among students and researchers across the country

Looking Ahead

With the success of Chandrayaan-3, India has laid a strong foundation for future missions including:

- Chandrayaan-4 (advanced lunar studies).
- Gaganyaan (India's first human spaceflight).
- Aditya-L1 & Beyond (space-based solar and planetary research).

National Space Day is not just a celebration of past success but a vision for the future, motivating India to aim higher in the pursuit of space exploration.

Three Roads, One Destination: Tech Career

Embark on a journey into the dynamic world of technology. This newsletter explores three prominent tech career paths – **Data Science**, **Cybersecurity**, and **Artificial Intelligence (AI)** – offering insights into their focus, key skills, career opportunities, and future scope. Discover which path aligns with your interests and aspirations and equip yourself for a thriving career in the digital age.

Data Science

Focus: Extracting knowledge and insights from data.

Key Skills:

- Statistical Analysis
- Machine Learning
- Data Visualization
- Programming (Python, R)
- Database Management

Careers: Data Scientist, Data Analyst, Business Intelligence Analyst, Machine Learning Engineer.

Industries: Finance, Healthcare, Marketing, E-commerce, Technology.

Future Scope: The demand for data-driven decision-making is **growing rapidly**, making Data Science a promising field with a **~35% projected growth rate** in the next five years. Expect increased integration with AI and cloud computing.

Cybersecurity

Focus: Protecting computer systems and networks from threats.

Key Skills:

- Network Security
- Vulnerability Assessment
- Incident Response
- Cryptography
- Ethical Hacking

Careers: Security Analyst, Penetration Tester, Cybersecurity Engineer, Security Architect.

Industries: Government, Finance, Technology, Healthcare, Retail.

Future Scope: With the escalating cyber threats, Cybersecurity is a **critical field** with a **~40% projected growth rate**. Expect increased focus on cloud security, IoT security, and AI-powered security solutions.

Artificial Intelligence

Focus: Creating intelligent systems that can perform tasks autonomously.

Key Skills:

- Machine Learning
- Deep Learning
- Natural Language Processing
- Computer Vision
- Robotics

Careers: AI Engineer, Machine Learning Scientist, Robotics Engineer, Data Scientist.

Industries: Healthcare, Automotive, Finance, Retail, Manufacturing.

Future Scope: AI is revolutionizing industries, resulting in a **~30% projected growth rate**. Expect continued advancements in AI-powered automation, personalized experiences, and intelligent systems.

Comparison Table

Feature	Data Science	Cybersecurity	Artificial Intelligence
Nature of Work	Analyzing data to extract insights	Protecting systems from cyber threats	Developing intelligent systems
Best for Students	Strong in math and statistics	Analytical and problem-solving skills	Interested in algorithms and automation
Job Market Growth	~35%	~40%	~30%
Entry Roles	Data Analyst, Junior Data Scientist	Security Analyst, Network Technician	AI Intern, Machine Learning Engineer
Future Potential	Data-driven decision making	Cloud & IoT security	AI-powered automation

Conclusion: The future of technology is brimming with opportunities. Whether you choose Data Science, Cybersecurity, or AI, developing the right skills and staying curious will pave the way for a successful and fulfilling tech career.