

GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
RAJYA SABHA
UNSTARRED QUESTION NO. 2934
TO BE ANSWERED ON: 20.12.2024

SKILLING OF WORKFORCE IN AI GOVERNANCE AND DEVELOPMENT

2934. SMT. RAJANI ASHOKRAO PATIL:

Will the Minister of Electronics and Information Technology be pleased to state:

- (a) the steps being taken by Government to upskill the workforce in Artificial Intelligence (AI) governance and development to address challenges posed by rapid AI adoption including potential job displacement;
- (b) whether the AI Ethical Certification Project and Privacy Enhancing Strategy Project under the Ministry has established measurable objectives and timelines, if so, the details thereof; and
- (c) the details of international collaborations or partnerships undertaken by Government to co-develop ethical AI governance frameworks and standards?

ANSWER

MINISTER OF STATE FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI JITIN PRASADA)

(a): The Government of India emphasizes the concept of 'AI for All,' aligning with the Hon'ble Prime Minister's vision to democratize use of technology. This initiative aims to ensure that AI benefits all sectors of society, driving innovation and growth.

India is regarded as the skills capital in technology and Artificial Intelligence. The most reliable ranking in AI is placing India among the top countries with AI Skills, AI capabilities, and policies to use AI. Stanford University has ranked India among the top four countries along with the US, China, and the UK in the Global and National AI vibrancy ranking based on 42 indicators. GitHub, which is community of developers has ranked India at the top with the global share of 24% of all projects.

Government is committed to harnessing the power of Artificial Intelligence (AI) for the good of our people in sectors like healthcare, agriculture and education. At the same time, the Government is cognizant of the risks posed by AI.

The advent of Artificial Intelligence is being used as a tool for augmenting capability. AI will result in job creation in various streams like data science, data curation, etc. India has a distinct advantage globally when it comes to having a workforce trained in Artificial Intelligence. This will require reskilling and upskilling, for which the Government has taken various initiatives:

- i. FutureSkills PRIME:** MeitY and NASSCOM are collaborating to upskill the professionals through FutureSkills Prime programme. FutureSkills PRIME is a platform comprising various online skills providers to provide digital skills training on a national scale in online mode. The programme is aimed at re-skilling/ up-skilling of IT professionals in 10 new/emerging technologies namely Artificial Intelligence, Big Data Analytics, Robotic Process Automation, Additive Manufacturing/ 3D Printing, Cloud Computing, Social & Mobile, Cyber Security, Augmented/Virtual Reality, Internet of Things and Blockchain. Besides the online mode, 40 centres of CDAC and NIELIT are also implementing the Blended Learning mode, Training of Trainers, and Government Official training programmes.

So far, 8.65 Lakh candidates have enrolled/trained in various courses including 3.20 Lakh Candidates in AI/Big Data Analytics technologies. A total of 172 courses are available in the AI/Big Data Analytics on the FutureSkills PRIME platform. In addition, C-DAC/NIELIT Centres have trained 2,879 Government Officials and Trainers in AI under the programme.

- ii. **IndiaAI Mission:** Union Cabinet led by Hon'ble Prime Minister has approved the IndiaAI Mission on 7th March 2024, a strategic initiative to establish a robust and inclusive AI ecosystem that aligns with the country's development goals. This mission is driven by a vision to position India as a global leader in artificial intelligence by focusing on seven foundational pillars.

The Mission is being implemented by IndiaAI Independent Business Division (IBD) under Digital India Corporation, and key actions undertaken for implementation of the IndiaAI Mission are as below:

IndiaAI Compute:

- IndiaAI compute pillar envisions building a high-end scalable AI computing ecosystem comprising AI compute infrastructure of 10,000 or more Graphics Processing Units (GPUs).
- Applications were invited for empanelment of agencies for providing AI services on Cloud on 16th August 2024. The bid submission was closed on 28th November 2024 and 19 bidders have submitted bids in response to the request.

IndiaAI FutureSkills:

- IndiaAI FutureSkills Pillar envisions to augment the number of graduates, post-graduate and PhDs in AI domain. Further, it envisions setting up Data and AI Labs in Tier 2 and Tier 3 cities across India, to impart foundational-level courses in Data and AI.
- IndiaAI fellowship are being awarded annually to 400 B.Tech and 500 M.Tech students working in AI domain from All India Council for Technical Education (AICTE) recognized engineering institutions.
- Top 50 National Institutional Ranking Framework (NIRF) ranked research institutes have been asked to take new PhD scholars under IndiaAI PhD fellowship
- A model IndiaAI Data Lab in the National Institute of Electronics & Information Technology (NIELIT's), Delhi has been set up, which acts as a reference point for the infrastructure to be set up in Tier 2 and Tier 3 cities as a part of the initiative.
- All the 36 States and Union Territories (UTs) have been requested to submit their nominated list of Industrial Training Institutes (ITIs)/Polytechnics located in Tier 2 and Tier 3 cities for setting up of Data Labs. Additionally, IndiaAI in collaboration with NIELIT plans to establish 27 data labs in Tier 2 and Tier 3 cities across the country, details of which are placed at **Annexure I**.

IndiaAI Startup Financing:

- IndiaAI Startup Financing pillar is to provide support to AI startups at all stages. Multiple rounds of stakeholder consultations have been held to deliberate on the scheme for supporting AI Startups at Pre-Seed, Seed and Growth stage.

IndiaAI Innovation Centre:

- IndiaAI Innovation centre aims to develop and deploy indigenous Large Multimodal Models (LMMs) trained on India-specific data
- Multiple rounds of stakeholder consultations have been held to deliberate on the IndiaAI's strategy for building indigenous Large Multi-model Models (LMMs).

IndiaAI Datasets Platform:

- The IndiaAI Datasets Platform (IDP) seeks to enhance access, quality, and utilization of public sector datasets to make them AI-ready.

- A comprehensive plan has been created for developing platform and a feature list has been finalized after evaluating other prominent dataset platforms such as Hugging Face, Dubai Pulse etc.

IndiaAI Applications Development Initiative:

- IndiaAI Application Development Initiative aims to develop, scale, and promote the adoption of impactful AI solutions to effectively tackle significant problem statements.
- IndiaAI Innovation challenge was launched on 13th August 2024 for the themes of healthcare, agriculture, improved governance, climate change & disaster management and assistive technologies for learning disabilities. The Innovation Challenge was open to Indian innovators, startups, non-profits, students, academic/R&D organizations, and companies. A total of 900 applications have been received across the five focus areas by the deadline of 30th September.
- CyberGuard AI Hackathon was launched on 17th October 2024 for Cybercrime prevention in collaboration with the Indian Cybercrime Coordination Centre (I4C) and in response 263 responses have been received.

Safe & Trusted AI:

- This pillar enables the implementation of Responsible AI projects including the development of indigenous tools and frameworks, self-assessment checklists for innovators, and other guidelines and governance frameworks.
- Eight Responsible AI Projects have been selected to address the need for robust guardrails to ensure the responsible development, deployment, and adoption of AI technologies. The projects cover a range of critical themes, including Machine Unlearning, Synthetic Data Generation, AI Bias Mitigation, Ethical AI Frameworks, Privacy-Enhancing Tools, Explainable AI, AI Governance Testing, and Algorithm Auditing Tools. The details of the selected projects are given at **Annexure II**.

iii. Visvesvaraya PhD Scheme: The Visvesvaraya PhD Scheme aims to enhance the number of PhDs in the Electronics System Design & Manufacturing (ESDM) and IT/IT Enabled Services (IT/ITES) sectors, including Artificial Intelligence, in the country. In Phase I of the scheme, 904 PhD candidates successfully completed their PhDs and 74 PhD candidates submitted theses or nearing completion of their PhDs. Phase II of the scheme has been launched to support 1,000 full-time and 150 part-time PhD candidates over a period of nine years. Under this phase, institutions have been allocated 600 full-time and 90 part-time PhD seats.

iv. YUVAi - Youth for Unnati and Vikas with AI: MeitY in collaboration with its partners, has launched ‘YUVAi: Youth for Unnati and Vikas with AI’- A National Programme for School Students with the objective of enabling school students from classes 8th to 12th with AI tech and social skills in an inclusive manner. The programme will provide a platform for youth to learn and apply AI skills in 8 thematic areas- Krishi, Aarogya, Shiksha, Paryavaran, Parivahan, Grameen Vikas, Smart Cities and Vidhi aur Nyaay.

More than 9,000 students from 31 states and Union Territories benefited from the program, along with over 200 teachers. Over 1,000 students participated in the online orientation sessions, and 750 + ideas were submitted. The top 10 winners were announced and felicitated during the GPAI Summit in 2023.

(b): The ‘Safe & Trusted’ pillar within the IndiaAI Mission aims to encourage the adoption of AI in a responsible manner with the principles of safety, security, transparency, and privacy embedded in the design of AI technology to mitigate the AI risks, placing the idea of ‘AI for All’ at its very core.

Under this Pillar, two Responsible AI Projects have been selected under the themes “AI Ethical Certification” and “Privacy Enhancing Strategy” to address the need for robust guardrails to ensure the responsible development, deployment, and adoption of AI technologies.

The project selected under the theme “AI Ethical Certification” is "Nishpaksh: Tools for assessing the fairness of AI models". The objective of the project is to develop a platform consisting of tools to assess the fairness of models in accordance with the fairness standard released by Telecommunication Engineering Centre (TEC). The duration of the project is 2 years.

The project selected under the theme “Privacy Enhancing Strategy” is "Robust Privacy-Preserving Machine Learning Models". The objective of the project is to develop learning algorithms that work well even in environments that are vulnerable to attacks. The duration of the project is 2 years.

(c): India is a founding member of the Global Partnership on Artificial Intelligence (GPAI) and has contributed significantly to its vision of advancing Safe, Secure, and Trustworthy AI globally. India was elected as the Incoming Council Chair for 2023, Lead Chair for 2024, and Outgoing Chair for 2025. As the Incoming Council Chair, India hosted the Annual GPAI Summit in December, 2023 which was a landmark event attended by 22000+ participants. As Lead Chair, India hosted the "Global India AI Summit" and midyear GPAI Summit in July 2024, in New Delhi where the 6th GPAI Ministerial Council was held and the event was attended by 12000+ participants. Under the GPAI New Delhi Declaration 2024, GPAI members came to a consensus about the future of the GPAI and announced a renewed vision for GPAI through an integrated partnership with OECD bringing together all current OECD members & GPAI countries on equal footing, under the GPAI brand.

The G20 New Delhi Leader’s Declaration commits to pursue a pro-innovation regulatory/governance approach that maximizes the benefits and considers the risks associated with the use of AI. India is also a signatory to São Luís Declaration adopted in Brazil in 2024, which also highlights the need for global cooperation for AI governance and encourages G20 members to advance and reinforce interoperability between AI governance frameworks.

Further, India has actively participated in the discussions pertaining to a United Nations General Assembly (UNGA) resolution on AI for Sustainable Development Goals (SDGs) and co-sponsored that resolution.

India is a member of the Hiroshima AI Process Friends Group which involves a collaborative effort by member countries to develop a Comprehensive Policy Framework for Artificial Intelligence that includes guiding principles and code of conduct aimed at promoting the safe, secure and trustworthy advanced AI systems.

India is also a signatory to the UN GDC adopted on September 22, 2024. Grounded in human rights and international law, the GDC includes commitments on connectivity, online safety, and AI governance through the establishment of a multidisciplinary Independent International Scientific Panel on AI and a Global Dialogue on AI governance in the margins of UN conferences and meetings.

List of Data & AI labs planned by IndiaAI in collaboration with NIELIT in Tier 2 and Tier 3 cities across the country:

S.No.	NIELIT Centre	State/UT
1	Gorakhpur	Uttar Pradesh
2	Lucknow	Uttar Pradesh
3	Shimla	Himachal Pradesh
4	Aurangabad	Maharashtra
5	Patna	Bihar
6	Buxar	Bihar
7	Muzaffarpur	Bihar
8	Kurukshetra	Haryana
9	Ropar	Punjab
10	Haridwar	Uttarakhand
11	Bikaner	Rajasthan
12	Tezpur	Assam
13	Bhubaneswar	Odisha
14	Calicut	Kerala
15	Guwahati	Assam
16	Itanagar	Arunachal Pradesh
17	Srinagar	J&K
18	Jammu	J&K
19	Ranchi	Jharkhand
20	Imphal	Manipur
21	Gangtok	Sikkim
22	Agartala	Tripura
23	Aizawl	Mizoram
24	Shillong	Meghalaya
25	Kohima	Nagaland
26	Leh	Ladakh
27	Silchar	Assam

The details of the selected projects under “Safe & Trusted AI” Pillar are as under:

NAME OF THE THEME	SELECTED APPLICANT	TITLE OF THE PROJECT
Machine Unlearning	IIT Jodhpur	Machine Unlearning in Generative Foundation Models
Synthetic Data Generation	IIT Roorkee	Design and Development of Method for Generating Synthetic Data for Mitigating Bias in Datasets; and Framework for Mitigating Bias in Machine Learning Pipeline for Responsible AI
AI Bias Mitigation Strategy	National Institute of Technology Raipur	Development of Responsible Artificial Intelligence for Bias Mitigation in Health Care Systems
Explainable AI Framework	DIAT Pune and Mindgraph Technology Pvt. Ltd.	Enabling Explainable and Privacy Preserving AI for Security
Privacy Enhancing Strategy	IIT Delhi, IIIT Delhi, IIT Dharwad and Telecommunication Engineering Center (TEC)	Robust Privacy-Preserving Machine Learning Models
AI Ethical Certification Framework	IIIT Delhi and Telecommunication Engineering Center (TEC)	Tools for assessing fairness of AI model
AI Algorithm Auditing Tool	Civic Data Labs	ParakhAI - An open-source framework and toolkit for Participatory Algorithmic Auditing
AI Governance Testing Framework	Amrita Vishwa Vidyapeetham and Telecommunication Engineering Center (TEC)	Track-LLM, Transparency, Risk Assessment, Context & Knowledge for Large Language Models
