Jammu & Kashmir's AI Framework

Digital J&K

JAMMU & KASHMIR'S ARTIFICAL INTELLIGENCE (AI) FRAMEWORK

Artificial Intelligence (AI), is becoming an integral part of every single facet of our lives. Artificial Intelligence by definition is "the ability of a machine or Computer system to copy human intelligence processes, learn from experiences, adapt to new information and perform human-like activities." For AI enabled processes and machines, all the data is equivalent to what experiences and information has been to humans.

The following key factors have enabled the growth and expansion of Artificial Intelligence:

- The volume of digital data
- Ease of storing the data
- Exponential improvement of computing power

It is estimated that the computing power needed to train AI is now rising much faster than ever before. The computing power of systems used for man's first expedition to moon is at least 4 times less powerful than a current smart phone. As the industries embark up on the journey to make Artificial Intelligence an integral part of their operations, decision making and marketing, Government will be playing a pivotal role. Governments are responsible for providing a conducive ecosystem for research and innovation, companies, startups, training organizations, regulatory bodies for a technology like Artificial Intelligence to prosper.

Vision: Establish Jammu & Kashmir as a leader in Artificial Intelligence and foster social innovation.

The Government of Jammu & Kashmir is committed to adopting emerging technologies and it recognizes the central role that Artificial Intelligence plays in building an enabling environment for emerging technologies. Jammu & Kashmir has shown a phenomenal growth in IT services in last few years. J&K has been ranked number one amongst all the Union Territories in the NeSDA ranking of DARPG.

Aligning with the vision to be a front runner in emerging technologies, the Government of Jammu & Kashmir in collaboration with all the stakeholders like educational institutions, researchers, government departments, startups and other organizations will ideate initiatives that will catalyze the adoption of Artificial Intelligence in Jammu & Kashmir.

AI Framework

In an effort to position Jammu & Kashmir to achieve a prominent position in use of AI, J&K Government proposes the following framework:

Key Pillars

1. **Data Exchange Platform and HPAIC**
2. **Skilling and Education**
3. **Governance, Ethics and Privacy**
4. **Research and Innovation**
5. **Security in AI**

1. Data Exchange Platform and HPAIC

- **UT's Open Data Exchange Platform:** Jammu & Kashmir shall formulate its Open Data Policy followed by the development of Jammu & Kashmir's Open Data Portal to host various datasets. Collaboration across departments and research organizations is important to increase the quality and volume of data that can be used to train Artificial Intelligence algorithms. After building the core data sets from government and implementing the data provider certifications, a Data Exchange Platform will be operated by the government where all the AI partners can upload relevant and useful datasets. An Open Data Exchange Platform will increase the cross collaboration across various stakeholders and will foster innovation in the arena of Artificial Intelligence. For ease of use, data visualization tools and data narratives will be enabled for this data. APIs will also be developed to provide access to static and real time data.

- **Creating Public Sector Datasets:** Data availability is the primary prerequisite for Artificial Intelligence. Specific data sets owned by

various government departments would be one of the most invaluable datasets for all the stakeholders. Government of Jammu & Kashmir will collaborate with educational and research institutes to identify such relevant data sets and will provide them in the state's open data platform. Government aims to ensure that the datasets of the identified focus areas are created and are available for public use in due course.

- **Collaboration with Corporates to Create Datasets:** The AI of today is heavily dependent on the collection, usage and processing of data. In the process of collecting useful datasets, the government will collaborate with research institutions for collecting data sets that can be shared with a wider pool of innovators.

- **Data Provider Certifications:** Data plays a vital role in developing AI services. But it is equally important to ensure that the datasets are safe, ethical and of high-quality. Hence, the State will initiate a Certification program for the data providers (Government, Research institutions and Industry) which focuses on the theme of ethics for shared data and would be as per the Data Privacy Law that is to be enacted by the Government of India.

- **Establishing a High-Performance AI Computing Facility:** Computers with accelerated hardware are capable of increasing the speed of the system that governs Artificial Intelligence. With the continuous increase in the volume of data, the requirement for High-Performance AI Computing facilities is constantly increasing. Access to High-Performance AI Computing (HPAIC) infrastructure is an important prerequisite for AI.

    IT Department to take up with IIT J&K, CDAC and other institutes, to offer High-Performance AI Computing (HPAIC) infrastructure as a shared facility to boost local AI-innovation capacities of academia, SMEs, startups and for social impact projects in Jammu & Kashmir.

2. **Skilling and Education**

Special programs need to be ideated and initiatives planned to build the AI oriented talent pool in Jammu & Kashmir.

- **AI-focused up skilling**: Data labelling, annotation, preparation, structuring and cleansing tasks account for more than 80% of the time involved in most AI and machine-learning projects. Government of Jammu & Kashmir will train BPOs and other similar workforce for data labelling roles to capture this opportunity.

- **AI Startup Internship Program:** UT will partner with incubators/accelerators to offer Jammu & Kashmir's college students the opportunities to work with AI startups, and receive college credits on successful completion of internship. The program would culminate with a Hackathon-to foster innovation, applied learning and peer learning.

- **AI Talent Alignment:** AI focused curriculum and faculty development programs would be developed based on inputs given by AI product companies, to bridge the skill-gap in the job market. These courses would be delivered across the UT in partnership with skilling partners.

- **Foundation of AI for All:** A set of courses which can be offered for free would be posted on online platforms of UT. The UT would organize webinars across Jammu & Kashmir universities, featuring pioneers of AI.

3.   **<u>Governance, Ethics and Privacy</u>**

Availability and access to accurate data is the cornerstone for any Artificial Intelligence related research and Artificial Intelligence becoming an integral component of day to day life, we must ensure that data which is used to run all the AI algorithms is trustworthy, fair and ethical.

Protecting the privacy of citizens of Jammu & Kashmir is of utmost importance to the government of Jammu & Kashmir. Government envisions taking all the necessary steps to ensure highest level of transparency.

- **Artificial Intelligence Ethics Committee:** The government shall ensure that artificial intelligence and machine learning algorithms are as ethical as they are intelligent. A Working Committee will be established to identify the key AI ethical concerns - Accountability, Bias, Transparency, Privacy, Security and Safety-and develop sector specific guidelines for AI use cases.

The Committee will be led by academicians from top institutes and consist of representatives from government, industry and research bodies etc.

The Working Committee would prepare and release a set of advisory guidelines, codes of practice, governance frameworks and will recommend various mechanisms to operationalize the recommendations. This would ensure ethical usage of data and bias-free decision-making algorithms to safeguard the privacy of citizens. Companies operating using the data published by government or affiliated authorities will be required to share a compliance report detailing the ethical and appropriate usage of data.

- **Guidelines for ethical usage of data :** The UT will be developing guidelines for data integrity and retention policies. Moreover, data security measures applicable to the service including how data is collected using the service will be securely stored and accessed. The UT government will be defining its data governance guidelines, in alignment with the government policies.

- **Government AI Procurement Guidelines:** In consultation with the AI Ethics Working Committee, the government will adopt recommended AI procurement guidelines. These may include encouraging the use of explainable AI to ensure that AI decision-making (i.e. the decisions and/or insights generated by AI) is as transparent as possible. The government may also explore mechanisms to enable interpretability of the algorithms internally and externally as a means of establishing accountability and contestability.

- **Training the user government agencies:** Operational or service staff must have enough knowledge or training on the solution to understand how to use it. The training must include, but not be limited to: the capabilities and limitations of the AI service, procedures to interpret and act on the output of the service; and as applicable to the deployment context, understand where human review is required for decisions that produce legal effects concerning individuals.

- **AI innovation domains:** The UT will accelerate AI Innovation efforts in domains like agriculture and allied sectors, education and skill development, industry, health care, rural and urban development, power development, law

enforcement, mobility and improving citizen's centric delivery of services.

4.   <u>Research and Innovation</u>

- **Academic Collaboration:**The UT will enter into partnerships with reputed universities/research centers to facilitate cross learning - via exchange programs for faculty and research students. Government of Jammu & Kashmir will also rope in premier educational institutions in the state for the same.

- **Patenting Guidelines for AI – based Innovations:**It is necessary to support the startups/SMEs/innovators which come out with new Intellectual Property. Many of the innovators don't protect their own intellectual property because of lack of awareness and process expertise. The government will engage experts from techno-legal domain to educate innovators about the importance and procedure of IPR filing.

- **Government-priority Applied Research:** Government may offer research grants to academicians working in applied AI for focus areas of the UT.

5.   <u>Security in AI</u>

The importance of data security in AI systems is becoming increasingly important. In Government, data security is a major concern on account of substantial amount of sensitive information being handled. AI, specifically generative AI relies heavily on data for training and decision-making, making it vulnerable to potential security risks.

Some major compelling reasons underlying the critical need for data security in AI systems are data privacy, data tampering, deliberate attacks by insiders, risks associated with mass adoption, AI-driven attacks etc.

The UT of J&K will put in place regulations and compliances that shape data security in AI systems viz. data protection, data sovereignty & localization, ethical AI use, auditing, accountability and cyber security standards.

The UT will ensure adherence to principles for ensuring data security in AI systems like encryption, data loss prevention (DLP), data classification, tokenization, data masking and data-level access control in

accordance with national standards and guidelines issued by MeitY, Government of India.

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