ATHARVA ROBOTICS CENTER

Daily News on Innovation & Technology

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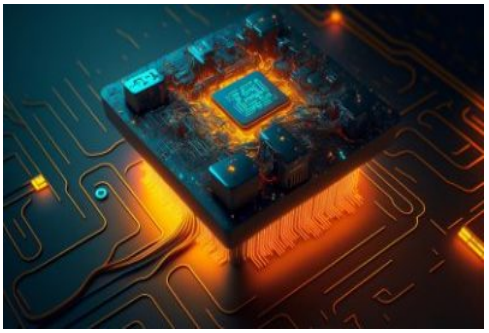
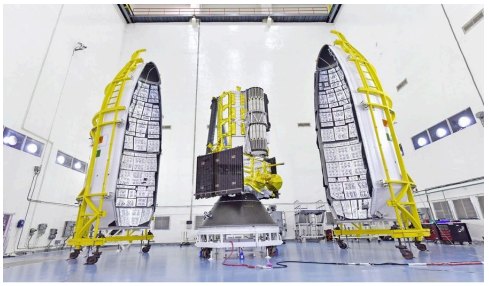
Inside the Semiconductor Supply Chain: From Silicon to Systems



By Nikita Kumari, July 21, 2025

Semiconductors are the unsung heroes of the digital transformations that are occurring everywhere—from 5G and AI to EV and medical technologies.

NASA, ISRO Earth Satellite Mission Set to Launch July 30



By NASA Science Editorial Team, July 21, 2025

NASA and the Indian Space Research Organisation have set the launch readiness date for the NISAR (NASA-ISRO Synthetic Aperture Radar) mission for no earlier than Wednesday, July 30.

NASA's TRACERS set to chase solar storms from space – Launch scheduled for July 22

By Sheetal Kumari, July 22, 2025

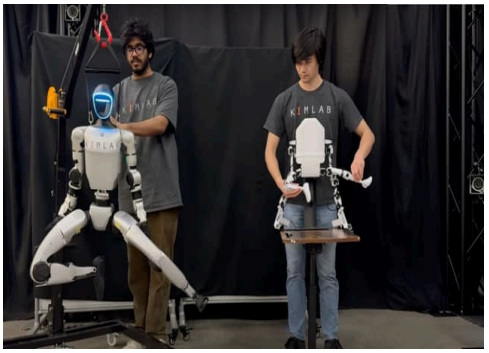
NASA is ready to launch a special mission that could help us understand the invisible shield protecting our planet. Set for lift-off on 22 July, the TRACERS (Tandem Reconnection and Cusp Electrodynamics Reconnaissance Satellites) mission promises insight into the way space weather affects life on Earth.

Bone and Robotics Research Informing Future Missions as Crew Nears Departure

By Mark A. Garcia, July 21, 2025

The Expedition 73 crew kicked off the week studying how to live and work in space during long-term missions including staying healthy in weightlessness and operating planetary robots from a spacecraft.

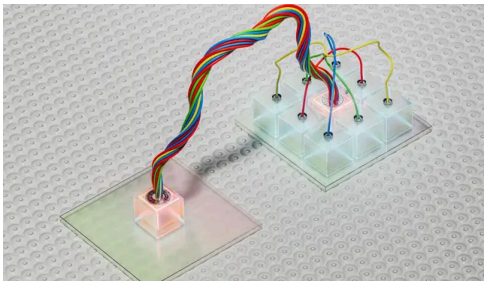
Video: Humanoid robot obeys teleport commands with eerie black magic precision



By Atharva Gosavi, July 21, 2025

Having robotic arms that work like those of actual humans is a dream for many in the robotics industry. Researchers from KIMLAB (Kinetic Intelligence Machine LAB) managed to achieve this to some extent earlier this month.

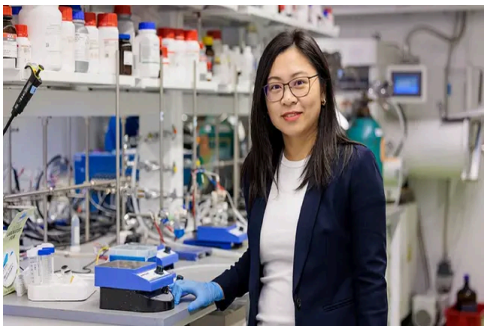
World's first quantum teleportation sends telecom qubit into solid-state memory device



By Aamir Khollam, July 21, 2025

Quantum teleportation, once the stuff of science fiction, is rapidly becoming a central pillar in the race to build the next version of the internet.

New smart membrane mimics cell logic to purify water and extract metals efficiently



By Neetika Walter, July 21, 2025

What if your water filter could think like a cell, deciding what to let in, what to block, and when to do it? That's exactly the kind of precision scientists at the University of Chicago and Northwestern University are now closer to achieving.

News Articles

Small Towns, Big Compute

As AI inferencing grows, firms target lower costs, scalable infra and cleaner energy in smaller cities, reports **Himanshi Lohchab**

The high energy demands of AI chips are pushing data centre investors to look beyond India's metro hubs and tap into the country's hinterland.

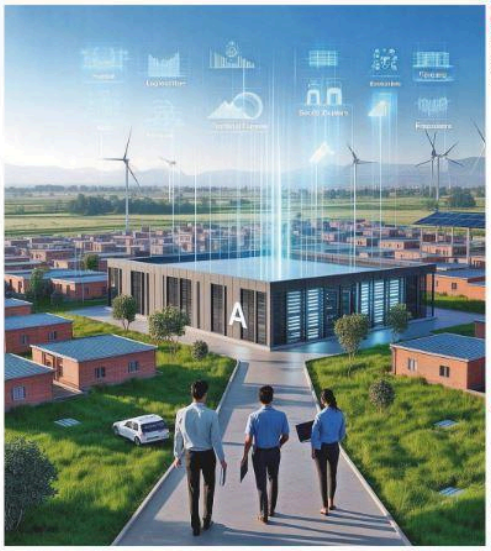
Sify Technologies, CtrlS Datacenters, ESDS Software Solutions, RackBank and others are shifting focus from traditional locations such as Mumbai, Chennai and Noida. Instead, cities like Nagpur, Raipur, Chandigarh, Jaipur, Ahmedabad, Lucknow and Kochi are emerging as attractive alternatives offering better returns.

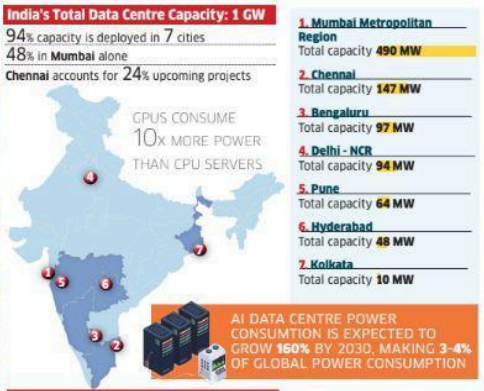
State governments are actively incentivizing this shift with land subsidies, single-window clearances and relaxed power tariffs. The Chhattisgarh government, for instance, is offering capital subsidies ranging from ₹60 crore to ₹300 crore, along with duty exemptions and rental support. The state is also subsidising talent costs with 20% salary reimbursements—up to ₹50,000 a month per employee—for five years, according to the State's policy document. Rajasthan chief minister Bhajanlal Sharma unveiled a data centre policy in April, aiming to attract ₹20,000 crore in investment over the next five years. Similarly, Gujarat is offering capital incentives of ₹50-200 crore, along with tax waivers.

REVIVAL OF THE EDGE

Executives said the AI boom could well mean a revival of edge data centres—smaller and closer to users—which haven't gathered much steam over the last decade. That's changing as cities like Mumbai and Chennai have become overpriced data centre hotspots because of their proximity to submarine cables landing on their shores.

"GenAI is the new engine that will fire investments to edge data centres," said Rajiv Ranjan, associate director, cloud and AI, at research firm IDC India. "We expect more AI inferencing workloads to get deployed at edge locations, closer to customers in tier 2 cities." He also cited an emerging trend of modular or portable data centres, which are suited for small deployments and can be moved. According to IDC, investments in public cloud models at edge locations in the Asia-Pacific region (excluding Japan) are expected to grow from $15 billion in 2024 at a CAGR of 17% through 2028—a trend expected to be mirrored in India.





Cost Advantages of Tier 2/3 Cities

	Tier 1 City (Mumbai/Chennai)	Tier 2/3 City (for example Raipur, Bhubaneshwar)
Power Cost (per unit)	₹7-9/unit	₹3-5/unit
Land Cost (per acre)	₹40-80 crore	₹2-15 crore
Water Availability	Often limited	Abundant and inexpensive
Regulatory Approvals	Complex, slower	Faster with state support
Staff Cost	30-50% higher	Lower, with local talent pools

Source: Goldman Sachs, Avendus Capital, ESDS

"We believe the inflection point for edge DCs is now," said Vipul Kumar, VP, edge and network, CtrlS Datacenters. "A lot of AI workloads—especially inferencing—don't always need to sit in a central cloud or metro hub. They can (and should) run closer to the edge, particularly for use cases in sectors like manufacturing, healthcare, surveillance, agriculture, or autonomous systems in tier 2 and 3 cities of India."

CtrlS has deployed edge capacities in Patna, Lucknow and Bhubaneswar. The company is investing ₹500 crore in Bhopal, its first facility in central India. It's aiming for expansion in GIFT City (Ahmedabad), Guwahati, Kochi and Nagpur, it said.

Sify Technologies said that while Mumbai, Chennai and Noida continue to be its growth epicentres, its edge model is also picking up pace. Raju Vegesna, Sify chairman and managing director, said the company has a $5 billion expansion plan that involves adding sites in tier 2 locations.

"We are going to invest in data centres not only in the six-seven metros but in the next 10-20 tier 2, tier 3 cities like Lucknow, Chandigarh, Nagpur with small capacities of around 10 megawatts to create these AI factories," he told **ET** in February.

ESDS Software Solution is setting up a green data centre in Sahibabad in Uttar Pradesh designed for 600 high-density racks, 30 MW scalable capacity and GPU-ready direct liquid cooling, said chairman and managing director Piyush Somani.

AI infrastructure startup RackBank, which launched AI cloud business unit NeevCloud in 2023, is investing nearly ₹700 crore in cities such as Indore, Raipur and Assam. Clean energy momentum is enabling such locations to become attractive for data centres. For instance, CtrlS said it has commissioned a captive solar power facility in Nagpur. Such strategies are proving useful in power-sensitive and water-scarce regions. To be sure, hurdles persist. Companies must invest in dual grid systems for power redundancy. Telecom connectivity and fibre may be sketchy in remote regions. Finding skilled professionals such as certified data centre operators and engineers continues to be a challenge in smaller towns.

Source: The Economic Times Newspaper, 22-07-2025
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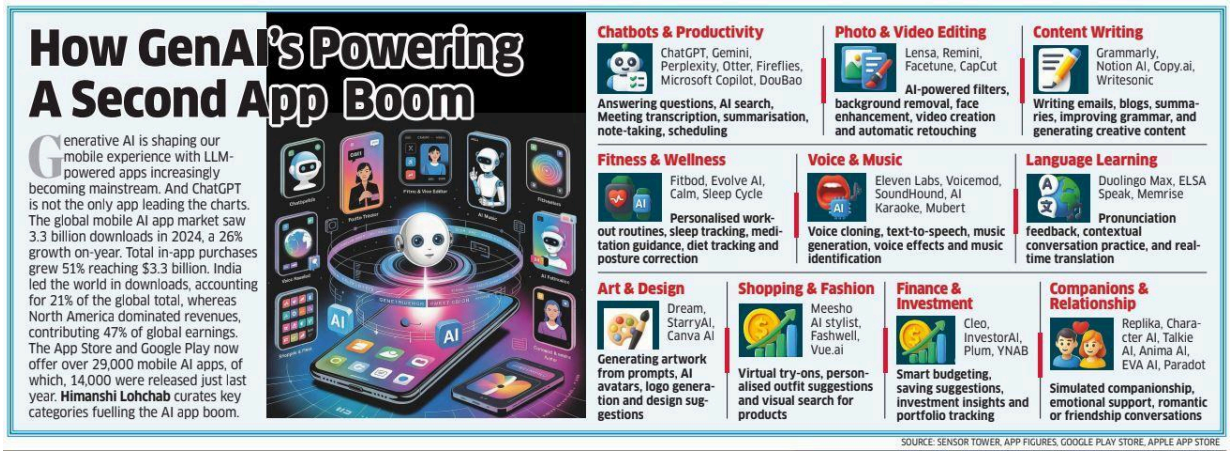

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NUETRENDS

Amlan Mohanty, of CeRAI, IIT Madras, tells **Puran Choudhary** why baseline protections for all types of AI applications are vital

Need India AI Risk Framework

As new AI tools flood the market, experts are calling for stronger self-regulation to ensure safe and responsible use, supported by risk frameworks, government backing, and industry accountability. Amlan Mohanty, an associate research fellow at the Centre for Responsible AI (CeRAI), IIT Madras, emphasised that a risk-based classification system is needed. This will determine which AI systems are "low risk" and "high risk," he said.

Mohanty, also a non-resident fellow at Carnegie India and Niti Aayog who previously led public policy for Google in India, added that collecting real-world data on AI-related incidents in India is crucial for developing these frameworks. In his recent paper, 'Making AI Self-Regulation Work – Perspectives from India on Voluntary AI Risk Mitigation', Mohanty outlined a practical policy roadmap for India, arguing that voluntary or self-regulation frameworks can help manage AI risks without stifling innovation.

"My suggestion would be to introduce baseline protections for all types of AI applications, while high-risk applications should be subject to additional rules," he told ET. If an AI application causes harm or injury to an individual's life or livelihood, it should be considered high-risk, the research explained.

B Ravindran, head, Wadhwani School of Data Science, said it is important to govern AI risks throughout their life cycles.

"Organisations involved in AI development should proactively embrace voluntary self-regulations to lead the AI adoption in India in a safe, ethical, and responsible manner mitigating adverse impacts on humans," he said.

While the government has not formally proposed voluntary AI risk commitments, a draft report prepared by a committee set up by the principal scientific advisor and convened by Ministry of Electronics and Information Technology (MeitY), 'AI for India-Specific Regulatory Framework,' suggests that voluntary commitments could play a key role in the early phase of AI governance.

India needs its own definition of AI-based risk classifications, influenced by local, social and cultural factors

DEFINING RISK, THE INDIAN WAY

One of the key arguments in the paper is that India needs its own definition of AI-based risk classifications that are influenced by local, social and cultural factors. "Do Indians worry about AI-based surveillance the same way Europeans do? Probably not. That's why one cannot simply transpose the risk classification from the EU's AI Act to Indian law. We need to collect real-world data from local communities," Mohanty said.

The research stressed that reporting AI-related incidents will help identify the reasons behind harms caused and assess the nature of impact, whether physical, emotional, financial, or otherwise. This evidence-led approach will be key to designing a contextual and effective AI risk classification system.

Experts recommend a mix of financial, technical, and regulatory incentives to encourage the adoption of voluntary AI commitments. For example, companies seeking grants under the India AI Mission could be required to adopt specific AI commitments as a condition for support. Leveraging the proposed AI Safety Institute in India to shape industry behaviour, develop benchmarks, and promote the use of AI safety tools is also seen as critical. Establishing a Technical Advisory Council could provide valuable expertise to government agencies, facilitate risk assessments, and support compliance efforts, experts said.

Source: The Economic Times Newspaper, 22-07-2025
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