# Perspective: India’s Growing AI Ecosystem

**For Prelims: AI Action Summit, India AI Mission, Domestic AI Infrastructure, Generative AI Challenges, AI Governance, Foundational AI Models, AI for India 2030, UPI and AI, DigiLocker , Union Budget 2025-26,**

**For Mains: India’s Progress in AI, AI Challenges in India**

## Why in News?

India's progress in **advancing artificial intelligence (AI)** for the public good and national development has garnered attention, particularly following the Prime Minister's speech at the **AI Action Summit, 2025** in Paris.

- The country is making **significant strides in fostering ethical AI practices,** building foundational models, and improving data access. Its efforts in AI are seen as **vital for global collaboration** in technology and addressing societal challenges.

## Artificial Intelligence (AI) Action Summit, 2025

- The **AI Action Summit**, 2025 is a global forum that brings together world leaders, policymakers, technology experts, and industry representatives to discuss AI governance, ethics, and its role in society.
- The AI Action Summit in Paris is the **3rd summit,** following the **Bletchley Park Summit (UK 2023)** and the **Seoul Summit (South Korea 2024)**.
    - **Bletchley Park Declaration (28 countries):** Advocated safe, human-centric, and responsible AI.
    - **Seoul Summit (27 nations):** Reaffirmed international cooperation and proposed a network of AI Safety Institutes.

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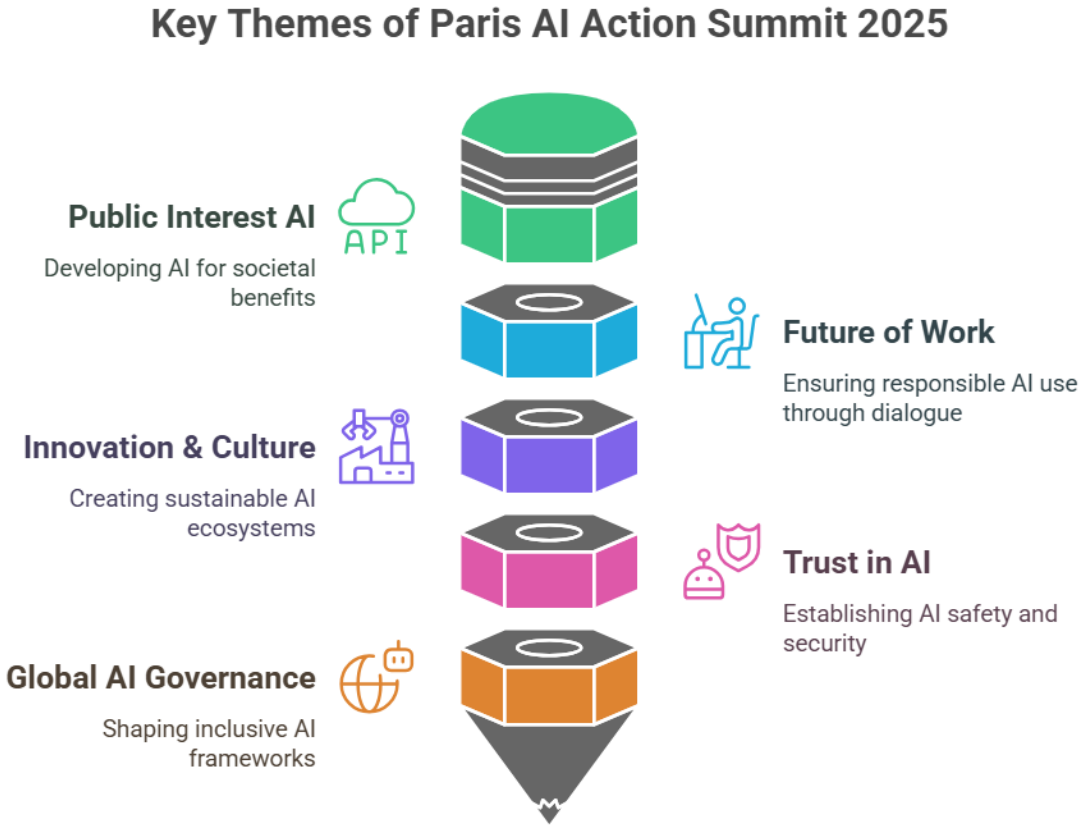


**Read More: Paris AI Summit 2025**

**Read More: Some Major AI Tools**

## How is India Advancing AI for Development Across Various Sectors?

- **India's AI Mission:** India is advancing its AI journey through the **India AI Mission**, with a budget of Rs 10,372 crores. This mission focuses on **seven key pillars** to foster AI development, including **improving access to Graphic Processing Units (GPUs)**, creating AI-ready data sets, and supporting AI application development.
    - The India AI Mission focuses on **building a skilled workforce** by offering fellowships for students at various levels and establishing data labs across the country. These labs **aim to train youth as data scientists** and annotators to meet the growing demand for AI-related jobs.
    - The mission includes **initiatives to assist startups at different stages**, from pre-seed to mature stages, fostering innovation in the AI sector.
    - The government is also building its own **large language model (LLM)** under the IndiaAI Mission, focusing on addressing the Indian context and biases.
        - A domestic foundational AI platform tailored to meet India's specific needs, languages, and cultures is expected to **launch by the end of 2025**.
        - The government is in touch with **multiple developers for this initiative, with initial funding being allocated to AI-based apps** in agriculture, learning disabilities, and **climate change.**
- **Development of Domestic GPU and Foundational AI Platform:** India plans to develop its own

GPU within 3-5 years, **utilizing open-source or licensed chipsets.**
    - The government will provide **18,000 high-end GPU-based computing facilities** for AI development, with 10,000 already available.
    - The GPUs are procured under the India AI Mission, with Rs 2,000 crore allocated in the **2025-26 Union Budget** for the mission.
    - A common facility will be launched where **startups and researchers can access high-end GPUs** at Rs 150 per hour, with a 40% subsidy to end users.
        - This will provide affordable access to computational power for AI development, especially for smaller entities and academia.
    - **India's collaboration with NVIDIA** aims to enhance AI computing capabilities through the establishment of data centers.
- **AI Action Summit:** At the AI Action Summit, 2025 **co-chaired by India and France,** key announcements were made. These include the establishment of a **foundation for public interest AI,** with an investment of €400 million, and a **Coalition for Sustainable AI,** which ensures energy-efficient AI development.
- **Safe and Ethical AI**: India is positioning itself as a global leader in AI by emphasizing **ethical AI practices,** fostering energy-efficient solutions, and promoting inclusive development during its **G20 presidency**.
    - Through initiatives like **AI for India 2030**, the Indian economy is not only advancing its own socio-economic goals but also contributing to the **global dialogue on responsible AI governance.**
    - Projects are being carried out in collaboration with academic institutions on issues like **watermarking**, identifying **deep fakes**, and **machine unlearning.**
        - **Machine Unlearning (MUL)** is a technique that enables AI systems to **intentionally discard specific data**, especially incorrect, biased, outdated, or sensitive information.
- **Centers of Excellence**: The government has set up several **AI centers of excellence** in collaboration with top academic institutions, focusing on sectors like **agriculture**, healthcare, and smart mobility. These efforts aim to drive India's AI ecosystem forward.
    - A new Centre of Excellence for AI in education will be established with an outlay of Rs 500 crore, in addition to other AI centres for agriculture, health, and sustainable cities.
    - The government also plans **five National Centres of Excellence for Skilling** to equip youth with relevant industry skills in collaboration with global partners.
- **Development of AI Infrastructure:** India is expanding its **digital public infrastructure** solutions globally, with 18-19 countries adopting biometric identity platforms similar to **Aadhar.**
    - **UPI** is being used worldwide, even in Paris for shopping and ticketing, and **countries like Brazil** are developing similar digital payment systems.
    - **India is sharing its digital solutions** in areas like data storage (e.g., **DigiLocker**), healthcare (e.g., Digital Mission), and AI with global partners, especially **targeting low- and middle-income countries.**

## What are the Challenges related to Generative AI Before India?

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## What are the Challenges India Faces in the Field of AI?

- **Computational Access:** One major challenge is the **high computational costs** associated with large AI models. As models grow, so do the expenses, making them unaffordable for widespread adoption in India, especially for tasks like inferencing. For instance, the average cost of computing is **expected to climb 89% between 2023 and 2025,** driven by the increasing use of **generative AI.**
- **Data Availability:** Another challenge is the **scarcity of AI-ready data sets**, particularly for

Indian applications. This limits the **ability to train and develop effective AI models** tailored to local needs.

- **Dependency on Foreign Models:** India currently depends on AI models developed abroad, limiting the ability to fully leverage homegrown technologies. **Proprietary models like GPT-4** require licensing, making India **reliant on external pricing and policy changes.** This dependency can lead to increased costs and reduced control over AI applications.
- **Infrastructure:** A significant challenge lies in accessing the necessary AI computing power. India **relies on foreign companies like NVIDIA for critical AI chips and GPUs,** which creates limitations in scaling AI solutions. This reliance on imported hardware can hinder the development and deployment of AI technologies.
- **Diversity:** India's **vast linguistic, cultural, and geographical diversity** makes it challenging to build AI solutions that cater to all regions. Variations in accents, dialects, and languages across states add complexity to developing effective AI applications, especially in areas like speech recognition and translation. For example, AI models need to **accommodate 22 official languages** and numerous dialects to be effective across the country.
- **Ethical Issues:** Ethical concerns and the potential misuse of AI, such as deepfakes or **misinformation,** remain significant. Ensuring that AI is used responsibly and ethically is a major challenge, given the **rapid advancements and potential for misuse.**

## What are India's Initiatives Related to Artificial Intelligence?

**Read More: Sansad TV Special: India's AI Readiness**

## Way Forward

- **Developing Cost-Effective Models:** To address the high computational costs, India can focus on **developing cost-effective AI models** and infrastructure. The Indian government plans to launch an affordable **indigenous AI model** costing under Rs. 100 per hour with a 40% subsidy, making it accessible to startups and researchers.
- **Ensuring Data Availability:** Enhancing data availability can be achieved by **creating a unified platform for AI-ready datasets**. The **India AI Datasets Platform** is a significant step in this direction, providing seamless access to high-quality non-personal datasets for AI innovation.
- **Protecting Sovereignty:** Developing a **sovereign foundational AI model** is crucial for reducing dependency on foreign models. The IndiaAI Mission aims to build such a model, which will cater to India's diverse linguistic and cultural needs.
- **Developing Infrastructure:** To overcome the limitations in computational infrastructure, **India needs to invest in building its own AI computing power.** The government plans to **procure 10,000 GPUs within the next 18-24 months** to boost AI research and development.
- **Inclusive Models:** Addressing the diversity in India's linguistic, cultural, and geographical landscape requires AI solutions tailored to local contexts. The **AI for India 2030 initiative** emphasizes **inclusive and responsible AI adoption** to cater to the nation's socio-economic fabric.
- **Ethical AI:** Ensuring ethical AI use involves establishing robust guidelines and frameworks. **India's Responsible AI for All framework** by **NITI Aayog** provides a comprehensive approach to AI governance.

### UPSC Civil Services Examination, Previous Year Questions (PYQs)

***Prelims:***

**Q. With the present state of development, Artificial Intelligence can effectively do which of the following? (2020)**

1. Bring down electricity consumption in industrial units

2. Create meaningful short stories and songs
3. Disease diagnosis
4. Text-to-Speech Conversion
5. Wireless transmission of electrical energy

**Select the correct answer using the code given below:**

**(a)** 1, 2, 3 and 5 only

**(b)** 1, 3 and 4 only

**(c)** 2, 4 and 5 only

**(d)** 1, 2, 3, 4 and 5

**Ans: (d)**

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***Mains:***

**Q**. Introduce the concept of Artificial Intelligence (AI). How does AI help clinical diagnosis? Do you perceive any threat to privacy of the individual in the use of AI in healthcare? **(2023)**