

ATHARVA ROBOTICS CENTER

Daily News on Innovation & Technology

30th July, 2025

Australia's 1st orbital rocket, Gilmour Space's Eris, fails on historic debut launch

By Mike Wall, July 29, 2025

Australia now has a homegrown orbital launch attempt under its belt. The company Gilmour Space notched that milestone today (July 29), sending its first Eris rocket skyward from the Bowen Orbital Spaceport in coastal Queensland around 6:35 p.m. EDT (2235 GMT; 8:35 a.m. local Australian time).



NASA Astronaut Kate Rubins, First to Sequence DNA in Space, Retires

By Johnson Space Center Office of Communications, July 29, 2025

NASA astronaut and microbiologist Kate Rubins retired Monday after 16 years with the agency. During her time with NASA, Rubins completed two long-duration missions aboard the International Space Station, logging 300 days in space and conducting four spacewalks.



Semiconductor Index: Elliott Wave Levels Offer Playbook for Trend Reversal

By Dr. Arnout ter Schure, July 29, 2025

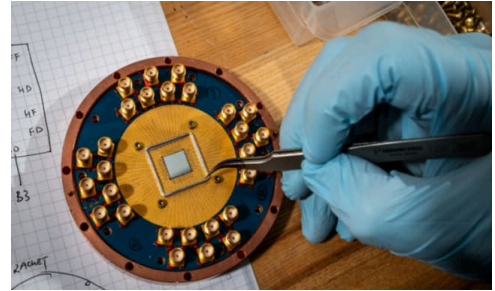
In our previous update from July 1, we showed that the Elliott Wave (EW) Principle for the Semiconductor Index (SOX) accurately predicted the index's "up->down->up" pattern two weeks in advance, showcasing the strength and validity of the EW.



[World's lowest-loss photonic chip sets stage for utility-scale quantum computers](#)

By Aamir Khollam, July 29, 2025

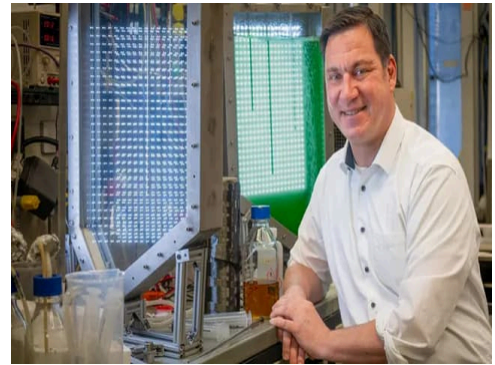
Xanadu and HyperLight have announced a breakthrough in photonic chip performance that could reshape the trajectory of quantum hardware.



[Scientists grow aircraft-grade carbon fiber from algae in breakthrough green tech trial](#)

By Neetika Walter, July 29, 2025

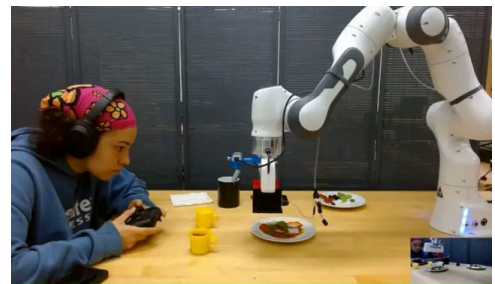
What if the next aircraft you board is built from pond scum? German scientists have found a way to turn photosynthetic algae into high-performance carbon fiber—ditching dirty fossil fuels along the way.



[Robotic hand builds pizza, helps people with disabilities regain independence](#)

By Aamir Khollam, July 29, 2025

Chopping vegetables, opening jars, or plating food might seem routine. But for people with mobility impairments, these simple actions can be complex and exhausting.



[World's first drone with built-in 8K 360-degree camera set to challenge DJI](#)

By Kapil Kajal, July 29, 2025

Chinese camera maker Insta360 is entering the competitive consumer drone market with a new brand called Antigravity, set to unveil its first unmanned aerial vehicle in August.



News Articles

TECH I'D LIKE TO SEE

TECH THAT CAN PUT INDIA TO WORK

I believe the future of technology will be smart, inclusive, and focused on making a real difference. Being in the people supply chain segment, I see a big opportunity for AI and deeptech to do more than just automate tasks. We need tools that can understand a person's potential, predict what kind of talent companies will need, and guide people on how to upskill in real time. With technology changing so fast, more than 70% of



the workforce needs to be reskilled - and tech can play a big role in making that easier. I want to see platforms that help companies hire faster and better, while keeping people at the heart of it all. The real power of technology is in how it connects people to meaningful work and helps build a workforce that's ready for the future. That's how we move closer to our mission of Putting India to Work.

Neeti Sharma | CEO, TEAMLEASE DIGITAL

Source: The Times of India Newspaper, 30-07-2025
Page No 27

Link: <https://drive.google.com/file/d/1SvddhIXsztUnheFCkto46l4mRF-ENkMa/view>

FROM BACK OFFICE TO BRAIN TRUST

Purpose, patents and profit are becoming the new metrics for GCCs as they mature

Akhil George & Sujit John | Inn

Global capability centres (GCCs), the tech and operations arms of MNCs have helped power India's technology ascent for years now, but the cost-arbitrage model that lured multinationals here is past its sell-by date. Indian hubs must now behave less like off-shore centres or back-offices, and more like intellectual engines that invest, decide, and monetise. That was the consensus among leaders at the Nasscom-Times Techies GCC 2030 And Beyond conference in Bengaluru on Monday.

Manu Saale, MD & CEO at Mercedes-Benz Research & Development India (MBRDI), illustrated the stakes with a story that began in 2018, when headquarters asked whether a car could read hand gestures. Bengaluru engineers seized the brief, trained neural networks to run on an edge device, and two years later were on stage at the Consumer Electronics Show in Las Vegas flicking the sunroof and stereo on a concept saloon open and shut with nothing but a wave. "There was one slide that mattered—Where does this magic come from?"—and underneath it read "MBRDI, Bengaluru". Saale recalled, still delighted that India, not Stuttgart or Palo Alto, cracked the problem first. "That is how you earn respect at headquarters—and how you keep it," he said.

SAP Labs India MD and Nasscom chair Sindhu Gangadharam offered another concrete case. Eighty percent of the code for SAP's Joule enterprise cogitator, she said, is written in Bengaluru, where developers work shoulder-to-shoulder with global customers to refine queries that track inventory, chase leads, or calculate taxes in natural language. "We're talking about taking innovations like Joule from India to the world," she said, pointing out that a quarter of SAP's patents now originate locally. The lesson for newer entrants, she argued, is to nurture end-to-end product thinking—engineers who can design, commercialise and localise software, not merely code it. That demands earlier and deeper partnerships with universities so graduates arrive GCC ready; steeped in IP law, data-driven design and platform economics as well as algorithms.

"In 2018 our brief was to recognise driver gestures entirely on the edge—no network, pure on-board intelligence. Anyone in Sunnyvale, Palo Alto, Tel Aviv, or Stuttgart could have owned it, but Bengaluru said yes. It was an industry first, we didn't even have an FPGA (chip) that could run it on the edge. At CES 2020 a single slide asked, 'Where does this magic come from?' The answer read 'MBRDI, Bengaluru'."

That is how you earn respect at headquarters.



Manu Saale | MD & CEO, MERCEDES-BENZ RESEARCH & DEVELOPMENT INDIA

"India is SAP's only site with the entire product portfolio under one roof. A quarter of our global patents—and nearly 80 percent of the code for our Joule enterprise cogitator—now come from Bengaluru. GCCs here are shedding the 'back-office' tag, 44 percent already sit at the top of the maturity curve. Success hinges on end-to-end product ownership and relentless IP creation—not scale alone, but investment for the world."



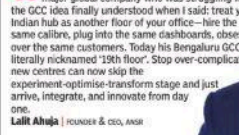
Sindhu Gangadharam | MD, SAP LABS INDIA & CHAIRPERSON, NASSCOM

"The India GCC of a major bank has filed 25% of its global patents, yet the number monetised is very low. That tells us roles with real P&L (profit and loss) must sit here. Headquarters often claim we are too far from the market, but I ask: in banking, healthcare or auto, if you can't seat those roles in one of the world's largest markets, where can you? Our digital-identity work for Lloyd's, inspired by Andhar, proves it can be done."



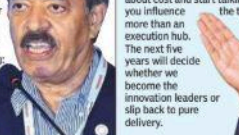
Sirisha Voruganti | CEO & MD, LLOYD'S SYNDICATE, GLOBAL SERVICES

"I call it the '19th-floor paradox'. The CEO of a major global company who was struggling with the GCC idea finally understood when I said: treat your Indian hub as another floor of your office—hire the same calibre, plug into the same dashboards, obsess over the same customers. Today his Bengaluru GCC is literally nicknamed '19th floor'. Stop over-complicating: new centres can now skip the experiment-optimize-transform stage and just arrive, integrate, and innovate from day one."



Lalit Ahuja | FOUNDER & CEO, ANSR

"Twenty-five years ago companies came purely for cost; today they come—and stay—for relevance. Every crank of the technology revolution makes India centres more critical. Our GCCs must stop talking about cost and start talking about revenue: the day you influence more than an execution hub. The next five years will decide whether we become the innovation leaders or slip back to pure delivery."



Rajesh Nambiar | PRESIDENT, NASSCOM

"When GCCs align with their company's overall strategic goals, they become powerful drivers of reinvention and value creation. Those that succeed don't just support, they lead change. At Accenture, we focus on combining talent, technology, and trust to ensure GCCs can meet evolving business needs effectively."



Ajay Vij | SENIOR COUNTRY MANAGING DIRECTOR, ACCENTURE IN INDIA

nasscom | TIMES | TECHIES GCC 2030 And Beyond

All of the leaders said the most successful GCCs are the ones that are most tightly integrated with the enterprise; and that's also when the enterprise gets the most value from its GCC. Lalit Ahuja said simplicity is its best ally. The ANSR founder, who helps multinationals set up GCCs in India, recounted a conversation with the chief executive of a leading global company who had digital wrapping his head around the concept of a GCC. Hisureka moment came when Ahuja suggested treating the GCC as "the 19th floor of your office"—just in another country. The company in question had an office on the 19th floor of a building and were contemplating expanding into the 19th floor:

HOW TO STAY RELEVANT

What can the thousands of GCCs already in India, and the hundred or so added each year, do to stay on the front foot? The leaders sketched a few imperatives:

- **Pick moon-shot problems that headquarters has not yet solved and deliver them end-to-end.** Gesture recognition did more for Mercedes-Benz's perception of India than a decade of incremental tasks.
- **Focus on revenue generation, commercialise IP.** Filing patents is laudable; licensing them or embedding them in products is what puts India on the revenue map. Joint industry-academia labs and cross-sector forums can help accelerate that path from lab to ledger. Nasscom president Rajesh Nambiar noted that increasingly, GCC success is measured in revenue. Boards no longer ask how many heads a GCC employs but which product lines it owns and what percentage of sales those lines drive, he said.

Integrate by design.

Ahuja's 19th-floor metaphor suggests that cultural alignment and shared metrics matter more than physical proximity. When Indian engineers attend the same sprint reviews and read the same customer dashboards as colleagues abroad, they act—and are judged—as peers, not contractors.

- **Cultivate leadership.** Saale argued that India's decisive edge will be forged by the people who run the GCCs. "The leadership factor in the whole game matters most. We need to get our leaders to lead differently, inspire differently and start sharing larger dreams with their teams about how they should see the world from Bengaluru or Pune," he said. The best results will emerge when companies rotate managers across functions and geographies, always building toward the next," he said.

GCCs must become extension of HQ



LEADING DIFFERENTLY: Ajay Vij, senior country MD, Accenture in India, in a fireside chat with Sangeeta Gupta, senior VP, Nasscom

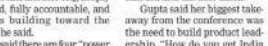
What got us here, will not get us to the next wave of growth." Ajay Vij, senior country managing director at Accenture in India, said in a fireside chat with Sangeeta Gupta, senior VP & chief strategy officer at Nasscom. India has had great success globally with IT and tech so far. But Vij said India will in future need to lead differently by becoming the world's innovation engine. He said this ecosystem needed to be fostered with urgency and intent, and by taking an intentional approach to creating skilled talent at scale.

Vij said India's education system has been built for a services mindset, and it is critical now to change it to an entrepreneurial mindset. "We need to literally go down to Class 10-12 graduates and say what's the entrepreneurial mindset. That will be our challenge," he said. GCCs too will similarly have to become innovation engines.

There is sharing happening in the ecosystem, but there's a lot more we can do. We need to look at how we can partner more with academia, with startups, we need more collaboration here between big tech and GCCs. Our role at Nasscom will be to make these partnerships stronger, more real.

Sangeeta Gupta | SENIOR VP & CHIEF STRATEGY OFFICER, NASSCOM

GCC 2030 And Beyond



becoming the ideas engine for the parent organisation, staying aligned to the strategy and creating a culture that attracts the best talent.

Gupta said her biggest takeaway from the conference was the need to build product leadership. "How do you get India and the GCC ecosystem ready for that whole product differentiation that we need to invest in?" she said.

Source: The Times of India Newspaper, 30-07-2025
Page No 27

Link: <https://drive.google.com/file/d/1SvddhIXsztUnheFCkt04614mRF-ENkMa/view>

Planning With Courage To Pivot Recipe For Career Success

By Saundarya Rajesh

Young women and men in India are making a beeline to career counsellors. They all have the same conundrum — “I had a plan, but with the advent of AI and everything going on in my industry, that plan is now redundant — should I change it? But if I keep adjusting my future goals with every emerging update, what even will I end up doing?”

Hearing these queries makes one reflect that GenX's probably had it easier. In the 1990s, the Indian dream was to secure a degree from a premier institution of learning, land a job at a high-growth IT multinational (and every se-

cond company was booming), and climb the corporate ladder. It was a simple input-output algorithm. But for Gen Z's and Millennials, that linear formula no longer works. AI is wiping out vanilla jobs, like recruiters and data analysts and content writers and coders, and necessitating new fields like AI ethics, sustainability analytics, green tech, and workforce transition.

So, let's break this down. Stick or Shift? Deliberate steps or Rerouting?

Take deliberate planning. In a market where 10.7 million graduates vie annually for a corporate entry, and a fraction of them rise step-by-step within the pyramid, a plan gives you focus. Setting clear, measurable objectives and sticking to plan has been the classic recipe for success.



A study by Avtar found that young women with defined career goals and an intentional pursuit of them, stayed the course and secured promotions within five years. Second career women who stuck to their area of

expertise were able to quickly re-emerge from the break.

Yet, being flexible with your plans and rerouting smartly, is equally vital. In the early 2000s, technology opened new doors. Bankers became domain experts, IT grads became CAD-CAM designers. And tech's impact continued well into the post-Covid era as well. Staying open to serendipity, whether it's a cross-functional AI project or a new domain, can certainly unlock unexpected paths.

The verdict is that it cannot be either-or. Blending planning with openness is the path to success. But how, is the question. Here are 5 methods that successful pro-

fessionals have used.

1 Intentionality is your core. In the Indian context, where societal expectations often steer career choices, intentionality is crucial. Develop an intentional career path and become resilient to market shifts.

2 Develop AI-resistant human skills. Skills like emotional path, critical thinking, complex problem-solving, creativity, and leadership are uniquely human. Wrongly termed soft skills, these are your survival toolkit. In a workplace where diversity is the norm, these strategic skills make you recession-proof.

3 Embrace continuous upskilling. For fans of emergent career planning, being a perpetual learner is your biggest asset. This is especially true for entry-level jobs, which are often the first to be impacted by automation.

4 Network authentically. Genuine connections, with a generous blend of listening unveil emergent opportunities. You develop the foresight into impending shifts that no pre-written plan could account for.

5 Be open to pivoting. Treat your early career as a series of experiments. If a role isn't aligning with your va-

lues or growth trajectory, don't be afraid to pivot. Agility is crucial in a rapidly changing environment.

Let's be clear. In today's fiercely competitive job market, a purely emergent approach can leave you adrift. However, an overly rigid plan, especially in the age of AI, is equally problematic. Combining purpose-driven planning with the courage to pivot is the double punch for career success. This hybrid approach, rooted in intention, fuelled by adaptability, is your blueprint for a resilient, fulfilling career in India's ever-evolving landscape.

(The writer is founder & president Avtar)

Source: The Times of India Newspaper, 30-07-2025
Times Ascent Page

Link: <https://drive.google.com/file/d/1SvddhIXsztUnheFCkto46l4mRF-ENkMa/view>

UP set to become first state to get AI-driven road-safety experiment

STATESMAN NEWS SERVICE
LUCKNOW, 29 JULY

Uttar Pradesh is set to become the first state in the country for an AI driven road safety experiment. The Ministry of Road Transport & Highways (MoRTH), Government of India, has issued a formal no objection for the Uttar Pradesh Transport Department's Artificial Intelligence (AI) and Big Data Analytics based Road Safety Pilot Project.

This is the first AI driven road safety experiment ever undertaken by a state transport department in the country. The pilot project will be implemented at zero cost (pro bono) by the public sector enterprise ITI Limited in partnership



with global technology firm mLogica. The UP government has already earmarked Rs 10 crore in its 2025-26 budget to establish a "data driven administrative model" for the Transport Department, officials here said on Tuesday.

The Union Ministry, while giving the NoC has made it clear that the initiative must fully comply with the Motor Vehicles Act 1988, the Central Motor Vehicles Rules 1989, and all road safety e enforce-

ment Standard Operating Procedures (SOPs), and that it will entail no financial liability for MoRTH. Officials said the initial proof of concept, scheduled for six weeks, will integrate multi source data — accident records, weather feeds, vehicle telematics, driver profiles, and roadway attributes — to build AI models that pinpoint root causes of crashes, forecast black spots, and generate real time policy dashboards.

Upon successful completion, the same AI engine will be rolled out — phase by phase — across all core functions of the Transport Department, including faceless licensing and permits, modernised enforcement, revenue collection, e Challan operations and the Vahan-Sarathi platforms,

positioning Uttar Pradesh as a national leader in transport technology innovation.

Building on the evidence generated during the pilot project, the AI analytics core will be embedded into other digital assets of the department. The wave will integrate the engine with the paperless licensing and permit ecosystem, allowing end to end application processing, validation, and card production to run on self learning decision models.

Concurrently, the enforcement wing will deploy real time fraud detection, vehicle position mapping, and violation propensity forecasting, giving field officers data backed triggers for on the spot action.

Source: The Statesman Newspaper, 30-07-2025

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Link: https://drive.google.com/file/d/1sDh0O9rX9eiO9IH8i6Do_zrAc7Rqseyd/view

Can chatbots leak your data: Keeping AI systems safe

NEEHAR PATHARE

A project deadline is approaching. A manager opens a chatbot to speed things up. He asks it to summarise a client brief, shares internal timelines and even types in pricing details to get a faster draft. The conversation flows smoothly, the work gets done, and the chat is closed.

But the data doesn't disappear.

Chatbots powered by generative AI are designed to learn from interactions. The more users share, the more these systems improve—but also, the more they retain. What feels like a private exchange can quietly turn into a digital footprint, stored, processed, and potentially exposed.

Chatbots that remember more than they should

Unlike conventional digital tools, generative AI chatbots are built on large language models that rely on enormous volumes of data to function. These systems not only interpret language and identify context but also generate nuanced responses. By doing so, they often process highly specific, sometimes confidential, as well as sensitive inputs. From internal reports and business strategies to personal details and client records, these inputs cover all. Every interaction contributes to the model's refinement, but it also expands the digital memory these systems carry forward.

The concern lies in what happens to that memory. When sensitive data is retained—whether temporarily or for model training—it creates opportunities for leakage. The more these systems are integrated into everyday workflows, the more likely it becomes that critical information is unintentionally exposed or stored in ways users are not completely aware of.

The expanding threat landscape

The sophistication of generative AI also increases its surface area for attack. Among the most prevalent concerns is prompt injection. In this, a malicious input is designed to manipulate a chatbot. Following this, it makes the chatbot perform unintended

actions or reveal information - it was meant to withhold. Since chatbots respond contextually, it usually becomes challenging to differentiate between a harmless prompt and one crafted to deceive the system.

Moreover, model inference attacks present another significant risk. These attacks involve adversaries repeatedly. This, in turn, helps in querying the system to reverse-engineer or infer the underlying data it was trained on. If the model has been exposed to sensitive internal information, this could result in the indirect disclosure of proprietary or private data through seemingly innocuous conversations.

Risks within the walls

It must be noted that all threats are not external. In many cases, the risk arises from within the organisation itself. Employees may use chatbots for tasks that involve confidential customer data, strategic documents, or unreleased product information. These details, once entered into the chatbot, can become part of its memory. This especially happens in the case where data governance rules are not clearly defined.

Even in the absence of malicious intent, this internal misuse can lead to regulatory violations. When employee inputs are not evaluated or controlled, sensitive data can be inadvertently included in future model training or exposed through unforeseen chatbot responses. The result is a silent yet serious breakdown in information security.

Designing chatbots that are safe by default

Addressing the risks of AI chatbot usage requires a multi-layered approach—starting with how data is handled. First and foremost, information shared with a chatbot must be encrypted in transit and at rest. This ensures that even if conversations are intercepted or accessed, the data remains unreadable to unauthorised actors.

Authentication protocols must also be strengthened. Multi-factor authentication for users and strict access controls for administrators ensure that only authorised individuals can inter-

act with or manage chatbot systems. This is particularly important when chatbots are integrated with broader enterprise tools like CRMs or knowledge bases.

Monitoring and auditing should become continuous processes. By logging chatbot interactions and flagging anomalies, organisations can detect suspicious behaviour early. Establishing review protocols for chatbot-generated responses can also prevent the accidental exposure of sensitive information, especially in customer-facing applications.

Embedding governance and awareness

Securing chatbots is not just a technical challenge. Instead, it's a governance issue. Firms must form clear usage guidelines that define which types of information can be shared with chatbots and under what conditions.

Training programs should equip employees with the knowledge to use AI tools responsibly, and cybersecurity teams must remain actively involved in overseeing how these tools are deployed and maintained.

Additionally, regular audits, policy updates, and internal awareness campaigns must be done proactively. This ensures that AI safety is considered a continuous responsibility. This cultural transition - from

viewing chatbot security as an organisational priority to understanding the same as a backend task - is essential to keeping pace with evolving threats.

On the whole, as AI chatbots continue to redefine how people interact with technology, the focus must expand beyond speed and convenience. In addition, securing them is not about limiting progress—it is about protecting the intelligence being built. Privacy, security, and ethical design must be baked into every layer of chatbot development.

Because in the world of conversational AI, it's not what the system says that poses the greatest risk. It's what it remembers.

The writer is MD, CEO & COO, G3SATs Cybertech.



Source: The Statesman Newspaper, 30-07-2025
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Link: https://drive.google.com/file/d/1sDh0O9rX9eiO9IH8i6Do_zrAc7Rqseyd/view

First Indo-US satellite NISAR set for launch

Snehal Fernandes

letters@hindustantimes.com

MUMBAI: The Indian Space Research Organisation (Isro) on Tuesday said it was all set to launch NISAR satellite, a first-of-its-kind collaboration between the Indian space agency and NASA that can detect even small changes in the Earth's surface such as ground deformation, ice sheet movement and vegetation dynamics. On July 30, at 5.40pm, NISAR or the NASA-ISRO Synthetic Aperture Radar, which has been a decade in the making, will lift off aboard Isro's GSLV-F16 rocket from the Satish Dhawan Space Centre, Sriharikota. The life of the mission is five years. "GSLV-F16 is ready to carry NISAR into orbit. Final prep underway. Launch countdown has commenced at 14:10 hours today," Isro posted on X on Tuesday evening.

At a pre-launch news conference on Monday night, Phil

Burella, NISAR project manager, said, "following a high level meeting between Isro and NASA, both teams agreed that the spacecraft, mission and launch vehicle were ready for lift off. So everybody gave a thumbs up and that's great news." On Wednesday, a NASA team will be stationed at the launch facility, while another 20 from their team will be at Isro's mission operations facility at ISTRA, Bengaluru. NASA's Jet Propulsion Laboratory staff will support the launch once the separation from the launch vehicle occurs 20 minutes from 5.40pm.

"During the height of the COVID, we had 65 engineers come out from Isro and visit JPL to keep the integration and tests going," said Burella.

"Over the last 2 1/2 years, NASA has sent over 175 engineers to Isro to keep integration and tests going, and get us ready for where we stand today and ready for launch," he added.

Source: The Hindustan Times Newspaper, 30-07-2025

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