

ATHARVA ROBOTICS CENTER

Daily News on Innovation & Technology

3rd November, 2025

ISRO Rocket Launch Today Live Updates: Communication satellite CMS-03 successfully placed in intended orbit, mission successfully accomplished

By Express Web Desk, November 02, 2025

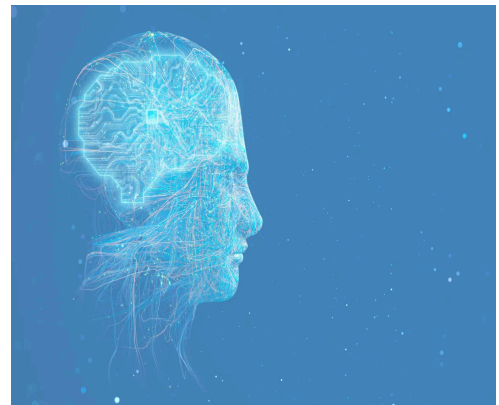
ISRO Rocket Launch Today News Live Updates: CMS-03, the heaviest communication satellite launched by ISRO from Indian soil, has been delivered to its intended orbit. This marks a successful launch of the agency's heaviest rocket LVM3. In his address from the Mission Control Center post launch, ISRO chairman Dr V Narayanan described the LVM 3 satellite as 'Bahubali,' in an apparent reference to its heavy-lift capability.



Ai researchers "embodied" an LLM into a robot-and it started channeling robin williams

By Julie Bort, November 01, 2025

The AI researchers at Andon Labs — the people who gave Anthropic Claude an office vending machine to run and hilarity ensued — have published the results of a new AI experiment. This time they programmed a vacuum robot with various state-of-the-art LLMs as a way to see how ready LLMs are to be embodied. They told the bot to make itself useful around the office when someone asked it to "pass the butter." And once again, hilarity ensued.



Odisha takes maiden step in semiconductor manufacturing

By Sujit Bisoyi, November 02, 2025

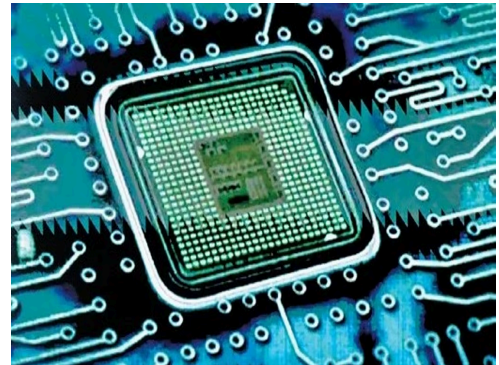
MARKING A significant milestone in Odisha's journey in semiconductor manufacturing, Chief Minister Mohan Charan Majhi on Saturday performed the groundbreaking ceremony for the country's first end-to-end silicon carbide semiconductor production plant being set up by SiCSem Private Limited.



[ICEA, GSA join hands to boost India's semiconductor integration](#)

By Abhijeet Kabad, November 01, 2025

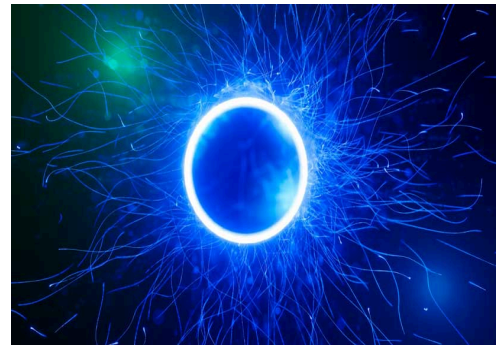
BENGALURU: India's electronics output now stands at USD 150 billion, with exports expected to surpass USD 50 billion, said India Cellular and Electronics Association (ICEA) Chairman Pankaj Mohindroo on Friday. India's semiconductor industry has grown by nearly 500% in the past year, while smartphone manufacturing has surged by 100%.



[Nobel 2025 and Quantum Imperatives](#)

By Ayesha Shaikh, November 02, 2025

Every year, the announcement of the Nobel Prize opens new doors for discovery and advancement. Back in 1895, Alfred Nobel established the Nobel Foundation, which distributes prizes to the discoveries in the fields of Physics, Chemistry, Physiology/Medicine, Peace, and Economics for conferring the greatest benefit to mankind. On 7th October 2025, one such award was granted to John Clarke, Michel H.



[Quantum Computing Stocks: Third Quarter Earnings Preview](#)

By REINHARDT KRAUSE, November 01, 2025

Quantum computing stocks continue to be volatile heading into third-quarter earnings reports. The companies are still unprofitable for the most part as they aim to advance the technology. IonQ (IONQ) reports earnings after the market close on Wednesday. Meanwhile, D-Wave Quantum (QBTS) reports early on Nov. 6. Rigetti Computing (RGTI) reports on Nov. 10, with Quantum Computing (QUBT) due on Nov. 14.



[Countdown begins for launch of ISRO's heaviest satellite](#)

By Hemant Waje, November 03, 2025

The satellite weighing about 4,410 kg will be the heaviest to be launched from the Indian soil and into a Geosynchronous Transfer Orbit (GTO), the space agency said. The spacecraft will travel onboard a LVM3-M5 rocket, dubbed as 'Bahubali' for its heavy-lift capability.



PM Modi to inaugurate Emerging Science and Technology Innovation Conclave

By The Hindu, November 02, 2025

Prime Minister Narendra Modi will launch a ₹1 lakh crore fund on Monday to promote private sector-driven investments in research and development, as he inaugurates the first Emerging Science and Technology Innovation Conclave (ESTIC) 2025 in the capital.



India's Cybersecurity Ecosystem Grows into \$20 Billion Industry: CERT-In Chief

By The Hindu, November 02, 2025

Director General of Indian Computer Emergency Response Team CERT-In, Dr. Sanjay Bahl, has said India's Cybersecurity Ecosystem scaled new heights with over 400 Startups and 6.5 Lakh Professionals powering a 20 Billion dollar Industry. The session was conducted by CERT-In, Ministry of Electronics and Information Technology, in collaboration with the Ministry of External Affairs. The interaction covered the roles and responsibilities of CERT-In in crisis management, vulnerability assessment, information sharing, and coordinated response to cyber incidents.



DeepAgent: A Deep Reasoning AI Agent that Performs Autonomous Thinking, Tool Discovery, and Action Execution within a Single Reasoning Process

By Asif Razzaq, November 01, 2025

Most agent frameworks still run a predefined Reason, Act, Observe loop, so the agent can only use the tools that are injected in the prompt. This works for small tasks, but it fails when the toolset is large, when the task is long, and when the agent must change strategy in the middle of reasoning. The team from Renmin University of China and Xiaohongshu proposes DeepAgent as an end to end deep reasoning agent that keeps all of this inside one coherent reasoning process.

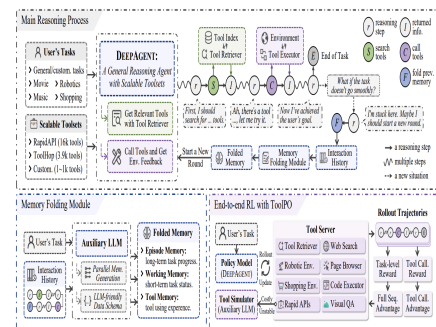


Figure 3: Overview of the DeepAgent framework. The main reasoning model autonomously discovers tools, executes actions, and folds previous memory to restart with structured memories, all within a unified thinking process. The DeepAgent is trained end-to-end with ToolPO, an RL method that uses a tool simulator to simulate large-scale real-world tool APIs, and rewards both final task success and correct intermediate tool calls through fine-grained advantage attribution.

[IIT Bombay researchers develop GPS-free control scheme for autonomous drone swarms](#)

By Purnima Sah, November 02, 2025

A new control scheme developed by Professor Dwaipayan Mukherjee and research scholar Chinmay Garanayak at the Indian Institute of Technology (IIT) Bombay enables unmanned aerial vehicles (UAVs) to fly in coordinated swarms without relying on GPS, inter-drone communication, or centralised control systems. The method uses bearing-only measurements obtained through onboard cameras to determine relative positions and maintain formation.



News Articles

DMRC holds events to boost cyber safety awareness

PIONEER NEWS SERVICE
■ New Delhi

Delhi Metro Rail Corporation (DMRC) observed Cyber Security Awareness Month throughout October 2025. It organised a series of events to promote cyber awareness and best practices among its workforce during the period.

The initiative marked a major step by DMRC to strengthen its cyber resilience at a time when public infrastructure faces growing digital threats.

As part of the campaign, DMRC hosted several key activities, including the UITP India Urban Rail Conference 2025, which brought together officials from India, Canada, Spain, Portugal and



Austria. Held under the theme "Success Stories of Global Cities", the conference showcased international collaborations in urban rail and highlighted the growing role of cybersecurity in the safe operation of modern transport systems.

A key highlight of the month was the signing of a

Memorandum of Understanding (MoU) between DMRC and C3iHub, IIT Kanpur, aimed at enhancing cooperation in key areas such as policy and framework formulation, research, innovation, and capacity building. The partnership is expected to significantly strengthen DMRC's cybersecu-

rity framework and resilience. A CISOs Roundtable was also organised, bringing together Cyber Information Security Officers from leading public and private sector organisations. The roundtable focused on sharing experiences, exchanging insights, and strengthening collective strategies against cyber threats in critical infrastructure sectors.

The awareness month featured several distinguished guests, including Dr Gulshan Rai, former National Cyber Security Coordinator, and Dr Sanjay Bahl, Director General of CERT-IN. Their sessions provided key insights into India's evolving cybersecurity framework and the need for continuous vigilance. The observance

concluded with an interactive session led by Col. Nidhish Bhatnagar, former Director of Rashtriya Raksha University. He spoke on the importance of safe online behaviour and practical steps to ensure personal and organisational cyber hygiene.

To engage employees directly, DMRC organised the Cyber Security Quiz Competition 2025 in two rounds: an online preliminary round followed by an offline final across various departments.

The competition promoted learning through participation, with the Running Shield awarded to the winning Head of Department, Raman Goyal, General Manager (Operations).

Source: Pioneer English Delhi Newspaper, 03-11-2025

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Adani Solar ships over 15,000 MW of solar modules

PIONEER NEWS SERVICE

■ New Delhi

Adani Solar has crossed a major milestone by shipping over 15,000 megawatts (MW) of solar modules across domestic and international markets - becoming the first and fastest Indian manufacturer to achieve this feat.

Of the total shipments, 10,000 MW were deployed within India and 5,000 MW exported abroad, equivalent to 28 million modules covering nearly 7,500 football fields, officials said.

Around 70 per cent of these modules were produced using Adani's India-made solar cells, reinforcing the company's role in advancing the Make in India and Atmanirbhar Bharat initiatives.

Adani Solar plans to more than double its production capacity from 4,000 MW to 10,000 MW by the next financial year and aims to ship another 15,000 MW in the coming years.

The company is the only



Indian manufacturer listed among the world's top 10 solar module producers by research firm Wood Mackenzie.

Wood Mackenzie, in a report last week, said India's

solar module manufacturing capacity is on track to surpass 125 GW by 2025, more than triple the domestic market demand of around 40 GW.

The report, 'Perfect Storm

in the Indian Solar Supply Chain', stated that despite near-term challenges, India has the clearest potential to become a large-scale alternative to China's solar supply chain dominance.

With a retail presence in over 550 districts through 35 exclusive channel partners, Adani Solar operates India's largest solar module distribution network, making high-quality, locally manufactured solar products widely accessible. "Our 15,000 MW milestone reflects Adani Solar's strong commitment to India's energy independence and clean energy future," said a company spokesperson. The impact of Adani Solar's shipments includes 5 million homes powered with affordable solar energy, 2,500 green jobs created, 60 million tonnes of carbon dioxide emissions avoided annually and modules spanning 65,000 km, enough to circle the Earth 1.5 times, officials said.

India's solar manufacturing capacity has surged from 2.3 GW in 2014 to an estimated 100 GW by 2025, with over 100 domestic manufacturers now active in the sector.

In the first half of FY26, India's solar exports rose 20

per cent year-on-year to USD 668 million, driven by strong demand from the US, UAE, Kenya, Hungary and Iran.

Adani Solar also leads India's rooftop solar segment, having supplied 1.78 GW of modules in the past year, enough to power 5,94,000 homes. The company provides 54 per cent of modules for the Government's Surya Ghar: Muft Bijli Yojana, which targets solar power to 10 million households by 2027.

With over half of India's installed electricity capacity already sourced from non-fossil fuels - five years ahead of its Paris Agreement target - the country is on track to achieve 500 GW of clean energy capacity by 2030.

Adani Solar, with its end-to-end manufacturing capability from ingots and wafers to modules and ancillary materials, such as solar glass, EVA and aluminium frames, continues to play a pivotal role in India's transition toward sustainable energy independence, they added.

Source: Pioneer English Newspaper, 03-11-2025

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India's intelligence boom: Teaching AI to live with the earth

AI is the new engine of progress and India's opportunity is to make it the first one that runs in harmony with nature



NISHANT SAHDEV

Artificial intelligence appears weightless — just code in the cloud, thinking at the speed of light. Yet behind that digital mist lies a heavy, physical world built from metal, electricity and heat. Every chat with an AI, every generated image, burns real power, releases real heat — and depends on minerals pulled from the earth. India's AI revolution is accelerating fast, but it rests on two fragile foundations — energy and elements. Without them, even the brightest algorithms fall silent.

The Hidden Fire Behind the Cloud

The "cloud" isn't made of mist. It's made of machines. Each data centre — the physical heart of artificial intelligence — is a warehouse the size of a football stadium, packed wall-to-wall with servers that hum, blink and never sleep. Together, they draw electricity on the scale of a small town.

Each chip inside them performs billions of calculations every second, and every calculation releases heat — enough to make these buildings feel like giant furnaces of intelligence. To prevent those servers from overheating, they must be cooled constantly. Not once a day. Not once a week. Every second, every minute, all year round. Cooling is what keeps the "cloud" alive.

But cooling comes at a cost. A single one-megawatt data centre and that's considered small today — gulps down about 25 million litres of water a year just to keep its servers from melting. Now imagine dozens of such centres sprouting across Bengaluru, Chennai, and Mumbai — cities already gasping for water in summer. In places where residents line up for tanker deliveries, machines may soon compete with people for the same supply. And electricity? The numbers are just as staggering. According to the Institute for Energy Economics and Financial Analysis (IEEFA), India's data-centre capacity will surge from 1 GW today to nearly 9 GW by 2030. Feeding that growth could consume 3 per cent of India's total power generation — roughly the same amount used by the entire state of Himachal Pradesh.



Cooling demand is exploding too. Mordor Intelligence projects that the water used for Indian data centres will climb from 150 billion litres in 2025 to 358 billion litres by 2030 — an increase of almost 19 Per cent every year. That's more than all of Mumbai's reservoirs combined. This is the unseen fire of the digital age: a network of vast engines that convert electricity into intelligence and heat. In the old industrial revolution, factories belched smoke; in this one, the emissions are invisible — measured in megawatts and degrees Celsius. The smarter our machines become, the hotter they run. And in a warming country like India, that's an ecological paradox: intelligence that risks overheating its own environment.

The mineral side of intelligence:

The other side of AI's hunger isn't thermal — it's elemental. Each chip that powers a large-language model depends on a complex chain of materials: lithium for batteries, cobalt and nickel for circuits, copper for conductors, silicon for processors, and rare — earth elements for cooling magnets and sensors. India imports nearly all of these.

The Government recently listed 30 critical minerals essential for advanced technologies and launched the National Critical Minerals Mission to reduce dependence. But building AI without securing materials is like trying to launch rockets without rocket fuel. If a single export ban or supply-chain shock hits — say, a shortage

of rare-earth magnets or high-purity copper — India's "intelligence factories" could slow to a crawl.



Globally, control over these minerals is becoming strategic. China processes about 60 Per cent of the world's rare-earths and over 70 Per cent of lithium-ion battery components. The US and Europe are racing to diversify. For India, this isn't just a trade issue — it's a question of technological sovereignty.

When heat and minerals collide:

Now combine these two pressures — heat and minerals. Picture a data centre in coastal Chennai. It relies on imported chillers and high-grade copper cooling systems. A heatwave drives up temperatures, a water shortage limits cooling and a global supply delay stalls replacement parts.

Suddenly, servers must throttle their workload to avoid overheating. The smartest machines in the world begin to slow — not because of algorithms, but because of physics. That's the uncomfortable truth: AI doesn't fail in theory; it fails in thermodynamics. And without material resilience, even great software nations can become compute-poor.

The world has started noticing this new dependency. The International Energy Agency (IEA) estimates that global data-centre electricity use — largely driven by AI — could more than double by 2030 to 945 terawatt-hours, roughly equal to Japan's current power demand. The United States is pairing new AI clusters with nuclear micro-reactors.

China has built hyperscale data parks powered by hydropower from Sichuan. The Gulf states are building AI centres near solar farms to offset cooling costs.

India can't afford to simply follow. If our data centres keep clustering in crowded metros, we'll drain grids and water sources before we scale AI itself.

A different blueprint for India:

The solution is simple and within reach. India can build its AI future where energy is clean, land is open and heat becomes an asset, not a waste.

Shift compute Inland: Rajasthan and Gujarat, rich in sunlight, could host renewable-powered AI corridors where solar farms feed data centres directly, cutting costs and emissions.

Reinvent cooling: Replace water-hungry systems with liquid-immersion technology that reduces water use by up to 90 Per cent. Recycle waste heat to power nearby industries or urban cooling networks.

Mine and recycle smarter: India generates over three million tonnes of electronic waste a year — enough

to recover valuable copper, aluminium and rare-earths for AI hardware.

Link science with infrastructure: Engineers trained in both AI and energy can design data centres that balance power, cooling and computation in real time.

This isn't utopian; it's simply India applying physics and geography wisely — turning sunlight, heat and waste into intelligence. In the first industrial revolution, nations competed on horsepower.

In this one, they'll compete on efficiency — who can run the most intelligence with the least energy, water and minerals. Think of it as a new kind of equation: Intelligence = Compute Power ÷ Resource Waste. The smaller the denominator — the less waste — the more intelligent the system becomes. India's edge lies precisely here.

We have the sunlight, the engineers and the will to build cleaner, cheaper, more efficient systems. If we connect them wisely, India could become the world's hub for green AI — intelligence that doesn't overheat the planet.

A grounded ending

Every great invention leaves a trace of fire behind. Steam engines filled the skies with soot. The internet devoured attention as fast as it shared knowledge. Now artificial intelligence — humanity's brightest creation — is burning silently, feeding on electricity, water and rare elements to keep its circuits alive. We call it "the cloud," but there's nothing weightless about it. Its mind is metal. Its breath is electricity. Its heartbeat is powered by rivers and sunlight. The brilliance that promises to change the world also risks overheating it.

India has the chance to break that pattern — to build intelligence that gives back more than it takes. If we treat energy, water and minerals as part of AI's design, not as its cost, we can create a model for the world: a system that thinks in electrons but lives in balance with the planet. That would be the true definition of progress — not machines that out-smart us, but machines that coexist with us. Because intelligence, at its highest form, isn't just about thought — it's about empathy for the world that allows thought to exist. When we achieve that, we won't just have built smarter machines; we'll have built a wiser civilisation.

Author is a theoretical physicist at the University of North Carolina, United States

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Algorithms: The new weapons of power



DR VINAY PATHAK

In a world where machines can code, true intelligence lies in designing the logic that drives them. The future belongs to those who think independently, critically and algorithmically, not mechanically. For decades, code was the undisputed currency of the digital age. The programmer, fluent in the language of machines, held the ultimate passport to opportunity, commanding high salaries and defining the frontier of innovation. Yet, that era of coding exclusivity is rapidly closing.

In a world now dominated by artificial intelligence, Large Language Models (LLMs) like ChatGPT have quickly turned the act of writing functional code into a readily available, almost commoditised service. If a machine can write the instructions, the core value must shift to the human capacity that directs the machine. That remaining, uniquely valuable capacity is algorithmic thinking. Those who could speak the language of machines shaped the digital revolution and found themselves at the centre of global transformation. Coding was once the most sought-after skill, a mark of intelligence, precision and opportunity.

In the 21st century, the definition of skill itself is being redefined and rewritten. Artificial Intelligence (AI) systems can now perform tasks that once demanded human expertise. Platforms like ChatGPT can write code, solve equations and simulate conversations in seconds. The monopoly of coders is dissolving. In this changing landscape, a new question emerges: if machines can code, what remains distinctly human?

The answer lies in the one domain where machines still follow rather than lead; the name of that field is known as the algorithms in the technology world.

Coding is about giving instructions, telling a computer what to do. Algorithms, however, decide how something should be done in the most efficient and elegant way. Coding demands precision and knowledge of programming languages, but algorithms demand imagination. A computer can reproduce existing code structures, but it cannot conceive original logic. It can mimic patterns, but it cannot invent new reasoning. Algorithmic



thinking involves framing problems, deconstructing complexity, and designing solutions from the ground or scratch. This capability for creative logic and independent critical thinking remains uniquely human which act as the base for new innovation.

Innovation has never been a result of imitation. It springs from curiosity, independent thought, and the courage to question what exists. Even Artificial Intelligence often seen as the pinnacle of machine power is a human creation. AI did not emerge from an artificial brain but from natural human intellect. Every AI model, including ChatGPT, operates on data and patterns designed and trained by human minds. Machines may process and produce repetitively; only humans originate.

Throughout history, power has followed mastery. In ancient times, strength was measured by control over weapons for example number of swords, guns and fire power. In the industrial era, mastery over machines brought dominance. The digital age crowned coders as its new elite. Now, power resides in the mastery of algorithms. Algorithms govern nearly every aspect of life. They secure nations from cyberattacks, regulate trade, manage health data and guide autonomous weapons. In the

twenty-first century, algorithms are not merely tools they are weapons. The ability to design them determines strategic advantage in business, politics and defence alike. A single algorithm has the potential to reshape history. When Larry Page and Sergey Brin created Google's PageRank, they didn't just write code;

they designed logic that ranked web pages by interconnectedness rather than by keywords. That idea turned Google into the world's most powerful information company. In India, the Aadhaar system the world's largest biometric identification project depends on algorithms capable of authenticating over a billion people in seconds. It is not the data alone, but the logic behind it, that makes such Governance innovation possible.

Even on the battlefield, algorithms are altering the rules of engagement. The war in Ukraine has demonstrated that cyber defense, satellite intelligence, and digital warfare rely as much on algorithmic systems as on missiles. The wars of the future will be waged with code, but won by algorithms. Operation Sindoor is also an example of India's indigenously developed algorithms and drones.

The roots of algorithmic logic run deep in human history. Ancient Indian texts, such as the *Bhagavad Gita* and the *Ramayana*, were

composed with rhythmic and repetitive precision frameworks designed for memory and transmission. Kabir's "dohas", too, were built on structured logic and pattern, ensuring their endurance across centuries.

Machines today can generate infinite text, but they lack purpose, design and emotion. Human creativity, unlike machine output, is guided by meaning. True influence arises not from producing infinite content, but from creating meaningful frameworks that inspire others to produce content. The future will belong to those who can think in algorithms people who can simplify complexity, find structure in chaos and link creativity with logic. In business, such thinkers will drive innovation; in Governance, they will design secure and transparent systems; in education, they will reimagine learning itself.

Coding may open doors, but algorithms determine how far one can travel. The contests of tomorrow in technology, economics, or geopolitics will be won not by those who write code faster, but by those who design logic more deeply. Artificial Intelligence may simulate intelligence, but it cannot replace the human capacity to imagine and reason. The next revolution will not be written in code it will be designed through algorithms by people capable of seeing beyond the machine. The ability of a nation to design and control its critical systems is the ultimate measure of algorithmic power.

In May 1998, the nuclear tests at Pokhran-II brought immediate international sanctions, yet this economic arm-twisting only solidified the nation's commitment to self-reliance. This spirit, that "Our destiny will not be dictated by anyone", was a declaration that scientific innovation would stand shoulder to shoulder with military and economic security, fulfilling the mandate of "Jai Jawan, Jai Kisan, Jai Vigyan." This same determination fuels India's digital and technological platforms today.

Aadhaar, the world's largest biometric identity system, is built on advanced algorithms that can instantly verify over a billion records. This colossal system is more than just a database; it is a foundational pillar of digital sovereignty, ensuring secure financial inclusion and welfare distribution without external dependencies.

Author is an educationist and JNU alumnus

Please read the complete article online in www.daily-pioneer.com

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Microsoft will grow headcount again with more AI leverage, says Nadella



Even as AI-fueled job cuts ripple across the tech industry, Microsoft appears to offer a silver lining. CEO Satya Nadella said that the Windows-maker has plans to expand its workforce again in the future. Except, these new hires will be more productive and efficient because of AI. "I will say we will grow our headcount, but the way I look at it is, that headcount we grow will grow with a lot more leverage than the headcount we had pre-AI," Nadella said in an appearance on a podcast hosted by Brad Gerstner, founder and CEO of technology investment firm Altimeter Capital, on Friday, October 31.

"It's the unlearning and learning process that I think will take the next year or so, then the headcount growth will come with max leverage," Nadella added. According to the Indian-origin tech leader, new employees will be able to figure out how to do their jobs differently by accessing AI features in Microsoft 365 productivity software and the GitHub Copilot AI coding assistant. These features are currently powered by large language models (LLMs) developed by OpenAI and Anthropic. Though many large tech companies have declined to provide specific reasons for job reductions, tech leaders and experts are increasingly citing artificial intelligence (AI) as a key factor in hiring and headcount reductions.

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