India’s AI Revolution

Why in News?

Recently , China’s open-source AI model DeepSeek has created a shockwave in global tech and economic system.

What are the key developments in India’s AI computing infrastructure?

- **India’s AI infrastructure** - India is rapidly building a strong AI computing and semiconductor infrastructure to support its growing digital economy.
- **India AI Mission** - IndiaAI Mission was launched in 2024, with Rs. 10,300 crore allocation over five years to strengthen AI capabilities.
- **High-end common computing facility** - Under the AI mission, this facility equipped with 18,693 Graphics Processing Units (GPUs), is developed
- It will be one of the most extensive AI compute infrastructures globally and is nearly nine times that of the open-source AI model DeepSeek and about two-thirds of what ChatGPT operates on.

Key Developments
• **Scaling AI Compute Infrastructure** - The initial phase of the mission has already made 10,000 GPUs available, with the remaining units to be added soon. • **Opening Access to High-Performance Computing** - India has also pioneered the launch of an open GPU marketplace, making high-performance computing accessible to startups, researchers, and students. • **Robust GPU Supply Chain** - The government has selected 10 companies to supply the GPUs, ensuring a robust and diversified supply chain. • **Indigenous GPU Capabilities** - To further strengthen domestic capabilities, India aims to develop its own GPU within the next three to five years, reducing reliance on imported technology. • **Affordable Compute Access** - A new common compute facility is planned to be launched, allowing researchers and startups to access GPU power at a highly subsidised rate of Rs. 100 per hour, compared to the global cost of $2.5 to $3 per hour. • **Strengthening Semiconductor Manufacturing** - In parallel, India is advancing semiconductor manufacturing, with five semiconductor plants under construction.

How is open data advancing AI?

- **IndiaAI Datasets Platform** - The platform will enable Indian startups and researchers to access a unified repository of high-quality, anonymised datasets, reducing barriers to AI innovation.
- **Boosting AI Model Accuracy** - By providing large-scale, non-personal datasets, the

initiative will help reduce biases and improve the reliability of AI applications across domains such as agriculture, weather forecasting, and traffic management.
- **Centres of Excellence** - The government has established three AI Centres of Excellence (CoE) in Healthcare, Agriculture, and Sustainable Cities in New Delhi.
- **Skilling for AI-Driven Industries** - Plans are in place for five National Centres of Excellence for Skilling, to equip youth with industry-relevant expertise.

What are India's indigenous AI Models and language technologies?

- **India's Foundational Large Language Models** - IndiaAI has launched an initiative to develop indigenous foundational AI models, including LLMs and Small Language Models (SLMs).
- **Digital India BHASHINI** - An AI-led language translation platform designed to enable easy access to the internet and digital services in Indian languages , including voice-based access.
- **BharatGen** - The world's first government-funded multimodal LLM initiative, BharatGen was launched in 2024 in Delhi to enhance public service delivery and citizen engagement.
- **Sarvam-1 AI Model** – It is a large language model optimised for Indian languages with 2 billion parameters and supports ten major Indian languages.
- It is designed for applications such as language translation, text summarisation, and content generation.
- **Chitralekha** - An open-source video transcreation platform developed by AI4Bhārat to generate and edit audio transcripts in various Indic languages.
- **Hanooman's Everest 1.0** - A multilingual AI system developed by SML, Everest 1.0 supports 35 Indian languages, with plans to expand to 90.

How does AI improve Digital Public Infrastructure (DPI)?

- **India's DPI** – It has redefined digital innovation by combining public funding with private sector-led innovation.
- Platforms like Aadhaar, UPI, and DigiLocker serve as the foundation, while private entities build application-specific solutions on top of them.
- **Integrating AI and DPI** - DPI model is now being enhanced with AI, integrating intelligent solutions into financial and governance platforms.
- **Applications** - For Mahakumbh 2025, AI-driven DPI solutions played a crucial role in managing the world's largest human gathering.
    - **Railway crowd management** - AI-powered tools monitored real-time railway passenger movement to optimise crowd dispersal in Prayagraj.
    - **Kumbh Sah'AI'yak** - It is aBhashini-powered Kumbh chatbot enabled voice-based lost-and-found services, real-time translation, and multilingual assistance.

What is the status of AI Talent & Workforce Development?

- **Development of Global Capability Center** - India is adding one GCC every week, reinforcing its status as a preferred destination for global R&D and technological development.

- **National Education Policy (NEP) 2020** - University curriculum is revamped to include AI, 5G, and semiconductor design, aligning with the National Education Policy (NEP) 2020.
- **AI Education** - Under the IndiaAI Future Skills initiative, AI education is being expanded across undergraduate, postgraduate, and Ph.D. programs.
- **AI Talent Pipeline** - To enhance accessibility, Data and AI Labs are being established in Tier 2 and Tier 3 cities, with a model IndiaAI Data Lab already set up at NIELIT Delhi.

  According to the Stanford AI Index 2024, India ranks first globally in AI skill penetration with a score of 2.8, ahead of the US (2.2) and Germany (1.9).

- **India AI developers** - India has emerged as the fastest-growing developer population globally and is home to 16% of the world's AI talent.

  India ranks second in public generative AI projects on GitHub.

- **AI Talent Hubs** - The AI-skilled workforce has seen a 14-fold increase from 2016 to 2023, making India one of the top five fastest-growing AI talent hubs, alongside Singapore, Finland, Ireland, and Canada.

What is the status of India'sm AI adoption and industry growth?

- **India's AI Growth** - The India Skills Report 2024 by Wheebox forecasts that India's AI industry will reach USD 28.8 billion by 2025, with a CAGR of 45%.
- **Businesses Prioritising AI Investments** - 80% of Indian companies consider AI a core strategic priority, surpassing the global average of 75%.
- **GenAI Startup Funding** - According to NASSCOM report , Indian GenAI startup funding surged over six times quarter-on-quarter, reaching USD 51 million in Q2FY2025.
- **AI Transforming Workplaces** - Seven in 10 Indian employees used AI at work in 2024, up from five in 10 a year earlier, showcasing AI's rapid integration into workplaces.
- **AI Empowering Small & Medium Businesses (SMBs)** - AI-driven technologies, such as autonomous agents, are helping SMBs scale efficiently, personalise customer experiences, and optimise operations.

  According to Salesforce, 78% of Indian SMBs using AI reported revenue growth, while 93% stated AI has contributed to increased revenues.

- **Rapid Expansion of India's AI Economy** - As per the BCG-NASSCOM Report 2024, India's AI market is projected to grow at a CAGR of 25-35%, reinforcing its potential for innovation and job creation.

- While AI automates routine tasks, it is simultaneously generating new opportunities in data science, machine learning, and AI-driven applications.
- **AI Startup Support Ecosystem** - India hosts 520+ tech incubators and accelerators, ranking third globally in active programs.

How India is regulating AI?

- **Pragmatic AI Regulation** – India balances innovation and accountability by steering clear of overregulation that could stifle growth and unchecked market-driven governance that may create monopolies.
- **AI-driven safeguards** - Instead of relying solely on legislation, India is investing top universities and IITs to develop solutions for deep fakes, privacy risks, and cybersecurity threats.
- **Techno-legal approach** – It ensures AI remains a force for inclusive growth, fostering an ecosystem where innovation thrives while ethical concerns are proactively addressed.

India AI Regulation Frameworks
• **National Strategy for Artificial Intelligence 2018** -It aims to establish a strong basis for future regulation of AI in India. • **Principles for Responsible AI 2021** – It serves as India's roadmap for the creation of an ethical, responsible AI ecosystem across sectors. • **Operationalizing Principles for Responsible AI 202**1 – It emphasizes the need for regulatory and policy interventions, capacity building and incentivizing ethics by design with regards to AI. • **Digital Personal Data Protection Act 2023** – It regulates the processing of personal data of Indians. • **Draft Digital India Bill 2023** - It aims to replace India's existing Information Technology Act of 2000 and provide comprehensive oversight of the digital landscape. • **Draft AI Indian Standard** – The Bureau of Indian Standards (BIS) has a committee on AI that is proposing draft Indian Standards equivalent to ISO Standards.

What lies ahead?

- India's rapid advancements in artificial intelligence, underpinned by strategic government initiatives, have positioned the country as a global AI powerhouse.
- By expanding AI compute infrastructure, fostering indigenous AI models, enhancing digital public infrastructure, and investing in talent development, India is creating an inclusive and innovation-driven ecosystem.
- Emphasis on open data, affordable access to high-performance computing, and AI-driven solutions tailored to local needs ensures that the benefits of AI reach businesses, researchers, and citizens alike.
- As AI adoption accelerates across industries, India's proactive approach is not only strengthening its digital economy but also paving the way for self-reliance in critical technologies.
- With a clear vision for the future, India is set to become a leader in AI innovation, shaping the global AI landscape in the years to come.

Reference

PIB | India’s AI Revolution

