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ALGORITHMIC JUSTICE: SAFEGUARDING WOMEN’S RIGHTS IN THE AGE OF ARTIFICIAL INTELLIGENCE

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Abstract

The rapid proliferation of artificial intelligence (AI) in contemporary society has ushered in a new era of opportunities and challenges, particularly concerning gender justice and the protection of women’s rights. As AI-driven decision-making becomes embedded in recruitment, healthcare, finance, and law enforcement, it often replicates—and sometimes intensifies—existing social biases due to uncritical reliance on historical data and opaque algorithms.

Algorithmic bias manifests when automated systems produce outcomes that unfairly disadvantage women, reflecting and amplifying pre-existing stereotypes in society. From hiring platforms that systematically downgrade female candidates based on biased input data, to facial recognition systems that misidentify women at higher rates, the consequences are pervasive and profound. Further compounding the issue, AI systems used in healthcare often underrepresent women’s data, increasing the risk of misdiagnoses and suboptimal treatment outcomes. Such failures highlight systemic exclusion and the pressing need for gender-responsive innovations in algorithmic design and deployment.

Despite constitutional guarantees and anti-discrimination statutes across various jurisdictions, most legal frameworks remain ill-equipped to address the nuanced and technical realities of algorithmically-driven bias. Many current laws do not demand transparency from AI systems, nor do they facilitate meaningful redress for affected women. The complexity of AI’s “black box” nature limits both detection and correction of bias and places undue burden on women seeking justice.

The article calls for a multifaceted legal and policy response. Key recommendations include mandating regular gender audits and independent reviews of all critical AI systems, integrating

transparency and explainability requirements into law, and explicitly amending anti-discrimination statutes to cover algorithmically-driven decisions. Additionally, redress mechanisms and capacity-building initiatives for judges, lawyers, and technologists must be developed to equip them in recognizing and rectifying AI-induced inequalities.

Introduction:

Artificial Intelligence (AI) is revolutionizing nearly every facet of contemporary society, from employment and healthcare to social interactions, governance, and justice. AI's transformative potential lies in its ability to automate decisions, analyze large datasets, and create predictive systems.¹ AI technologies proliferate, critical concerns about fairness, accountability and discrimination. It is observed that the AI intervenes the women's rights. There are biases embedded in algorithms and data that sets risk amplifying social inequalities. Algorithmic should be made justifiable and legal protection for women is imperative as we enter the AI Industry.

This article explores the intersection of AI and women's rights, focusing on the legal challenges posed by algorithmic decision-making and the necessary reforms to achieve genuine gender justice. It examines current issues, gaps in law and policy, case studies, global legal frameworks, and offers actionable recommendations for protecting women's rights in the digital future.

The Promise and Peril of Artificial Intelligence

AI serves as both a catalyst for progress and a possible propagator of discrimination.² While AI-driven solutions hold the promise of empowering women—through improved access to healthcare, justice, education, and economic opportunities—AI can also perpetuate entrenched gender biases due to the nature of its design, training data, and usage contexts.

- **Empowerment Potential:** AI assists in early detection of health issues unique to women, facilitates entrepreneurship via financial inclusive algorithms and also access to legal aid with chatbots and automated advice.

¹ Varkha K. Jewani, Prafulla E. Ajmire, Suhashini Awadhesh Chaurasia & Geeta N. Brijwani, *Artificial Intelligence: A Smart and Empowering Approach to Women's Safety*, in *Impact of AI on Advancing Women's Safety* 121-38 (IGI Global ed., Dec. 2023) (DOI:10.4018/979-8-3693-2679-4.ch008).

² Aída Ponce del Castillo (ed.), *Artificial Intelligence, Labour and Society* (Brussels: European Trade Union Institute [ETUI] aisbl, 2024), available at https://www.etui.org/sites/default/files/2024-03/Artificial%20intelligence%2C%20labour%20and%20society_2024.pdf.

- **Risks and Biases:** Automated systems employed in hiring, policing, and social media moderation have repeatedly been shown to encode sexist stereotypes, marginalizing women's voices and worsen the outcomes for the women who are seeking justice or opportunity.

This complexity underscores the importance of critically examining how legal frameworks respond to the dual role of AI in both advancing and threatening gender equality.

What is Algorithmic Bias? How Does It Impact Women?

Algorithmic bias occurs when AI systems make decisions that systematically disadvantage certain groups by reflecting historical prejudices that is present in training data and the assumptions of those developing the algorithms.³

Types of Algorithmic Bias Impacting Women

- **Selection Bias:** AI-trained on datasets that under represent women, especially the minorities. It can also distort outcomes like voice recognition in order to misinterpret the female voices.
- **Confirmation Bias:** Algorithms may emphasize and promote predictive analytics like recommending low salaried jobs to women based on historical employment patterns etc.
- **Exclusion Bias:** Omission of women's health data in medical algorithms leads to misdiagnoses and exclusion from advanced treatments.

Relation between women and AI:

Women are using AI and developing AI and it is empowering women. The recent studies address the empowerment of women in AI. There is a phenomenal increase in the number of publications on AI and gender bias between the year 2022 and 2024.⁴ There is a marked geographical disparity with regard to the research originating from the north globally and significant marginalization from the south globally. Prevalent case studies, research with few empirical and theoretical studies that specifically focus on empowerment, which was

³ Interview with Zinnia del Villar on AI Gender Bias and Creating Inclusive Technology, **UN Women** (Feb. 2025), <https://www.unwomen.org/en/news-stories/interview/2025/02/how-ai-reinforces-gender-bias-and-what-we-can-do-about-it>.

⁴Letizia Jaccheri, *AI for Empowering Women in AI* (presentation slides, SlideShare), accessed [Date you accessed], <https://www.slideshare.net/slideshow/AI-for-empowering-women-in-AI-presentation-letizia-pptx/281024369>

explored by diversity, bias and gender norms.

Research on AI and Gender Bias:

The dual role of AI can hamper and even support gender equality. The importance of the presence of variety and differences like race, gender, age, religion can be recognised and appreciated by developing teams to prevent bias. To be very precise AI bias has its origin from the data that is trained and take deliberate and dynamic steps to lessen the severity or impact of AI on gender bias.

Different strategies, techniques and procedures like workshop, games, study programs, robotic interaction are being introduced to focus on awareness and enable the people to better understand the bias in the society and thus help the women in building confidence.⁵ Various tools are also being designed to reduce the gender bias and lower the barriers that are technically affecting. Various frameworks have been designed to identify unbiased career recommendations for recruitment. In the language processing the algorithms that are used are processed for gender bias before they are used. All these help in reducing the gender bias and inclusion and empowerment of women.

Future work for the empowerment of women-

Workshops with women should be designed and to gather insights and design principles for empowerment in AI tools.

Real-Life Examples

- **Hiring Platforms:** Amazon had to scrap an AI recruitment tool after discovering it systematically downgraded resumes with indications of female gender (e.g., women's colleges, female sports teams), reflecting bias against women in tech roles.
- **Facial Recognition:** Studies reveal that facial recognition algorithms misidentify women—and particularly Black women—at far higher rates compared to men, with real consequences in surveillance and law enforcement.
- **Loan Approvals:** Credit scoring systems have been shown to offer less favorable rates and access to women due to historical disparities captured in financial datasets.

⁵ Ibid

Legal and Policy Frameworks: Present status

Globally, most legal systems have anti-discrimination laws and constitutional rights aimed at achieving gender equality. However, existing laws often fail to address the complexities of bias and injustice introduced by autonomous systems.

Current Legal Protections

- **Equality Before Law:** Constitutions (such as Article 14 in India) guarantee equality, but does not address algorithmic nuances.
- **Gender Rights Legislation:** Laws like India's Equal Remuneration Act, the US Civil Rights Act, and the UK's Equality Act are beginning to recognize discrimination in new forms, but the enforcement against AI-related bias is unclear.
- **Data Protection Laws:** GDPR (EU), CCPA (California), and India's Digital Personal Data Protection Act offer some protections, but gender-specific impacts of AI are rarely explicit⁶.

Limitations of AI globally:

- **No Explicit AI Regulation:** Most countries lack statutes specifically targeting AI decision-making and accountability for gender bias.
- **Opacity of Algorithms:** AI's "black box" nature means women harmed by biased outcomes cannot easily understand or challenge decisions.
- **Limited Redress:** Legal remedies for affected women are slow and costly, and tech platforms often evade responsibility through "algorithmic neutrality" defenses.

Case Studies: AI and Women's Rights in Action

Employment

- **Discriminatory Screening:** AI-powered resume scanners have significantly reduced shortlisting of the women in technical and financial sectors, even when the qualifications are same as men. This is often due to historical data showing men's predominance in those roles, where the algorithm treats it as a desirable pattern.

⁶ See Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 Apr. 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation), O.J. L 119, 4 May 2016; California Consumer Privacy Act of 2018, Cal. Civ. Code §§ 1798.100 et seq. (West 2024); Digital Personal Data Protection Act, 2023, Act No. 22 of 2023 (India) (enacted Aug. 11, 2023)

- **Legal Remedies:** While victims can appeal to anti-discrimination law, proving algorithmic bias but it is technically complex and often beyond the reach of individual applicants.

Healthcare

- **Diagnostic Misinterpretation:** AI systems that are trained basically and primarily on male health data can misdiagnose female patients, particularly for conditions like cardiovascular disease as the symptoms differ by gender.
- **Innovations in Policy:** Initiatives that incorporate both genders are mandatory. Sex-disaggregated data in health AI are gaining momentum, but few have been codified into law.

Online Harassment

- **Moderation of the Content:** AI tools have become very popular and are in use for complaint to police online, but they often misidentify women's self-advocacy messages as "hate speech" and sometimes even fail to act against gendered trolling and cyberstalking.
- **The gaps in legal field:** even though laws exist against cyber harassment, but they do not mandate algorithmic transparency or fairness in field of AI.

Advances and Prospects: International Responses

European Union

The EU has proposed and implemented guidelines for "ethical AI,"⁷ recommended by clarity and transparency. However, binding laws specifically addressing gender bias in AI are yet to be adopted.

United States

Several states (including New York and Illinois) have begun to regulate algorithmic bias in employment and facial recognition. Federal bills, like the Algorithmic Accountability Act, are under consideration, aiming to provide regular bias assessments.⁸

⁷ *Ethics Guidelines for Trustworthy Artificial Intelligence*, High-Level Expert Group on Artificial Intelligence (Apr. 8 2019), European Commission, available at <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>

⁸ See *Algorithmic Accountability Act of 2022*, S. 3572, 117th Cong. (2022), available at <https://www.congress.gov/bill/117th-congress/senate-bill/3572>; N.Y.C., N.Y., Local Law No. 144, § 1 (2021)

India

India is paving the way for general safeguards in collaboration with the Digital Personal Data Protection Act. The steps for ensuring gender justice in AI systems are yet to be formulated as statutory law.

Algorithmic Justice and Women's Rights

Legal and Regulatory

- Gender Audits in AI systems to be incorporated: Mandatory, regular, independent audits for all critical AI systems (employment, healthcare, credit, law enforcement) to detect and correct gender bias.
- Transparency Requirements: Laws should be implemented so that the persons who are responsible in AI development and its use should disclose how the decisions are made and how the affected individuals can challenge the outcomes.
- Unambiguous Statutes on Algorithmic Discrimination: Amendments shall be made to the existing anti-discrimination laws in order to protect the automated decisions that are made and thus clearly assign liability for bias.
- Establish Redressal or Grievance System: they should set up regulatory bodies and fast-track legal proceedings, complaints which require AI-based discrimination against women.

Data and Representation

- Guarantee Diverse Training Data: Legal standards must be laid down so that the data representatives, balanced datasets and those which include multiple interrelated information like gender, race, and other identities.
- Women Leadership Promotion in Tech: Policies should be laid down to incorporate and increase women's representation in the AI development teams, the governance boards, audits thus fostering gender-sensitive issues.

Education, Awareness, and Capacity Building

- Training must be given for Judges, Lawyers, and Technologists: All legal professionals

(regulating automated employment decision tools), available at https://wp.nyu.edu/compliance_enforcement/2024/03/11/state-governments-move-to-regulate-ai-in-2024/; Ill. H.B. 3773, 103d Gen. Assemb. (Ill. 2024), available at <https://www.natlawreview.com/article/employment-tip-month-october-2025>.

and AI developers should be informed and be aware regarding the tools for the detection and remedy for gender bias.

- Campaigns for Public Awareness: The women and the general public should be educated and be made conscious about their rights with respect to the decisions made in the algorithms that are used in AI programming.

A Path ahead towards Equality and Empowerment

AI is a tool and a system that encompasses both values and priorities. It safeguards women's rights in the domain of AI with respect to their demands, innovations, and their engagement and involvement with lawmakers, technologists and civil society. It should change its path from reactive remedies towards proactive policies representing gender equality throughout AI system design and deployment. Also to anticipate new challenges in technology such as deepfakes, biometric surveillance, and autonomous decision-making together with legislations on gender bias. The empowerment of women should not only be merely as a beneficiary but as active leaders, innovators, and designers of AI systems.

Conclusion

Algorithmic justice is fast becoming one of the defining issues of Industry in the digital age. Without deliberate effort and legal innovation, AI could entrench or increase historic inequalities faced by women; with adequate safeguards, it can become a tool for emancipation, opportunity, and equity.

This article has established the urgent need for explicit laws, rigorous policy interventions, and cross-disciplinary strategies to ensure that women's rights are protected, advanced, and championed at every stage of AI's evolution. In the field of AI we should try to shape a truly inclusive future, moving from traditional inequality toward meaningful empowerment for women in this rapidly changing scenario of the world.

Without dedicated statutes and regulatory oversight, the deployment of AI risks deepening gender inequities while evading traditional legal scrutiny.

Globally, some progress has emerged. The European Union has pushed for ethical guidelines and bias audits in AI systems, while select US states are beginning to regulate algorithmic discrimination in specific sectors like employment. However, these initiatives are nascent and

often fall short of mandating enforceable remedies to gender-based algorithmic harms. In India, laws such as the Digital Personal Data Protection Act provide general data safeguards but lack explicit measures to prevent or address gendered disparities in automated systems. Ensuring diversity in data collection and fostering women's leadership in the development, governance, and oversight of AI technologies are also pivotal steps toward building inclusive, fair systems.

Recently many tools are being used for women's safety and many tools are being designed and are being deployed which is a very sensitive matter to be looked in for with regard to women's safety. Virtual assistants and chat bots are being used to raise awareness about women's safety. These tools provide instant information on local help lines self defence techniques and legal rights in empowering women with knowledge at their fingertips. Women are learning and are tailored to address their grievances at work place and other underrepresented groups. AI has transformed the work places by its emerging technology and had outsized its impact on their job.

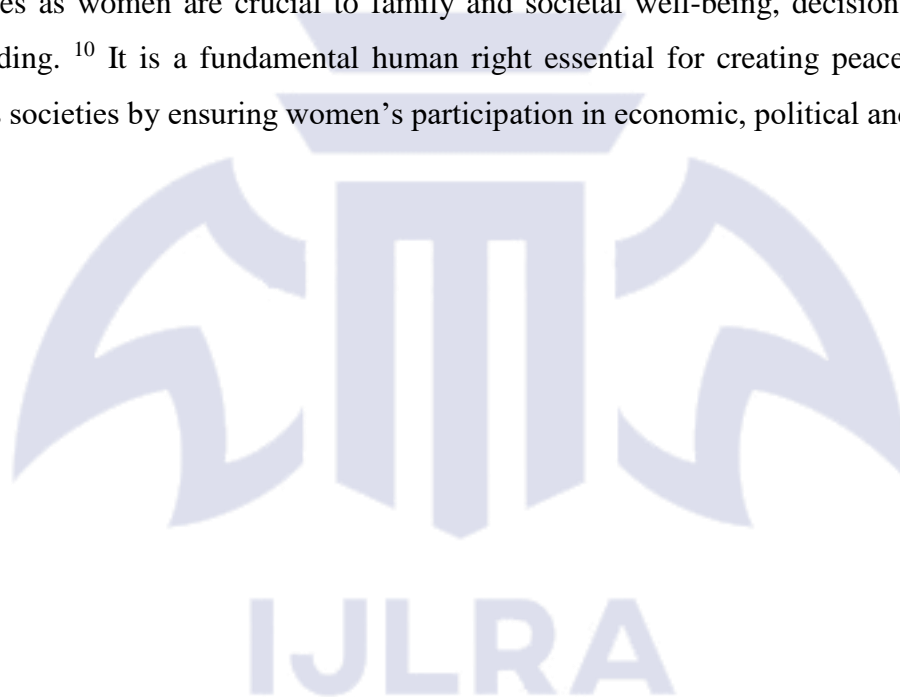
Empowerment though mentioned has rarely any basic key nor the concept is clearly defined. At the same time we find many studies that focus on the reduction of bias, diversity and the inclusion of women in AI which indirectly leads to the empowerment of women. It is also seen that very few AI tools have been formulated and expressed with respect to 'empowerment' as a goal. Extensive support services, cultural norms of trust and safety, strong legal protections against violence and respect for women has been recognised as a challenging field globally because of the high levels of gender inequality globally.

AICTE has declared 2025 as the year of AI, by adopting AI across higher technical educational system.⁹ India can become a global leader in AI with a vision and strategic steps to embrace AI for real world exposure. The future campaign for India will be "AI for all- the future begins here". AI has amplified the women's voice in decision making procedures and thus provide as a tool to challenge the inequalities existing in the society and change to an equitable society. Of late AI analytical and identifying gender combat patterns are the targeted policies so as to rectify the root cause of gender inequality.

⁹ All India Council for Technical Education, *AICTE declares 2025 'Year of Artificial Intelligence'* (Oct. 3, 2025), <https://www.edexlive.com/news/aicte-declares-2025-year-of-ai-training-certification-launched-for-teachers-109123> (last visited Nov. 7, 2025)

In conclusion, algorithmic justice demands an anticipatory, rights-based approach that not only corrects existing inequities but also proactively embeds gender equality into the technological architectures of the future. Interdisciplinary collaboration among legal, technical, and gender studies experts; targeted law and policy reforms; and public awareness are indispensable. By addressing algorithmic bias head-on and integrating gender into every level of AI regulation and design, societies can move beyond mere equality toward true empowerment for women in the digital age.

Empowering women leads to sustainable development, robust economies and healthier communities as women are crucial to family and societal well-being, decision making and peace building.¹⁰ It is a fundamental human right essential for creating peaceful, just and prosperous societies by ensuring women's participation in economic, political and social life.



¹⁰ **U.N. Women**, *Interview with Zinnya del Villar: How AI Reinforces Gender Bias—and What We Can Do About It* (Feb. 2025), available at <https://www.unwomen.org/en/news-stories/interview/2025/02/how-ai-reinforces-gender-bias-and-what-we-can-do-about-it>