Volume 5 I Jul - Sep 2026

THULI

Droplets of Innovation. Ripples of Impact



A Quarterly Journal from IITM Pravartak

IITM PRAVARTAK CATALYSING INNOVATION

इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
सत्यमेव जयते

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FROM THE CEO'S DESK

Making Innovation Work for India.

Five years is an important milestone. It is also an opportunity to look back at how far we have come, the work we have undertaken and the ecosystem we have built.

In five years, Pravartak has grown across technology development, entrepreneurship and capability building. From supporting startups and advancing deep-tech research to working with industry, government and academic partners, we have taken on a wide range of challenges. The scale and diversity of this work reflect the commitment of the people and institutions that have been part of our journey. There is much to be proud of, and much more to accomplish.

For us, the real measure of this progress is what it enables. Our startups must grow into sustainable enterprises. Our research must find practical applications. The technologies we develop must address real needs and strengthen India's ability to build and deploy solutions of its own.

The same principle applies to our work beyond technology. Through Vidya Shakti, we are taking quality education to students across thousands of villages. It is a reminder that progress must also create opportunities for people who might otherwise be left out. As we grow, this responsibility remains important to us.

We see these efforts as part of a larger ambition: to help build an India that can develop its own technologies, nurture its entrepreneurs and equip its people with the capabilities to shape the future.

We thank our researchers, startups, partners, colleagues and everyone who has contributed to what Pravartak has achieved in these five years. We are particularly grateful to the Department of Science and Technology for the NM-ICPS initiative, and to IIT Madras for its support. What we have built together gives us a strong foundation, but it is not the destination.

The next five years must build on this foundation, with greater ambition, deeper partnerships and impact that reaches further.

Warm regards,

Dr. M. J. Shankar Raman

Chief Executive Officer
IITM Pravartak Technologies Foundation



What does India need to build technology it can truly own?

Five leaders from across Pravartak answer one question from five different seats: what it will take for India to own the technology it relies on.



Balamurali Shankar
Chief Knowledge Officer

India will not own its AI future by chasing ever bigger general-purpose LLMs. That race is decided by compute, capital and English-heavy data, and others are far ahead. Our opportunity lies in domain-specific models for problems India alone faces. For that, we need sovereign compute that academia and startups can access together, domain experts sitting with AI engineers, and benchmarks built on Indian conditions. Above all, we need a workforce that can build, fine-tune and maintain these systems, not merely use them.

True technological ownership for India begins when innovation heals rather than harms our ecosystems, ensuring self-reliance is not built on depleted resources or compromised communities. Indigenous technology must be regenerative by design, embedding circular economy principles, empowering local livelihoods and strengthening grassroots climate resilience.

India's tech sovereignty lies in frugal innovation that reduces carbon footprints while maximising impact, with accountability to protect the public commons. By uniting traditional ecological wisdom with cutting-edge engineering, we can build a humane digital age where every breakthrough enriches both our economy and our Earth.



Ramya Vasudevan
Senior Program Manager - CSR



Gayathri Varadarajan
Director - Engineering

India has the human capital, engineering talent and market opportunity to build technologies of its own. What we need is strategic intent, capable teams, institutional support and a collaborative ecosystem connecting research, academia, industry and government to turn innovation into world-class products.

Having demonstrated our ability to deliver technology for the world, India must now conceive, create, own and lead it. This requires a long-term commitment to nurturing indigenous technologies, earning trust, driving adoption and competing globally.

ShaktiDB advances this vision through an indigenous, enterprise-ready database platform that strengthens India's technological sovereignty. India's challenge is not a shortage of talent, but converting talent into technological ownership.

பல்குழுவும் பாழ்செய்யும் உட்பகையும் வேந்தலைக்கும் கொல்குறும்பும் இல்லத நாடு.

Meaning: A strong nation is free from divisive factions, internal conflicts and threats to its leadership.

Thirukkural reminds us that national strength rests on unity and stability. As AI reshapes the world, India must evolve faster, securing sovereignty across technology, defence, cybersecurity and legal systems. We must protect IP, commercialise indigenous innovations, build IP awareness through NIPAM and back deserving startups. At IITM Pravartak, we aim to unite talent and institutions around a nation-building mission to create technologies that safeguard India's future.



Veeraraghavan G
Chief Operations Officer



Most discussions on Indian R&D focus on higher spending. The bigger question is whether we are maximising the value of the ₹3.13 lakh crore spent in 2025–26. Success should be measured by market-ready products, licensed technologies and import substitution, while addressing critical gaps in semiconductors. India should also develop affordable technologies for emerging markets, leveraging shared challenges and growing demand. True technology ownership lies not just in invention, but in the ability to develop, manufacture, adapt and commercialise solutions independently.

Meenakshi Chidambaram
General Manager - Operations

FIVE YEARS. AN ECOSYSTEM IN MOTION.

What began as a mandate to connect sensors to machines has become an ecosystem connecting research to a nation.

Pravartak's mandate began, five years ago, as a fairly specific technical brief: Sensors, Networking, Actuators and Control Systems, one of the technology verticals the Department of Science and Technology assigned across the country's leading institutions as part of its national push into cyber-physical systems. At IIT Madras, that brief became IITM Pravartak Technologies Foundation, and its scope, on paper, was narrow, the layer of technology where sensing, computation and physical action meet.



Five years is not a long time to outgrow a mandate that specific, and Pravartak has not entirely outgrown it so much as built around it. The technical core still holds. What has changed is everything that now surrounds it, a deliberate architecture where a technology is developed, then carried into the hands of the institutions that can use it, then supported by a workforce trained to sustain it. It is this fuller shape, not the original acronym, that defines Pravartak today.

Building the technology

The core has not moved. Cyber-physical systems, the layer where sensing, computation and physical action meet, remains Pravartak's technological spine. That spine now carries an indigenous, end-to-end secure communication ecosystem for India's defence forces, built under the mission name SAMBHAV, alongside a separate and equally deliberate shift represented by CHAI, the Centre for Human-centric AI, built on a different question: how should intelligent systems support human judgement in the moments that matter most? CHAI's work today sits inside judicial registries and Parliament's search for real-time multilingual translation, and inside a diagnostic tool giving a village health centre something it never had, a second opinion.

> *A technology that stays in a lab has only travelled half the distance it needs to.*

The same instinct, take a capability and turn it toward something that matters, shows up in unexpected places too. Pravartak's heritage work has used photogrammetry and LiDAR to preserve the paintings inside Avudaiyar Temple and reveal geoglyphs across the Konkan landscape that had gone unnoticed for centuries, evidence that a technology ecosystem built for the future is just as capable of protecting the past.

Getting technology into use

A technology that stays in a lab has only travelled half the distance it needs to. The second part of Pravartak's architecture is built around adoption, moving what has been developed into the hands of the institutions and enterprises that can actually put it to work.

ShaktiDB is the clearest example. Engineered entirely in India, it now runs inside financial











institutions and national enterprises, not as a research demonstration, but as production infrastructure that organisations have chosen to build on. The same is true of the work inside government: sovereign language models trained on institutional knowledge for auditors, AI-enabled analytics for procurement oversight, and the AI course on the iGOT Karmayogi platform that became the most watched lecture course among India's Institutes of National Importance. In each case, the measure of success was never the technology itself, but whether an institution outside Pravartak chose to depend on it.

That same commitment extends to the people building the next generation of these technologies. Pravartak's startup ecosystem works less like a funding relationship and more like an extension of the lab itself, patient with an idea long enough to let it find its shape, and involved enough to help it get there. A founder here is as likely to gain a mentor or a first customer as a term sheet.

Preparing the people

The third part of the architecture is the one that makes the first two sustainable. None of this holds without a workforce that can build, deploy and maintain it, which is why Pravartak has treated capability building as core infrastructure rather than an add-on. The Digital Skills Academy has trained more than two thousand educators in cybersecurity. SWAYAM Plus has carried AI education to over a lakh learners, from rural school teachers to aspiring engineers. Vidya Shakti has taken foundational literacy and numeracy into thousands of villages, proof that capability building begins well before a student ever reaches a classroom built for technology careers. And through CSR partnerships with organisations like Vertiv, Lightstorm and Tamilnad Mercantile Bank, students, many the first in their families to hold a technology job, have been prepared for careers that did not exist for their parents. Twelve Rural Technology Centres now carry programming, robotics and AI directly into rural schools, extending the same logic to the very start of the pipeline.

Technology, adoption and talent are, in Pravartak's architecture, not three separate efforts running in parallel. They are one continuous chain, and the ecosystem exists to make sure nothing in it breaks.

A milestone, marked

That chain was visible in one room recently, at Impact Day, where Pravartak brought together partners from industry, academia and government to mark five years since that original mandate began. The occasion was less a celebration than an accounting, a look back at what had been built, and an acknowledgment of the people and institutions who had built it alongside Pravartak. It closed, deliberately, by looking forward, treating the milestones behind it less as an endpoint than as reason enough to widen the work further.

What comes next

The technologies in this story, SAMBHAV, CHAI, ShaktiDB, CHAT (Centre for Cultural Heritage, Archaeology & Technology), the classrooms reached, are not really the point. They are what became possible because an institution decided that a mandate to connect sensors and machines could also mean connecting a soldier to a safer network, an idea to the support it needs to survive its first year, and a student to a career her family never had access to before.

Five years ago, that was a narrow brief. Today, it is an ecosystem in motion. And an ecosystem, unlike a mandate, does not have an end date.

Distance No Longer Has to Determine the Quality of Learning a Student Can Access

Inside Vidya Shakti, a CSR initiative of IITM Pravartak Technologies Foundation reaching more than 8,300 villages across India.

A student in a government school in rural India watches a chemistry titration unfold on a screen in her classroom - colours shifting, measurements updating, an experiment her school has never had the equipment to run.

This is Vidya Shakti: a live, online education programme bringing Science, Mathematics and English into government schools across rural India, taught in the student's own language and anchored on the ground by a trained local facilitator. It runs today in more than 8,300 villages across ten states and two union territories, with institutional backing from IIT Madras's Pravartak Technologies Foundation.





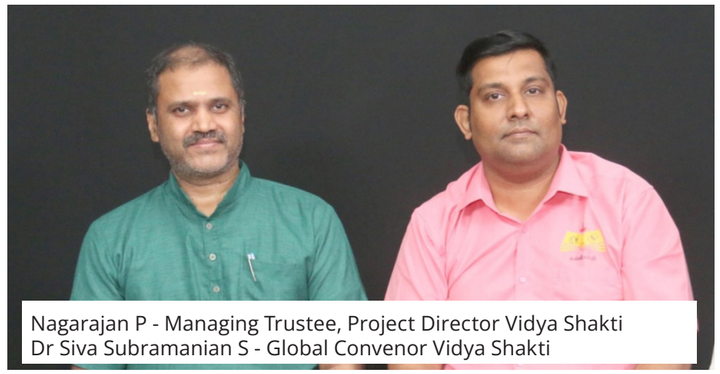
The idea had been circling for years before anyone could act on it: that the internet might do for a village classroom what no transfer scheme or infrastructure grant ever quite managed. IIT Madras had explored this route as early as 2017, but "it was not accepted before," says Nagarajan P, one of the programme's founding voices. "Post-COVID, online education became the norm." What the pandemic changed wasn't the ambition, it was the permission.

The diagnosis behind it was simple, and not the obvious one. "We found that dropouts happen because students aren't getting the right curiosity and interest, not because of financial reasons," Nagarajan P says. In October 2021, the team tested that theory in five villages in Tamil Nadu, a smart TV, an internet connection, and one local facilitator. From there, it grew into what it is today.

What Makes the Class Work

At the centre of each village is a Digital Didi, or Yuva: a locally educated woman, often working well below her qualifications, trained to be the last-mile link between an online classroom and the students sitting in front of it. She manages attendance, keeps the class running, and evaluates weekly assessments. "This does two things," Nagarajan P explains. "It puts educated rural women to work in the right direction, which is women's empowerment in itself. And it gives the school a support system it didn't have before." Close to 450 Digital Didis are active today, backed by a core team of about 40 full-time staff, tutors, content developers and technical support, who build and maintain everything the facilitators use in the field.

The teaching itself leans on what the programme calls virtual labs, full science experiments run in software rather than a physical lab. "You can do a chemistry titration, find the focal length of a lens, build an electric circuit, test the properties of a magnet, all without any equipment," Nagarajan P says. "It gives a complete feel of the experiment, in a practical way." For younger students learning to read, the same instinct applies to language: a picture is shown, the word is built through drag-and-drop or a spin-the-wheel activity, until it sticks. "When they learn through play, they remember it," says Dr. Siva, Global Convenor of Vidya Shakti who oversees the programme's operations.



Nagarajan P - Managing Trustee, Project Director Vidya Shakti
Dr Siva Subramanian S - Global Convenor Vidya Shakti

> *"A parent came and told us, my child comes home and tells us about school like it's a story now, what they did, what they saw," - Nagarajan P*

Teachers are trained through the state's own machinery, not around it, one day of hands-on instruction at a government training institute, followed by monthly refreshers. More than 20,000 have gone through this so far. "Each teacher touches at least a hundred students a day," Nagarajan P notes. The goal, in every state, is for teachers to eventually run it themselves. "That's already happened in Uttar Pradesh," Dr. Siva says.



From five villages to a movement

What began as five villages is now a presence in ten states and two union territories, with agreements recently signed for two more. Within the next academic year, the programme aims to be in eighteen states and five union territories, reaching close to a crore of students through its core grades 6 to 12 intervention alone.

The clearest evidence is in the numbers. In Uttar Pradesh, average scores that stood at four to four and a half out of ten in 2023 have held steady at six to six and a half for two academic years. Across weekly assessments more broadly, the share of students scoring in the lowest bracket has shrunk from 13 percent to 6 or 7 percent within a few months, as those students move up. "There's a shift from the lower brackets to the higher ones," Nagarajan P says, "and it holds."

In Tamil Nadu, the programme's earliest cohort has produced 28 engineers, two of them in aeronautical engineering, and three students admitted to dental college. In Varanasi, 125 students across ten blocks qualified last year for the government's National Means-cum-Merit Scholarship.

"A parent came and told us, my child comes home and tells us about school like it's a story now, what they did, what they saw," Nagarajan P recalls. "That's a story in the village. The pride of being associated with technology is very high now."

That pride runs through the students too. A termly Vidya Champion badge recognises one student per class who fields questions and represents their peers; in two states, this has grown into Vidya Shakti Clubs, where top performers take on roles as secretary, treasurer or president and teach their own classmates. "Nobody had started a peer-learning club before this," Dr. Siva says.

Once a year, the distance closes completely. Every April, twenty-five students from each participating state travel to the IIT Madras campus, many outside their district for the first time, to be recognised for their performance in the programme's assessments, their journey and stay covered by Pravartak. For a student from a village that didn't have a stable internet connection five years ago, that trip is its own answer to the question this initiative set out to ask: not whether a screen can reach a village, but what a village can reach, once someone decides it's worth the distance.



WHAT WILL IT TAKE FOR DEFENCE TO TRUST AI?



Perspective by Lt Gen Karanbir Brar, PVSM, AVSM (Retd), Distinguished Strategic Advisor, IITM Pravartak

Artificial Intelligence is rapidly moving from the laboratory to the battlefield. It can analyse thousands of sensor feeds, detect patterns invisible to humans, identify threats, recommend courses of action and compress decision cycles from hours to minutes or even seconds.

As machines move closer to the chain of command, reliability, explainability and human judgement become as important as intelligence. This raises a fundamental question for defence: How do you trust a machine when there can be no room for error?

In commercial applications, an incorrect AI recommendation may mean a poor advertisement, a failed transaction or an inefficient process. On the battlefield, an erroneous recommendation could result in fratricide, civilian casualties, loss of a critical platform, or even strategic escalation.

Defence therefore cannot measure AI merely by how intelligent it is. It must measure how trustworthy it is. This requires us to think beyond accuracy. A military AI system must be reliable under conditions very different from those in which it was trained. It must function when communications are degraded, sensors are spoofed, data is incomplete and the adversary is deliberately attempting to deceive it. It must also be explainable. A commander receiving an AI-generated recommendation must understand not only what the system recommends, but also why, based on what information, and with what level of confidence. Most importantly, AI must remain contestable. The human operator must retain the ability to question, override or reject its recommendation. This is where human-centric AI becomes fundamental to defence.

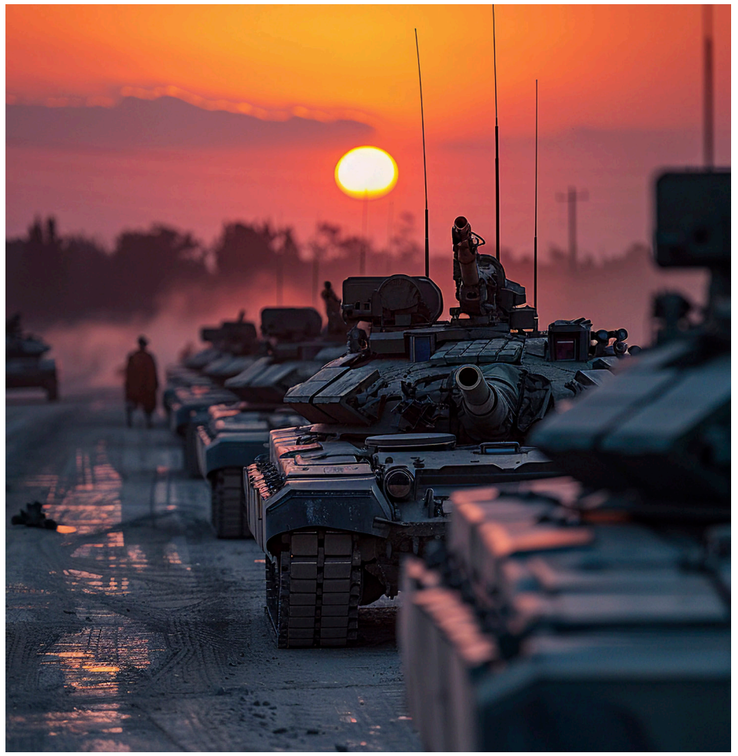
The objective should not be to remove the human from the decision cycle, but to build AI that makes the human better informed, faster and more capable of exercising judgement. The future commander may therefore operate very differently. Instead of personally processing an overwhelming volume of information, AI could undertake sensing, fusion, pattern recognition, prediction and decision support. But decision authority and responsibility must remain with the human commander and should be very clearly defined.

This distinction is critical. AI can calculate probability, recommend action, or accelerate decisions, but responsibility cannot be delegated to an algorithm. This is precisely why the work being carried out at Centre for Human Centric AI (CHAI) at IITM Pravartak has particular relevance for defence.

> *"Defence will trust AI not because it is intelligent, but because it is reliable, explainable, contestable and ultimately subordinate to human judgement."*

Human-centricity cannot be an ethical layer added after an AI system has been developed. It must be engineered into the system from the beginning through explainability, robustness, validation, human-machine interfaces, confidence thresholds, auditability, fail-safe behaviour and clearly defined levels of human authority. Defence AI must be tested not only for its functionality but also questioned: Can we understand it? Can we challenge it? Can we trust it under deception and uncertainty? Can we override it? And do we know who remains accountable when it is wrong?

Defence will trust AI not because it is intelligent, but because it is reliable, explainable, contestable and ultimately subordinate to human judgement. The militaries that master AI will gain enormous decision advantage. But the most powerful military AI will not necessarily be the system with the greatest autonomy. It will be the system in which machine intelligence and human judgement reinforce each other.



But technology alone will not create trust. Defence will also require a mindset change. Trust in AI cannot be ordered into existence; it has to be built through experience. Militaries should therefore start with pilot projects, test AI in realistic operational environments, measure its performance, learn from failures and progressively expand its role as confidence develops. Military leaders must take ownership of this transformation rather than leave AI solely to scientists or technology developers. Armed forces will increasingly need technologically competent leaders i.e., technocrats within the military and, more importantly, "AI orchestrators", who understand the operational problem, know what technology can and cannot do, and can bring together sensors, networks, AI, weapons and human judgement into an effective fighting system. AI adoption is therefore as much a leadership and organisational transformation as it is a technological one.

Ultimately, the future of defence is not Human versus AI. It is Human x AI, with the human remaining central. Or put another way, CHAI x Defence.

TuTr Hyperloop Advances India's Hyperloop Ambitions with New Industry Collaboration



From IIT Madras research to potential freight applications, the deep-tech startup is working to bring Hyperloop technology closer to real-world deployment.

TuTr Hyperloop is developing Hyperloop transport technology, with a focus on propulsion, levitation and systems that could support faster, more efficient movement of goods. Emerging from research at IIT Madras, the startup is working to translate advanced engineering into practical transport solutions.

A recent development came at Parivahan 2.0 – Global Hyperloop Summit, hosted by IIT Madras and Deendayal Port Authority. TuTr Hyperloop signed an agreement with Larsen & Toubro, marking another step towards industry collaboration in the development of Hyperloop technology.

With freight and port logistics among the potential applications being explored, the pilot project at Deendayal Port Authority represents an opportunity to evaluate Hyperloop technology in a real-world logistics context. For TuTr Hyperloop, the larger ambition is to develop transport solutions suited to India's infrastructure and logistics needs.

STARTUP SNAPSHOT

Sector: Deep Tech | Advanced Mobility

Origin: IIT Madras research ecosystem

Core Focus: Hyperloop transport technology

Technology: Linear induction motor propulsion and magnetic levitation

Potential Applications: Freight movement, port logistics and cargo transportation

The People Behind India's Data Centre Growth



The digital economy runs on machines that never switch off, and on the engineers who keep them that way.

Balaraju Kondaveeti
Co-founder & CEO, BodhBridge Education | Outreach Partner, IITM Pravartak

Behind every UPI payment, every streamed show, every AI query and cloud backup lies a vast physical network. Data centres are the unsung factories of the digital age. Most of us never see them, yet India's digital economy stands on them.

Demand is climbing fast. AI workloads are drawing billions in investment into multi-gigawatt campuses built for high-density computing, and data protection rules and RBI guidelines are pushing more data to be stored within India. Power has become the ultimate currency, so providers are pairing their facilities with solar, wind, and battery storage. India is on course to become a leading global hub for digital infrastructure, with the India AI Impact Summit 2026 adding momentum through announcements of over US$250 billion in investments across AI infrastructure, computing systems, and data centres. India's data centre capacity is growing beyond conservative expectations. Currently estimated at around 1.5–1.6 GW, installed power capacity could reach 8 GW by 2030, according to more ambitious projections from the industry.

But none of this runs on technology alone. A data centre is a non-stop, mission-critical facility where a single minute of downtime carries immense financial and operational risk. What the sector needs is less about software roles and more about facility reliability, power resilience and thermal management.

That makes data centre infrastructure an underexplored career path for engineering students willing to look beyond standard software roles. The work spans operations, power and cooling, networking and hardware,

Data centres are the unsung factories of the digital age.

and security and compliance, so Electrical, Mechanical, Computer Science and Electronics graduates all have a place in it.

To close the gap, IIT Madras Pravartak and Vertiv have launched a skilling programme for BE/B.Tech and Diploma students, bridging engineering fundamentals and real-world infrastructure operations. As a Vertiv CSR initiative, it is free for learners, and those who clear the assessment earn an industry credential.

India's digital economy is far more than software code. It depends on physical installations that must



be powered, cooled, secured and maintained around the clock, and programmes like this one are building the people who will keep them running.

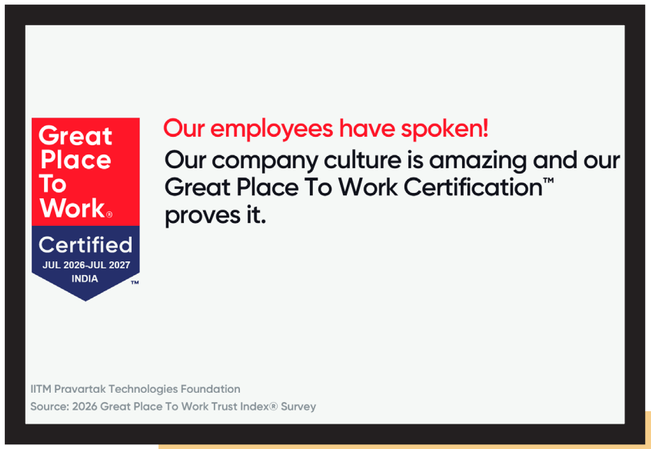
https://swayamplus.education.gov.in/courses/certified-intelligent-data-centre

GREAT PLACE TO WORK® CERTIFIED

July 2026 to July 2027

Five years of Pravartak have been built on more than technology, research and partnerships. They have been built on people. It is this belief that earned Pravartak its Great Place to Work® Certification, a recognition that reflects not just what the ecosystem has achieved, but who made it possible.

90% of Pravartak's employees say they were made to feel welcome from the very first day, a number that speaks less to policy, and more to culture.







NAMMA THIRUVIZHA | Celebrating Our People

Music, dance, games and plenty of cheer! *Namma Thiruvizha* brought Pravartak employees and their families together as part of the Impact Day celebrations, with a day of performances, fun and shared moments that celebrated the spirit of our community.

PEOPLE OF PRAVARTAK

Ramya's Storytelling Milestone



Ramya Vasudavan heads CSR and Facilities at Pravartak. Away from work, she is also a well-known storyteller in her own right, recently crossing a personal milestone of 2,500 stories narrated through her podcast, *Under the Tree*, which is also available on Spotify, and a WhatsApp storytelling group she has built and nurtured over the years.

It is a craft entirely her own, built outside of work hours and office walls, and one that has quietly earned her a following far beyond Pravartak.

New Perspectives. Stronger Leadership.

Management Development Program

Three members of the Pravartak team recently stepped away from their regular roles to sharpen their approach to leadership.

Sandeep Prasad Anumolu and Satyavratan G, both Principal Engineers at CoE-CHAI, attended Leading by Persuasion, an executive education programme at IIM Ahmedabad. Archunavel K, Assistant General Manager, Finance and Accounts, completed LEAD, Leadership Excellence and Development, a five-day programme at XLRI Jamshedpur.



Sandeep Prasad Anumolu, Principal Engineer, CoE-CHAI

"The diverse cohort and engaging faculty further broadened my perspective and understanding of different functions and leadership styles. Most importantly, the programme has helped me become a more approachable and thoughtful leader, focused on guiding and inspiring my team rather than simply directing them."

Satyavratan G, Principal Engineer, CoE-CHAI

"Initially, as a technical professional, I was unsure how management learning would connect with my role, but the programme exceeded my expectations through practical case studies, interactive discussions and experiential learning activities."



Archunavel K, Asst. General Manager, Finance & Accounts

"One of my key takeaways was that effective leadership is not just about managing people, but about taking ownership, collaborating, and finding the right solutions.I look forward to sharing these key learnings with our young team members and encouraging them to apply these leadership principles in their day-to-day work."



THULI CHALLENGE

How well do you know IITM Pravartak and India's innovation ecosystem? Put your knowledge to the test by answering this edition's trivia challenge.

Exclusively for IITM Pravartak employees.
Scan, participate, and stand a chance to win!

Scan the QR code, complete the quiz, and stand a chance to win exciting, Prizes!



Congratulations to **Raveena R and Aravindan**, our Thuli quiz winners.

Thank you to everyone who participated and shared their perspectives on how deep technology can address India's challenges.







SHAKTIDB

Strengthening Chennai's PostgreSQL Community

The Postgres Chennai Community Meetup brought together practitioners, experts and enthusiasts to exchange knowledge and explore real-world applications of PostgreSQL. Discussions covered scaling large databases for production environments and building AI-native capabilities, including hybrid search, using PostgreSQL. Through technical sessions, live demonstrations and interactive activities, the meetup fostered peer learning and strengthened connections across Chennai's PostgreSQL community.

SHAKTIDB | TECHNICAL ENGAGEMENT



Exploring the Power of Parallel Execution

ShaktiDB hosted a technical webinar on parallel execution, examining how concurrent operations contribute to database performance, scalability and reliability. Led by Dr. V. Sankaran, an industry veteran with over four decades of experience, the session explored parallel execution across database operations, including backup and recovery, maintenance processes and distributed database coordination, offering participants practical insights into ShaktiDB's capabilities.

SHAKTIDB | LATEST RELEASE

ShaktiDB R4 Advances Enterprise Database Capabilities

The latest release of ShaktiDB, built on PostgreSQL 18.x, strengthens its sovereign database platform with enhanced encryption, data governance, auditing and distributed workload support. FAISS integration introduces vector search capabilities for AI applications, while improved access controls reinforce operational security. The release also strengthens readiness for RBI and DPDPA compliance requirements.

ShaktiDB is funded by the Ministry of Electronics and Information Technology (MeitY) and co-developed with the Centre for Development of Advanced Computing (C-DAC).

इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
सत्यमेव जयते

सी-डैक CDAC

CAG | CADS PROGRAMME

Building Next-Generation Audit Capabilities

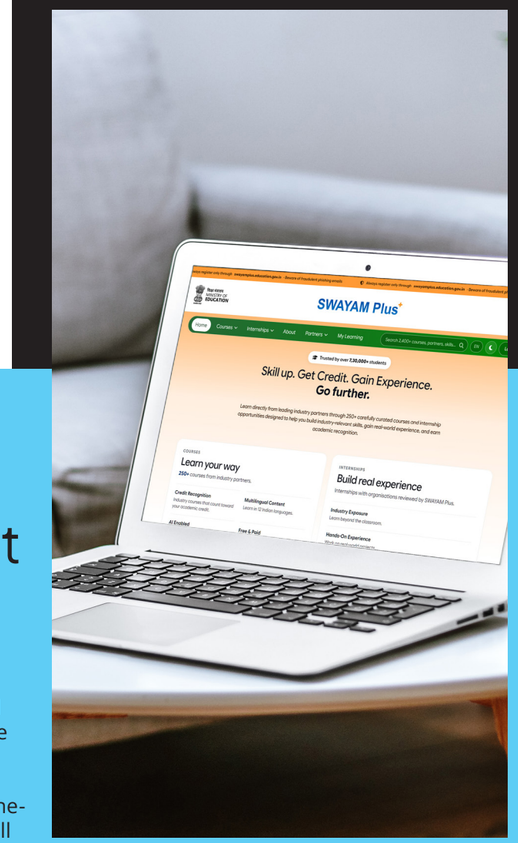
Developed in collaboration with the Comptroller and Auditor General of India, the CADS Foundation courses are now open to the public on SWAYAM Plus. Covering public audit, AI audit, cybersecurity audit, data protection audit, IT audit and information systems audit, the programme equips audit professionals with skills for an evolving digital landscape. Proficient-level courses and a specialised ESG course are also in development, alongside an advanced pathway leading to a PG Diploma for IA&AS officers.



SWAYAM PLUS | PLATFORM MILESTONE

A Unified Gateway for Industry-Aligned Learning

SWAYAM Plus has moved to its new national portal, offering learners and partner institutions an upgraded gateway to industry-aligned courses. Operated by IITM Pravartak in collaboration with IIT Madras, the platform supports course delivery, registration, payments, learner communications and certification.



MINISTRY OF CORPORATE AFFAIRS

Strengthening Compliance Support for MSMEs

The Ministry of Corporate Affairs' Corporate Mitra initiative, delivered through SWAYAM Plus in collaboration with ICAI, ICSI and ICMAI, aims to build a cadre of 3,000 professionals to support compliance and advisory needs across India's MSME sector. With registrations having opened in July 2026, the programme combines structured learning with on-the-job training to prepare professionals to support small businesses across the country.

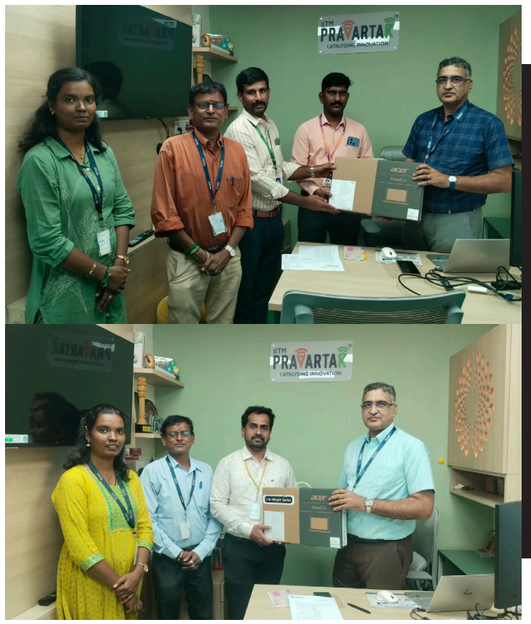


IN-SPAN | NEPAL

Strengthening Cross-Border Startup Connections

The second cohort of the India–Nepal Startup Partnership Network (IN-SPAN) concluded with a valedictory ceremony at IITM Pravartak Technologies Foundation, marking the completion of an eight-week immersive programme for 25 startups from Nepal.

Organised by the Embassy of India, Kathmandu, in collaboration with IITM Pravartak, the fully funded programme connected participating founders with India's startup and innovation ecosystem through interactions with IIT Madras faculty, entrepreneurs and industry experts. The experience fostered knowledge exchange, mentorship and opportunities for cross-border collaboration, strengthening entrepreneurial ties between India and Nepal.



CSR & SOCIAL IMPACT | Extending Emerging Technology Education Beyond Urban Centres

IITM Pravartak continues to expand its Rural Technology Centre (RTC) network to bring emerging-technology education to students in Tier 2 and Tier 3 locations. Implemented in partnership with colleges and supported by corporate CSR funding, the initiative combines structured learning with access to digital infrastructure. IITM Pravartak sponsors 15 laptops at each centre to facilitate hands-on learning. Between July and September 2026, three new centres were added, extending the initiative's reach to more student communities.



VIDYA SHAKTI | Expanding Our Reach

IITM Pravartak has signed an MoU with the Education Department, Andaman & Nicobar Islands, to extend the Vidya Shakti initiative to students across the Islands. Signed on 14 September 2026, the agreement marks another step towards expanding access to technology-enabled learning beyond the mainland, bringing more students within reach of quality educational support.

CHAT | Bringing Technology to Heritage Preservation

IITM Pravartak's work on the mural heritage of Avudaiyarkoil Temple combines digital documentation and a multi-method approach to preserve and make these artworks accessible for future generations. The research was presented at the 27th International Conference of the European Association for South Asian Archaeology and Art (EASAA), contributing to wider discussions on the role of technology in cultural heritage preservation.



Presented by Sneha Dabadgaon, Project Management Executive



IT Minister's Visit

We had the opportunity to welcome Dr. Kumar R, Hon'ble Minister for Artificial Intelligence, Information Technology & Digital Services, Government of Tamil Nadu, along with his team, for an interaction at our campus.

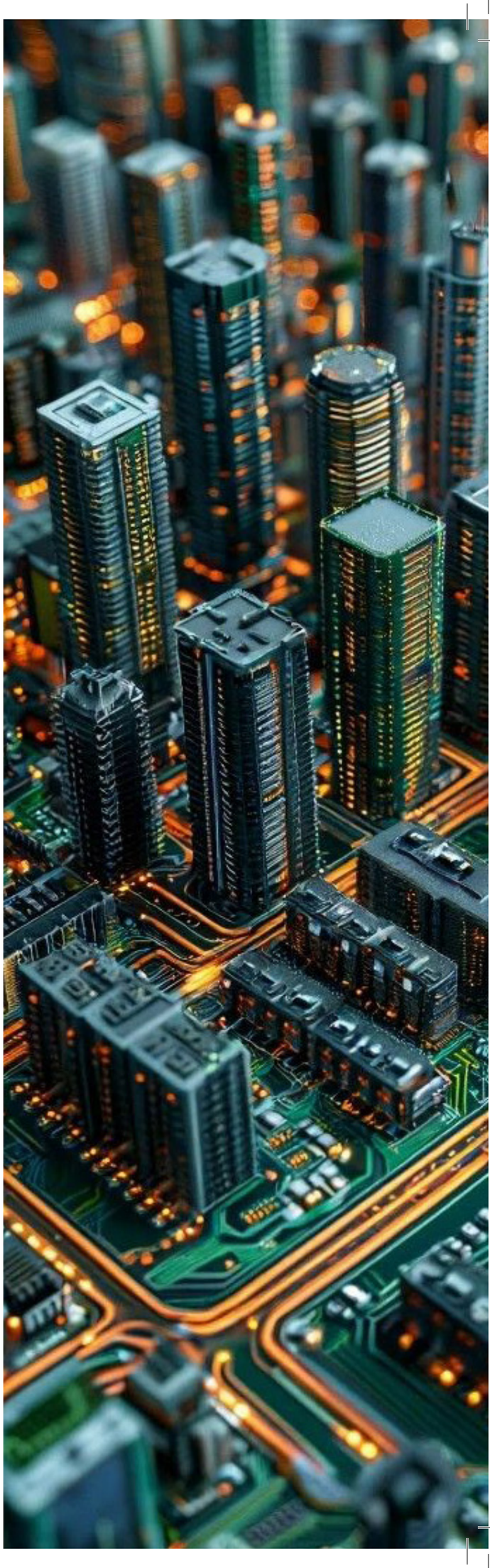
The discussion covered the evolving role of technology in addressing the needs of the state, with perspectives spanning emerging technologies, indigenous innovation, digital infrastructure, and the preservation of Tamil Nadu's rich cultural and temple heritage.

The interaction also provided an opportunity to share perspectives on the work being undertaken across the Pravartak innovation ecosystem and its engagement with technology, research and real-world applications.

We thank the Hon'ble Minister and his team for the visit and the opportunity for a constructive exchange.

IITM Pravartak Technologies Foundation

IITM Pravartak Technologies Foundation is a Technology Innovation Hub (TIH) hosted by IIT Madras, established under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) and supported by the Department of Science and Technology, Government of India. As a catalyst for India's deep-tech ecosystem, the Foundation brings together researchers, industry, startups, government, and strategic partners to accelerate indigenous innovation, foster entrepreneurship, and build future-ready technologies in Cyber-Physical Systems.



Get in touch

www.iitmpravartak.org.in

Join us in shaping India's deep-tech future!

Partner, collaborate, or contribute a story for the next edition of Thuli.

Write to us at *devika.nambiar@iitmpravartak.net*