

**DIGITAL DISCRIMINATION AND SOCIAL JUSTICE: A POLITICAL
SCIENCE STUDY OF BIAS IN AI AND ALGORITHMS****Dr. Sandeep Ashok Bhadane***Assistant Professor, Department of Political Science, S.S.V.P.S. Arts, Commerce and Science
College, Shindkheda.**Email: sanddeebhadane05@gmail.com***Abstract**

Digital discrimination refers to biased outcomes that arise from artificial intelligence (AI) and algorithmic decision-making systems. As governments, corporations, and institutions increasingly rely on automated tools, concerns over fairness, transparency, and social justice have intensified. AI systems trained on biased historical data can unintentionally reinforce inequality in areas such as hiring, policing, lending, and access to public services. Cases involving algorithmic bias at companies like Amazon and social media platforms operated by Meta demonstrate how digital tools can mirror societal prejudices. Political science examines these patterns to understand how algorithmic governance affects marginalized communities and democratic values. Addressing digital discrimination requires ethical standards, inclusive data, stronger regulatory frameworks, and transparent algorithmic auditing. Ultimately, balancing technological innovation with social justice is essential to ensure AI systems contribute to equitable and democratic societies.

Keywords: Digital Discrimination, Algorithmic Bias, Social Justice, Artificial Intelligence, Data Ethics, Algorithmic Governance, Inclusivity&Transparency Etc.

► *Corresponding Author: Dr. Sandeep Ashok Bhadane*

Introduction:

Artificial intelligence and algorithm-driven systems increasingly influence political, economic, and social decisionmaking. While these technologies promise efficiency and objectivity, they also risk reinforcing existing structural inequalities. Biased data, unclear decision processes, and lack of accountability can produce discriminatory outcomes in critical sectors like employment, policing, healthcare, and public administration. Political science plays a vital role in examining how such digital bias affects power relations, civil rights, and social justice. Understanding these impacts is necessary to promote ethical technology use in democratic societies.

1. Algorithmic Bias in Hiring Systems:

Algorithmic bias in hiring systems has become a major concern as organizations increasingly rely on artificial intelligence to automate recruitment. AI-based tools are designed to screen resumes, rank applicants, and predict candidate suitability based on past hiring data. These systems are often promoted as objective and efficient alternatives to human decision-making. However, a well-known case involving recruitment software tested by Amazon revealed how such tools can unintentionally reproduce discrimination.

The system was trained on historical resumes submitted over several years, during which technical roles were predominantly filled by men. Because machine learning models identify patterns in

existing data, the algorithm learned to associate male-dominated profiles with success. Consequently, its downgraded resumes that included indicators associated with women, such as references to women's colleges or female-focused organizations. The bias was not intentionally programmed but emerged from skewed historical data reflecting broader societal inequalities.

This example demonstrates that AI systems mirror the data they are trained on rather than eliminating bias. It highlights the necessity of diverse datasets, fairness testing, algorithmic transparency, and human oversight. Without these safeguards, automated hiring tools risk reinforcing gender inequality instead of promoting equal opportunity in the workplace.

2. Predictive Policing and Surveillance:

Predictive policing involves the use of artificial intelligence and advanced data analytics to anticipate potential criminal activity based on patterns found in historical crime data. In several cities across the United States, law enforcement agencies implemented algorithmic systems to identify so-called high-risk neighborhoods and allocate police resources more efficiently. These systems were promoted as objective tools capable of improving crime prevention and optimizing patrol strategies.

However, predictive models often relied on historical crime records that were themselves shaped by long-standing patterns of overpolicing in minority communities. Because these neighborhoods had higher recorded arrest rates, the algorithm interpreted them as higher-risk areas. As a result, the same communities were repeatedly flagged for increased surveillance and police presence. This created a feedback loop in which intensified policing generated more recorded incidents, further reinforcing the algorithm's predictions.

Such outcomes disproportionately affected marginalized groups and raised serious concerns about racial profiling, civil liberties, and due process rights. Critics argue that the lack of transparency and independent oversight makes it difficult for affected individuals to challenge algorithmic decisions. This controversy underscores the urgent need for bias audits, democratic accountability, and regulatory safeguards to ensure technology supports public safety without undermining social justice principles.

3. Social Media Algorithms and Inequality:

Social media platforms operated by Meta rely on sophisticated algorithms to curate content, prioritize posts, and maximize user engagement. These systems analyze user behaviors such as clicks, shares, comments, and viewing time to determine what content appears most prominently in news feeds. While designed to increase interaction and platform growth, engagement-driven algorithms often prioritize emotionally charged or controversial material because it generates stronger reactions.

Research has shown that such models can unintentionally amplify misinformation, hate speech, and polarizing narratives. In certain instances, coordinated misinformation campaigns have disproportionately targeted specific political, ethnic, or religious groups, spreading false claims and reinforcing harmful stereotypes. Algorithmic amplification may also intensify political polarization by repeatedly exposing users to extreme viewpoints, creating "echo chambers" where individuals encounter limited perspectives.

Minority communities are particularly vulnerable to online harassment and disinformation, which can undermine their sense of safety and discourage civic participation. Critics argue that limited transparency in content-ranking systems restricts public accountability and democratic oversight. Addressing these concerns requires stronger content moderation policies, greater algorithmic

transparency, independent audits, and ethical governance frameworks to ensure digital platforms promote equality, safety, and informed democratic discourse rather than deepening societal divisions.

4. Algorithmic Bias in Financial Services:

Algorithmic bias in financial services has become a critical issue as banks and fintech companies increasingly depend on artificial intelligence to assess creditworthiness and manage risk. AI-driven credit scoring systems analyze large datasets, including income history, repayment behavior, employment records, and geographic information, to determine loan approvals, interest rates, and credit limits. Although these systems are promoted as objective and data-driven, they often rely on historical financial data shaped by decades of discriminatory lending practices and structural inequality.

If minority communities historically had reduced access to banking services, lower average incomes, or limited credit histories due to systemic barriers, algorithms may interpret these patterns as indicators of higher financial risk. Consequently, applicants from marginalized groups may receive lower credit limits or experience higher rejection rates, even when their individual financial profiles are similar to those of other applicants. Additionally, the use of proxy variables such as ZIP codes or employment type can unintentionally replicate socioeconomic and racial disparities. These outcomes raise serious concerns about fairness, transparency, and equal economic opportunity. Addressing the problem requires rigorous bias testing, explainable AI models, regulatory oversight, and inclusive data practices. Ensuring accountability in financial algorithms is essential to prevent technology from reinforcing systemic discrimination and to promote equitable access to credit.

5. Healthcare Algorithms and Racial Disparities:

Healthcare algorithms are increasingly integrated into hospital systems to predict patient risk levels, allocate medical resources, and support clinical decision-making. These tools are designed to enhance efficiency and improve patient outcomes by analyzing large volumes of health data. However, research has shown that some widely used medical risk assessment algorithms produced racially biased results. In particular, certain systems assigned lower health risk scores to Black patients compared to white patients who had similar medical conditions and needs.

The bias emerged because the algorithm used healthcare expenditure as a proxy for illness severity. Historically, due to structural inequality and limited access to quality healthcare, Black patients have often incurred lower medical costs not because they were healthier, but because they had reduced access to services. As a result, the model underestimated their true health risks and limited their eligibility for specialized care programs and additional medical support.

Although the bias was not intentional, it reflected flawed assumptions embedded in historical data. This case demonstrates how systemic inequalities can become encoded into digital health tools. Addressing such disparities requires inclusive datasets, transparent evaluation methods, ethical oversight, regulatory safeguards, and continuous monitoring to ensure fair and equitable healthcare delivery for all populations.

6. Education Technology and Unequal Outcomes:

During the COVID-19 pandemic in 2020, the cancellation of in-person examinations in the United Kingdom forced authorities to adopt automated grading systems to determine students' final exam results. The algorithm, implemented under the supervision of Equal, aimed to standardize grades

by combining teacher assessments with statistical models based on a school's historical academic performance. Although intended to maintain fairness and prevent grade inflation, the system generated highly controversial outcomes.

The model placed significant emphasis on past school-level results, which disproportionately affected students from low-income backgrounds and underperforming schools. Even high-achieving individuals in these institutions were downgraded because the algorithm assumed their schools' previous performance predicted their likely results. In contrast, students from historically high-performing and often more affluent schools were more likely to retain or improve their grades. The backlash included public protests, political pressure, and widespread criticism of algorithmic decisionmaking in education. Ultimately, authorities reversed many of the algorithm-based grades. The incident demonstrated how reliance on historical institutional data can unintentionally reinforce existing inequalities. It highlighted the urgent need for transparency, accountability, and equity-centered design in educational technologies to ensure digital systems promote fairness rather than perpetuate social injustice.

7. Facial Recognition Systems:

Facial recognition systems are increasingly used in law enforcement, airport security, and private-sector surveillance to identify individuals through biometric analysis. However, research has shown that many of these systems demonstrate significantly higher error rates when identifying women and people of color. Studies evaluating tools developed by major technology firms, including systems reviewed by IBM, revealed that algorithms were often trained on datasets that lacked sufficient demographic diversity. As a result, the systems performed more accurately on lighter-skinned male faces while misidentifying darker-skinned individuals and women at disproportionately higher rates.

Such inaccuracies pose serious risks, particularly in criminal justice contexts. Misidentification can lead to wrongful arrests, increased surveillance, and violations of civil liberties. In democratic societies, these technological errors raise concerns about due process, discrimination, and accountability. The problem highlights how biased training data and insufficient testing standards can produce unequal outcomes. In response to these concerns, several companies have limited or suspended facial recognition services, and policymakers have called for stricter regulation. Ensuring fairness requires diverse datasets, independent audits, transparency, and strong legal safeguards to protect individuals from digital injustice.

Conclusion:

Digital discrimination has emerged as one of the most pressing challenges in the age of artificial intelligence and algorithmic governance. As AI systems increasingly influence public administration, law enforcement, healthcare, education, finance, and employment, their societal impact extends far beyond technical efficiency. While these technologies promise speed, scalability, and objectivity, they can unintentionally replicate and amplify historical inequalities when developed using biased datasets or opaque decision-making models.

From a political science perspective, algorithmic systems are not neutral tools; they operate within existing structures of power and inequality. Therefore, transparency, accountability, and ethical oversight are essential to ensure that technological innovation aligns with democratic values. Promoting social justice requires inclusive data collection, continuous algorithmic auditing, impact assessments, and strong regulatory frameworks that safeguard civil rights. Democratic oversight

mechanisms, including public consultation and independent review bodies, can further strengthen accountability.

Collaboration between governments, private corporations, technologists, and civil society is crucial to building fair and inclusive digital infrastructures. By addressing bias at technological, institutional, and policy levels, societies can harness the transformative potential of AI while minimizing discrimination. Responsible digital governance ultimately lays the foundation for equitable, trustworthy, and socially just technological futures.

References:

1. Gupta, Maansi and Bolia, Nomesh B., "Factors Affecting Efficient Discharge Of Judicial Functions: Insights from Indian Courts," *Socio-Economic Planning Sciences*, Vol. 91, 2024.
2. Kumar, Ashish and Kumar, Vikas, "AI in Mediation: Ethical Issues and Inclusivity Challenges in Access to Justice," *South India Journal of Social Sciences, Andhra Pradesh*, Vol. 23, No. 7, 2025.
3. Sagar, Dinesh Singh and Matolia, Manisha, "Digital Rights and Social Justice: Challenging Untouchability in the Digital Sphere," *Advances in Consumer Research*, Vol. 2, No. 5, 2025.
4. Bharati, Rahul Kailas, "Bias and Fairness in AI Algorithms: Legal Standards and Ethical Guidelines," *International Journal of Novel Research in Computer Science and Software Engineering, Maharashtra*, Vol. 12, Issue 2, 2025.
5. Choudhary, Tavishi, "Political Bias in Large Language Models: A Comparative Analysis of ChatGPT-4, Perplexity, Google Gemini, and Claude," *IEEE Access*, Vol. 13, 2025.
6. Kumar, Abhishek Benedict and Sanjaya, Karun, "AI and Social Justice: Democratizing Technology for Inclusive Growth," in *Ethical AI Solutions for Addressing Social Media Influence and Hate Speech* (Ed. Swati Chakraborty), IGI Global, 2025.
7. Bhattacharya, S., Gatobu, C.K., and Onuoha, R., *Bridging the Gender Digital Divide: Africa's Imperatives* (ORF Special Report), Observer Research Foundation, New Delhi, 2024.
8. Novelli, Claudio and Sandri, Giulia, "Digital Democracy in the Age of Artificial Intelligence," *arXiv* (Pre-print), 2024.
9. <https://icpp.ashoka.edu.in> (Banerjee, Subhashis, "Digitalisation, AI and Society," Isaac Centre for Public Policy, Ashoka University, Haryana, 2026. [Online].
10. <https://supremoamicus.org> (Nag, Manoj Kumar and Kumar, Upesh, "Digital Literacy in India: Achievements and Challenges," *Supremo Amicus* (Journal/Portal), Vol. 39, 2025. [Online].