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“SAFEGUARDING JUSTICE IN ALGORITHMIC ERA: ADDRESSING BIAS AND PROMOTING FAIRNESS IN AI SYSTEMS.”

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ABSTRACT

Artificial Intelligence is often depicted as unbiased, but the truth is that every AI system reflects the biases in the data and the societies it gets the data from. These technologies reproduce the historical inequalities that have existed along the axes of race, gender, class, ability, and geography over time - and sometimes, they even increase these inequalities. The current work on AI fairness is mostly focused on providing technical solutions such as fairness audits or statistical adjustments; however, the injustices deeply rooted in the bigger political and social structures cannot be solved by these solutions alone. Fairness in AI is essentially a problem of data, which most of the time reflects discriminatory histories. The use of black-box models for credit scoring, welfare, immigration, or education, which are not transparent, create difficulties in understanding and at the same time, they deprive those affected of the opportunity to challenge harmful decisions. Technical fairness concepts like statistical parity or equalized odds are very narrow and sometimes even conflicting. Firstly, the chapter suggests that equitable AI futures could be constructed through implementation of participatory design, among other things, like inclusion in data practices, rights to transparency and challenge that can be legally enforced. Secondly, fairness needs to be a part of a larger social justice plan so that it can ensure the use of AI for the purposes of equality, dignity, and human flourishing.

KEYWORDS: Justice, Algorithmic Era, Fairness, Bias, Ethics.

Introduction

Justice administration has been based on human logic, judicial discretion, and cardinal constitutional principles such as fairness, equality, and due process. Courts and other institutions of governance have been using interpretative judgment, contextual reasoning, and accountability as their tools in the justice administration which not only is efficient but also fair. The use of AI in governance, policing, adjudicatory support systems, and public decision-making, however, has changed this age-old system considerably. Presently, AI-powered tools are checked out in predictive policing, facial recognition, bail and sentencing risk assessments, recruitment, welfare distribution, surveillance, and even judicial research and case management. Although these inventions confer on the law an image of being efficient, consistent, and speedy, at the same time they breed big legal and constitutional concerns pertaining to bias, opacity, data protection, and accountability.

Artificial Intelligence systems rely heavily on data. In the AI era, personal data is considered the source from which the products and the main factors determining automated results come. This change puts the data protection question at the centre of the whole issue since decisions which were previously in the hands of humans are now in the hands of machines. Protection of data, therefore, is not just an issue of privacy in the narrow sense but rather, it is the broader protection of human dignity, autonomy, and informational self-determination that is involved. In India, the acknowledgement of privacy is a fundamental right under the Constitution¹ has given data protection the status of a constitutional obligation. Nevertheless, the fast-paced introduction of AI technologies has revealed numerous loopholes in the legal frameworks and policy models vis-à-vis the tech realities.

One of the main issues of sever AI systems is the bias that permeates their algorithms. Algorithmic bias refers to systematic and unfair discrimination produced by AI systems due to biased datasets, flawed assumptions, or design choices that reflect historical and social inequalities. Since AI systems learn from existing data, they may replicate or amplify patterns of discrimination based on caste, gender, religion, socio-economic status, or geographic location. When such biased systems are used in law enforcement, welfare allocation, or judicial support, they pose a direct threat to the constitutional guarantee of equality before law². Unlike

¹ Constitution of India, art. 21

² Constitution of India, art. 14

human bias, algorithmic bias often operates invisibly, making discrimination harder to detect and challenge. Transparency in AI-driven decision-making is another closely related issue to bias. Transparency is the ability of people, courts, and regulators to ascertain how an AI technology uses data and arrives at its conclusion. A lot of AI systems are described as “black boxes” because even their creators cannot easily understand the logic of the decisions they arrived at. This opacity violates the principles of natural justice, especially, the right to be heard and the need for giving reasons. When there is no transparency, the affected parties have no real chances to oppose the unfavourable consequences which is why procedural safeguards become pointless. The accountability principle further complicates the issue of the legal regulation of AI. Accountability stands for the attribution of legal responsibility for decisions and situations brought about by AI-driven data processing. In automated systems, the onus is frequently spread between the developers, those managing the data, private companies, and state authorities, hence, the creation of the loopholes for enforcement. Without clearly defined accountability structures, people who suffer from AI decisions that are damaging or discriminatory have no effective remedies, which thus results in the weakening of the law. India a democracy where justice is both procedural and substantive, the unthinking use of AI entails the risk of constitutional governance being seriously endangered. Employing AI should not be judged solely based on its efficiency or technological progress but rather its alignment with constitutional values. This article attempts to uncover the issues lying at the intersection of AI, data protection, algorithmic bias, transparency, and accountability from an Indian legal viewpoint. It looks at constitutional safeguards, judicial responses, and the emerging statutory frameworks to figure out whether the Indian legal system has the capacity to protect justice in the algorithmic era and to close the widening gap between law, policy, and technology.

This research employs both doctrinal and analytical methodologies³. The research relies on primary sources such as the Constitution of India, statutes, judicial decisions of the Supreme Court and various High Courts, and policy documents⁴. Secondary sources include scholarly articles, reports, and committee recommendations relating to AI governance and algorithmic accountability. This paper evaluates the principles of law rather than testing AI systems empirically. The academic discussion about AI and law has primarily been concerned about the risk of 'technology determinism' in legal systems. Authors maintain that while algorithmic

³ C.R. Kothari, *Research Methodology: Methods and Techniques* (2nd edn., New Age International 2004)

⁴ M.P. Jain, *Indian Constitutional Law* (8th edn., LexisNexis 2018).

decision-making is more effective, it is also less transparent and less easy to explain, which are very important for the law to be legitimate. One of the main concerns about "black box algorithms"⁵ is that people who are affected by them cannot understand or challenge the automated decisions. The Indian legal academia is progressively concentrating on AI-related issues of privacy, equality, and due process after the Supreme Court recognized privacy as a fundamental right. NITI Aayog reports endorse the concept of "responsible AI"⁶ but at the same time, they recognize the lack of binding regulatory measures for safety. The literature talks about a regulatory gap that exists between AI deployment and mechanisms of constitutional accountability. The main objectives of this paper are -

1. Understanding the characteristics and the origin of bias in AI systems in terms of algorithms.
2. To study whether the decision-making with the use of AI acknowledge the principles of natural justice.
3. To survey the sufficiency of the present Indian legislative frameworks in dealing with AI systems.
4. To propose legal and institutional measures that would contribute to the emergence of fair and accountable AI systems⁷.

Understanding AI and Algorithmic Bias

The conceptual basis for Artificial Intelligence and algorithmic bias by examining both dictionary definitions of AI—AI includes algorithms that can perform tasks which, in the past, required human intelligence⁸—as well as how these algorithms are increasingly used to impact the outcomes of government and criminal justice sectors through the use of large amounts of data to (1) support or (2) automate⁹. Algorithmic Bias refers to when an algorithm makes quality (unfair) outcomes¹⁰, and is particularly damaging to specific groups—the groups who have historically been disadvantaged¹¹. Examples of these groups include women¹², caste members, religious minorities, lower-income people, and people from specific geographic

⁵ Surden, Harry, "Machine Learning and Law", (2014) 89 *Washington Law Review* 87.

⁶ NITI Aayog, *Responsible AI for All* (2021).

⁷ Digital Personal Data Protection Act, 2023.

⁸ Stuart Russell & Peter Norvig, *Artificial Intelligence: A Modern Approach* (Pearson Education, 4th edn., 2021).

⁹ OECD, *Artificial Intelligence in Society* (OECD Publishing, 2019).

¹⁰ Solon Barocas & Andrew D. Selbst, "Big Data's Disparate Impact" (2016) 104 *California Law Review* 671.

¹¹ Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (St. Martin's Press, 2018).

¹² Reuben Binns, "Fairness in Machine Learning: Lessons from Political Philosophy" (2018) 81 *Proceedings of Machine Learning Research*

locations¹³. AI learns from the data from which it was created; therefore, an algorithm can be expected to learn from past biases¹⁴. One example of the harm that an algorithm can cause is through the use of facial recognition technology (FRT)¹⁵ by law enforcement agencies in India. FRT has received a lot of criticism because many believe that it will lead to wrongful identification of innocent people, especially those from marginalized communities. Because such outcomes can lead to a loss of the right to equality as guaranteed by the Constitution, some have argued that FRT represents an example of bias within the legal system. As per the Supreme Court ruling¹⁶ regarding the use of arbitrariness in determining equality, the Court held that arbitrariness is opposed to equality and that Article 14 applies not only to formal classifications but also extends to substantive fairness. Furthermore, algorithmic decisions without the consideration of social context and human judgement are likely to be arbitrary and unconstitutional¹⁷.

Constitution and AI Governance

This chapter is analysis how AI is affected by the provisions of our Constitution, particularly Articles 14 and 21.¹⁸ All people be treated equally before the law and prohibits arbitrary state action¹⁹. This includes the use of technology as an intermediary to arrive at decisions about people's rights and freedoms; therefore, AI must also be authorized to make those types of decisions, such as predictive policing, surveillance, and welfare administration²⁰, is fair and reasonable. Article 21 states that the courts have taken a broad interpretation of due process. The Supreme Court has mandated that all procedures that affect a person's life or liberty must be just, fair, and reasonable. Procedural fairness also entails adherence to the principles of natural justice²¹, one element of which is the requirement of a fair hearing (Audi Alteram Partem). A system of AI that is designed as a "black box" violates this principle by preventing a person from understanding the reason for an adverse determination, contesting that determination, or obtaining an explanation of why that decision was made²². The reasoned

¹³ Sandra Wachter, Brent Mittelstadt & Chris Russell, "Discrimination in the Age of Algorithms" (2021) 10 *Modern Law Review* 1.

¹⁴ Internet Freedom Foundation, *Project Panoptic: A Mapping of India's Surveillance Infrastructure* (2022).

¹⁵ Amnesty International, *Ban the Scan: Facial Recognition Technology and the Right to Privacy* (2021).

¹⁶ *E.P. Royappa v. State of Tamil Nadu*, (1974) 4 SCC 3.

¹⁷ *Maneka Gandhi v. Union of India*, (1978) 1 SCC 248.

¹⁸ Constitution of India, art. 14

¹⁹ *Shayara Bano v. Union of India*, (2017) 9 SCC 1

²⁰ NITI Aayog, *National Strategy for Artificial Intelligence: #AIforAll* (2018)

²¹ *A.K. Kraipak v. Union of India*, (1969) 2 SCC 262

²² *Mohinder Singh Gill v. Chief Election Commissioner*, (1978) 1 SCC 405.

decisions are fundamental to natural justice²³.

AI, Privacy and Surveillance

The Supreme Court of India has determined that privacy is a fundamental right under Article 21 that is directly associated with human dignity and personal autonomy²⁴. Thus, any infringement upon an individual's privacy must also meet the principles of "legality", "necessity", and "proportionality". There is no question that the new AI surveillance mechanisms such as facial recognition and predictive monitoring present significant challenges to peoples' informational privacy and autonomy, especially in the absence of sufficient accountability or other protections. While the DPDP ACT of 2023 is a step forward in terms of governing the use of personal data, and provides some degree of protection for the use of personal data, it does not address issues such as algorithmic transparency²⁵, automation in the decision process, or profiling as a result of the use of those algorithms. In terms of assessing the proportionality of selecting AI surveillance methods as being reasonable, the guidance²⁶ is relevant, as it provides a constitutional measure for assessing whether the boundaries for establishing acceptable limits for the method of obtaining data, or the manner of obtaining that data (e.g., by means of AI), exceeded those constitutional constraints.

Judicial Use of AI and Question of Fairness

In this chapter, we will explore how Artificial Intelligence (AI) is being used by the judiciary – specifically around transcription, legal research, and case management. While there is tremendous value in using AI to improve the efficiency of judicial processes, there are serious concerns about how and when such technology will have an impact on judicial outcomes and/or how judges reason²⁷. The very foundation of a court's authority to make decisions is premised on its ability to be transparent and provide a reasoned basis for its decision making²⁸. The Apex Court reaffirmed this point by stating that "Justice must not only be done but must be seen to be done, with reasons provided²⁹". If judges become too dependent on AI-generated outputs that cannot be understood by the general public, they run the risk of losing their ability to

²³ *Kranti Associates Pvt. Ltd. v. Masood Ahmed Khan*, (2010) 9 SCC 496.

²⁴ *Justice K.S. Puttaswamy (Retd.) v. Union of India*, (2017) 10 SCC 1

²⁵ Internet Freedom Foundation, *Project Panoptic: Mapping India's Surveillance Infrastructure* (2022).

²⁶ *Modern Dental College and Research Centre v. State of Madhya Pradesh*, (2016) 7 SCC 353.

²⁷ Supreme Court of India, *Artificial Intelligence Committee Report* (2021).

²⁸ Vidhi Centre for Legal Policy, *Use of Artificial Intelligence in the Indian Judiciary* (2020).

²⁹ *State of Punjab v. Jagdev Singh Talwandi*, (1984) 1 SCC 596

provide an account of their decisions and eroding public confidence in the judiciary³⁰. A careful approach adopted by the judiciary reflects the importance ascribed to "constitutional morality" in that AI should be viewed strictly as a supportive tool and not as a replacement for the discretion exercised by judges³¹.

Regulatory Challenges and Legal Vacuum

The current situation with existing laws, such as the IT Act of 2000, is that they do not adequately protect against algorithmic bias, explainability's and allocating liability³². The constitutional tort doctrine³³ provides a means to seek redress when state action using artificial intelligence leads to constitutional damages. The current state of AI technology has made it extremely complicated to determine which party is responsible when there is an issue with the automation of a system³⁴, be it the developer, the deployer, or the state. It is imperative that there be some statutory requirements regarding algorithm audit, impact assessment and transparency for high-risk AI systems³⁵ affecting fundamental liberties.

Conclusion

The prior analysis illustrates that the considerable use of AI in governance, law enforcement, adjudicatory support, and judicial administration has the potential to revolutionize the system but also poses serious challenges to the constitution. In essence, AI-driven mechanisms may bring in efficiency, uniformity, and ease in administration; however, if these are merely left unregulated or uncritically adopted, there is a possibility that they may subvert the core constitutional values that constitute the Indian justice system. The article has been engaged in understanding these issues through the focal points of data protection, algorithmic bias, transparency, and accountability, all of which have been positioned within the precincts of Indian constitutional jurisprudence. The investigation points out that algorithmic bias should not be understood merely as a technical fault but rather a constitutional issue, in particular when AI systems perpetuate historical and structural discriminations. As such, bias injuriously interferes with the assurance of equality before law and damages the concept of justice.

³⁰ Frederick Schauer, *Thinking Like a Lawyer: A New Introduction to Legal Reasoning* (Harvard University Press, 2009).

³¹ *Government of NCT of Delhi v. Union of India*, (2018) 8 SCC 501

³² Justice B.N. Srikrishna Committee, *Report of the Committee of Experts on a Data Protection Framework for India* (2018).

³³ *Nilabati Behera v. State of Orissa*, (1993) 2 SCC 746.

³⁴ *Rudal Shah v. State of Bihar*, (1983) 4 SCC 141.

³⁵ European Commission, *Ethics Guidelines for Trustworthy AI* (2019).

Likewise, the lack of explanation of AI systems places on issue the principles of natural justice, as automated decisions without explainability close the right to be heard and the need for reasoned decision-making. In the absence of transparency, procedural safeguards are impotent, and the provision of genuine legal remedies becomes a mere façade. Moreover, this document emphasizes that accountability is the most considerable regulatory shortcoming when it comes to AI governance. The responsible parties' e.g., developers, data controllers, private entities, and the State, rollback of duties in a situation like this. Enforcement without clear addressing of the legal frameworks becomes harder due to these gaps. Even though some constitutional doctrines such as due process, proportionality, and constitutional tort may be considered as providing normative guidance, the implementation of these doctrines in cases of AI-driven decision-making remains speculative because there are no explicit statutory provisions. Furthermore, the analysis claims that the government of India through its legislative and policy expedients has already taken some initial steps towards data protection ; notwithstanding, the measures implemented are insufficient to fend off the risks specially posed by automated and algorithmic decision-making. There is still a demand for a thorough legal regime which not only requires algorithmic transparency, impact assessments, human oversight, but also provides binding accountability mechanisms, especially in the cases where AI is applied at a high-risk level and rights are impacted. In summary, the manuscript contends that keeping the scales of justice balanced when algorithms are in play is beyond mere technological breakthroughs but rather it calls for the conscious assimilation of constitutional principles during the stages of designing, deploying and regulating AI systems. The interaction between law, policy, and technology needs to be re-established if AI is to be used as a tool for the promotion of the rights of the marginalized sections rather than their further alienation. The question of whether or not AI will be considered legitimate in India's judicial system in the future depends on its capability to conform to the constitutional promise of justice, equity, and rule of law.

Suggestions

This research demonstrates that AI must be implemented through the lens of constitutional values as opposed to a purely efficiency-based approach. The constitution provides a fundamental framework within which to create laws governing the usage of AI, especially in relation to the State's use of AI in areas affecting citizens' fundamental rights. Future usages of AI, including algorithmic-based decision-making systems in policing, surveillance, welfare

administration, and judicial assistance, will need to have statutory criteria set forth under Articles 14 and 21 which prohibit arbitrary decisions.

Thus, the future regulatory frameworks should require Algorithmic Impact Assessments, Bias Audits, and Explainability Requirements for high-risk Artificial Intelligence systems. Automated environments must also provide users the ability to understand and challenge negative decisions made against them; if these environments do not provide these rights, then individuals will not have a remedy if their rights are violated and the principles of procedural fairness and natural justice will cease to exist. Therefore, there is a need for more academic study on how traditional constitutional protections can be altered to accommodate decision-making in an AI-based governance environment at both an empirical level and at a doctrinal level.

Accountability must remain the foundation of AI regulations. Diffused responsibility between various actors - developers, private industry, and public authorities - means that many people who are impacted by the use of AI will ultimately find themselves without any available recourse. An established liability structure must clearly delineate the responsibilities, with the primary liability resting on the State, when AI is used as a tool by the State for fulfilling public servicing functions. Furthermore, in a legal context, AI should only function as a supporting tool and should not eliminate the role of human discretion, reasoned decision making, or transparency in the judicial process. To ensure that justice is maintained in the age of AI, society must find a way to merge the moral balance of society established by the Constitution with the advances in technology that are represented by AI, so that AI continues to be employed as a method of increasing equality, dignity, and adherence to the rule of law rather than being used to undermine those principles.