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The Evolving Landscape of AI: Meaning, Perspective, Liability and Challenges in Indian Context

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Artificial Intelligence (AI) has been a hot topic in recent years, especially after the natural language processing generative AI has been introduced in recent years. One thing we are sure of is this could be the ground-breaking invention of the 21st century and it would be not an exaggeration to say that AI has the potential to change our perception of the world as we know it. Technology despite being in its early stage has brought significant changes in technology. With its advancement, our dependence on it is inevitably going to increase and there will be a point where various tasks where human intervention is necessary today will be fully automated. AI will handle operations from start to end without any human intervention, naturally, if by any chance a loss to a person or property occurs due to such an independent automated work, it will be crucial to affix the 'Liability'. The article delves into the concept of liability, its evolving landscape, its challenges, available tools, the policy of the Indian government and potential solutions to address the question of 'Liability'.

Keywords: *artificial intelligence, liability, accountability, government.*

INTRODUCTION

Artificial Intelligence is the new hot topic and a dream come true moment for tech fan boys. It is indeed a tool that can be termed as 'revolutionary', no one can deny the impact it has already

made on our lives. AI has already penetrated our lives in the form of natural language processing models such as ChatGPT, Google Bard, etc., however, it is not limited to Telas's Self Driving Car is said to be a game changer and Apple's new 'Vision Pro' has the potential to change the way we interact with the world. With advancement and sophistication in technology, we will become dependent on these systems more than ever. There will be a point that most of the system that requires human intervention to operate will be 'fully automated' meaning they will complete the assigned task without any human input whatsoever. AI being a human-generated system is not immune to errors and prejudices which may be inherited from the data on which it is trained. This leads to many ethical and legal questions one of which concept of 'Liability', traditionally for a loss of life or property, liability is ultimately affixed on some human entity. However, with the rise of these new technologies, the system that we have created to affix the liability may not be able to work as intended. This article delves into the inevitable challenges posed by the inclusion of Artificial Intelligence into our lives and discusses key concepts of the newly enacted Digital Personal Data Protection Act, 2023, we have also discussed the Policy and Objectives decided by the NITI Aayog and Central Government of India in this regard and. This article also sheds light on the technical aspects of the AI that it uses to arrive at the conclusion and the tools that may be used to analyze every step in the decision-making process to identify and eliminate prejudices and errors, if any. The article also discusses the importance of Explainable AI (XAI) tools and techniques to bring transparency to the decision-making process that ultimately shapes the outcome.

WHAT IS ARTIFICIAL INTELLIGENCE

In recent times we often come across the term 'AI' but what does it exactly mean? Artificial intelligence that is also abbreviated as 'AI', as the name suggests is a kind of intelligence that is artificial. It is a simulation or a technology that resembles the human intelligence processed by a machine or computer system to perform tasks, process information, or obtain results by human input. Besides this, it can also be used for obtaining complex results such as making critical decisions, speech recognition, image processing perception, and many more. Today AI is being used across different platforms around the globe. However, some research suggests that

extensive use of AI can have adverse effects on society, as we understand the power of AI, and with power comes responsibility, failing which may also cause loss to society. In today's time AI is considered a boon as well as a bane Besides being futuristic and promising, it is also feared that artificial intelligence will eat up many jobs and replace humans, creating unemployment which may cause big problems for a country like India. To tackle and address this dilemma it is important to understand it from the Indian perspective.

INDIAN PERSPECTIVE

Over the last few months, both the Centre as well as State Have been working on various policies and regulations regarding AI, recently our Union IT minister Mr. Ashwini Vaishnaw stated that there is a lack of regulations for artificial intelligence in India, he also added that government has already started making efforts to standardize AI and even promote the adaption of the best practices.[1] India being one of the largest economies, has the potential to transform into a big AI market in the near future, however, currently India has no codified law governing AI.

NITI Ayog: NITI Ayog, the government think tank for making policies, so far has come up with two strategies among which the first is 'responsible AI' in February 2021[2] and the second 'Operationalizing principle of responsible AI' in August 2021[3]. Presently these are two strategies or policies regarding AI coupled with some guidelines. The obligations on this subject are set out in the Information Technology Act, of 2000. The government of India has also set up committees under MoIT to analyze the issues with AI.

In 2020, NITI Aayog drafted documents based on launching an oversight body and enforcement of responsible AI principles which covered the following aspects:

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[1] Not planning any law to regulate AI growth in India: IT minister Ashwini Vaishnaw' *The Economic Times* (05 April 2023) <https://economictimes.indiatimes.com/tech/technology/not-considering-any-laws-to-regulate-ai-growth-in-india-it-minister-ashwini-vaishnaw/articleshow/99275493.cms?from=mdr> accessed 20 January 2024

[2] 'RESPONSIBLE AI #AIFORALL Approach Document for India Part 1 – Principles for Responsible AI' (*NITI Aayog*, February 2021) <https://www.niti.gov.in/sites/default/files/2021-02/Responsible-AI-22022021.pdf> accessed 20 January 2024

[3] 'RESPONSIBLE AI #AIFORALL Approach Document for India: Part 2 - Operationalizing Principles for Responsible AI' (*NITI Aayog*, August 2021) <https://www.niti.gov.in/sites/default/files/2021-08/Part2-Responsible-AI-12082021.pdf> accessed 20 January 2024

- Examining and implementing ethical AI concepts.
- Crystal clear design, structure, and process to set particular standards.
- The establishment of the technical and legal network.
- Educating and raising awareness about responsible AI.
- Development of novel methods and resources for a conscientious AI.
- Representation of India on a global standard.

Deciding the approach: The Government along with the aforementioned objectives, is working on other aspects as well. An in-detail approach of the government to tackle the issue is as follows: -

Conclusive Framework: NITI Aayog is focused on ethical dilemmas that exist with the use of AI. The NITI Aayog is determined to create a framework that will not hinder the fundamental, constitutional or human rights of any individual, meaning the rights of the developer of these systems as well as the future consumer of the system. Balance is necessary to be maintained before enacting any rules and regulations.

Privacy and Data: The Hon'ble Supreme Court has ruled that privacy is a fundamental right and shall not be violated by anyone. In the digital age data security is equivalent to border protection, the government has introduced the Personal Data Protection Bill in the parliament. Considering the AI, data is the soul of any machine learning model so it is crucial to build a framework that will ultimately lead to public trust in these systems—simultaneously, enacting stringent rules on sharing and using the data.

Collaborations: The AI system is so new and unique that no one has fully grasped the possibilities of the system. Hence it is crucial to collaborate with the leading agencies, scientists, and engineers who are working in the field to achieve the aforementioned goals.

Training and Skill Development: The Aayog is also focused on developing the skilled workforce within the country, to achieve this they are planning on creating structured courses for students, employees, businessmen, and even for the general masses.

These measures will eventually shape the codified law on AI. The aforementioned measures depict that the government is aware of the vast opportunities in the field along with the risk that comes with it and is working tirelessly to make India a leader in AI.

INDIA AND AI PRIVACY

With the recent technological advancement in India, it is evident that there is a rapid and ever-increasing growth in AI technology that continues to shape India, with such technological advancement the issue regarding privacy and protection of personal data is one of the main concerns of the government. Thus with the aim to safeguard and protect the data of the people Governments have initiated a step forward by enacting legislation like "The Digital Personal Data Protection Act 2023."[4] This act not only safeguards the right of individuals to protect their personal data collected in India but also regulates the personal processing of data outside India. Besides this act is an example of how the government has harmoniously balanced the data of the user and technological innovation by imposing necessary restrictions. Following are some highlights of the act:

Selective Processing of Data: The provisions of this act make it obligatory for the organization to gather only such amount of user data that is necessary for the motive determined by the organization. The organization should not collect more data than what is required for the purpose. Thus, the Organization accumulating access data that is not required may attract the punishment under the provisions of the act.[5]

Express Consent Requirement: The DPDP Act 2023 places significant attention on the ground that any company or organization must acquire people's express consent before collecting and using their data. Thus, any organization that has obtained consent fraudulently may be liable for a penalty. Therefore, the only source of data collection for an organization should be from the user who has consented to share their data with the organization.[6]

[4] Digital Personal Data Protection Act 2023
[5] Digital Personal Data Protection Act 2023, s 7
[6] Digital Personal Data Protection Act 2023, s 6

Direction on Data Storage: Provisions of this act mandate data localization, which means that data collected from the user, should be stored within the local limits of the country. The main objective of data localization is not only to have better jurisdiction and protection over data but also to restrict the circulation of the data beyond the state. Such direction enables the state to provide better security over the personal data of the citizens.[7]

Establishment of Board: This act establishes an adjudication body under sec (17) of the act to be known as the "*Data Protection Board of India*". The main objective of the board is to enforce as well as adjudicate the data protection laws. The board will play a responsible role in ensuring regulatory compliance and taking action against organizations that breach data protection laws.[8]

Therefore, in light of the increasing concern regarding data security and privacy breaches legislation like The *Digital Personal Data Protection Act 2023 plays a key role this legislation is intended to protect data as well as the privacy of the user. This piece of legislation is enacted to answer all the growing distress about data security and privacy breaches. This particular enactment is not only intended to meet the issues presented by the fast digitization of personal information but also to establish a strong base for the proper handling of digital personal data, paving the way for a safe digital future.*

LIABILITY OF AI

Defining AI Liability: The word liability means assigning responsibility for any consequences thus, AI liability means the legal accountability and responsibility for the actions, decisions, and consequences caused by AI systems. Traditional legal responsibility frameworks were more focused on human actors, but pursuant to recent technological advancements in AI systems pose a variety of challenges. AI systems, with the help of complicated algorithms, machine learning, and with given prompt can independently examine data, make decisions, and take actions, without any human intervention. Such self-determined actions of AI give rise to several questions about charging blame and determining liability in case of AI-associated harm. This is one of the main questions concerning AI machines.

[7] Digital Personal Data Protection Act 2023, s 16
[8] Digital Personal Data Protection Act 2023, s 18

CHALLENGES IN AI LIABILITY

Absence of Adequate Legal Frameworks: Currently very few legal frameworks cope with the issue of AI liability. The recent technological development in the field of AI has surpassed the development of legal frameworks to address responsibility-associated issues. Existing frameworks may not satisfactorily address the unique aspects of AI, leaving a legal gap when it comes to determining responsibility.

Decision-Making Processes: The decision-making process of an AI is based on given prompts, algorithms, and a large amount of database, it arrives at a decision after analyzing and learning from its database. As the decision-making process of AI systems is controlled by complex algorithms and given prompts, it becomes more difficult to assign liability or blame to a single human actor. The decision-making process often involves multiple programs, data providers, and system operators, making it challenging to ascertain responsibility.

Lack of Clarity: Many AI-based decisions are said to be less transparent because of the reason that AI systems fail to give a reason behind a particular action, making it challenging as well as difficult to understand the true reason behind their decisions. Such non-transparency may lead to a lack of trust. Transparency is extremely crucial to ascertain the error and increase the reliability. A lack of clarity and transparency ultimately deters the ability of AI-based systems to identify the cause of errors or harmful outcomes.

Regulatory Challenges: AI systems can inherit biases from the data they are trained on, leading to discriminatory outcomes. Determining liability in cases of biased decisions raises complex ethical questions, as the responsibility may extend beyond the immediate developers to include data providers and other stakeholders.

AI AND ITS CONSTRAINTS

What needs to be looked for?

Update legal system: The government or any specific bodies appointed by the government on their behalf shall strive to develop a legal system that will talk about the liabilities in case any

loss takes place due to the exclusive use of AI. The lawmakers can consider technical aspects of the AI that deal with the data processing and/or sending outputs in the form of a command.

Focus on Transparency: As the system is quite new as it can operate without human intervention from start to end, it becomes crucial to know the process via which it arrives at a specific conclusion to eliminate any bias or prejudice, if any. The explainable techniques or XAI can be used to understand the systematic decision-making process employed by the AI on its own.

Ethical Guidelines and Standards: Robust ethical rules and guidelines should be followed during the creation and implementation of AI systems. In order to ensure responsible AI activities, these principles should cover bias mitigation, fairness, and accountability throughout the AI lifespan.

Ethics and Morals: Although there is indeed no certain definition of ethics and morals and the same may vary with the person, culture, country, etc. some universally accepted practices are said to be ethical and moral. The UN charter is an example of the same.

Inclusion in the Law-making Process: The AI system is very new even the experts in the field are yet to asses the full potential and depts of the same, so it would be impractical for government officials to frame the rules and regulations without taking the help of the persons who can be termed as experts in the field and individuals who have prior experience in ethical training or similar backgrounds. Even the public opinion shall be considered before enacting any such law or regulation.

The AI system has a deep 'neural network' to process the data and arrive at a conclusion. Generally, it is an arduous task for humans to sit and process all the data and understand the process that was adopted in each decision that was taken over the course. Hence it is advised that the Explainable AI technique (XAI) should be employed to make the human analyzing the data, comprehend the process with ease. There are several models of these XAI techniques that can be deployed, following are the tools and techniques which can be used to process and analyze the data.

COMMONLY USED XAI TECHNIQUES

Rule-based System: This is a human-readable format that uses logical functions, and statements throughout the decision-making process enabling the interpreter, to analyze the data efficiently and quickly. The said system is used in conditions where there a very specific criteria or a condition that need to be followed.

Feature Importance Method: This method works by identifying the step that shaped the outcome the most. Generally, the process where there are too many variables can be analyzed with this method. As the said method identifies or highlights the steps in the decision process that shaped the result, it can minimize the time to crunch the data and can eliminate any error in the system.

Local Interpretable Model-Agnostic Explanations (LIME): A technique that can be applied to any machine-learning model that uses human-readable formats such as texts, images, etc. Therefore, when an AI system's machine learning model reaches a conclusion or gives an outcome, the said technique can explain in detail why a particular AI system gave a particular output on a particular data. It can help the developer of the AI system modify the parameters or the data set accordingly. Furthermore, if a pattern is identified, it can eliminate the element of apparent randomness and vagueness of the decision-making process.

Partial Dependence Plots (PDP): It provides a graphical representation of the data acquired from a feature of the system and the predicted outcome of the system. It provides a visual simulation of how changing the values of any specific feature might affect the outcome. In addition, it can show the effect of the other variables in the system.

SHAP (Shapley Additive explanations) Technique: The technique is based on 'Cooperative game theory'. It considers the values of each feature that might be used in the decision process, and the said technique's idea of the role of each feature in the decision-making process, so that the modification, if any can be done accordingly.

Decision Trees and Rule Extraction Process: As the name suggests it uses a series of hierarchical decisions to interpret the decision-making process. It can help to reach the prediction by using a logic series.

These techniques, and others like them, aim to bridge the gap between complex AI models and human understanding. By providing insights and explanations into AI systems' decision-making, XAI techniques enable users, developers, and stakeholders to trust, validate, and interpret the outcomes of AI systems, ensuring transparency, fairness, and accountability.

CONCLUSION

Currently, AI is in its early days and as the technology becomes sophisticated and advanced, we will rely on it more than ever. There will be a point where many things will be completely 'Automated' and will have no human intervention at any point. There are a few examples of the same, Amazon's new grocery store where no employee is working in the store or self-check-outs in malls, etc. Shortly, we will see many fully automated places where no humans will be involved. This opens various questions ranging from ethics to technology, economic to legal, and eventually, the question regarding Liability has to be asked. In the traditional system, there is a definite way to fix the liability, however, the traditional seems to be lacking in this proposed inevitable change. Hence, we discussed the current tools and techniques to understand the decision-making process better and to eliminate the prejudices that may come. We also discussed the Government of India's policy and efforts of NITI Aayog to address the Issue.