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Feminism in the Age of Algorithms: Gender, Power and Resistance in a Digital World

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Abstract

We live in a world progressively run by algorithms. They guide us what to watch, decide which advertisements we see, help employers sort through applications, recognize faces, organize social media feeds, and eventually create the language and visuals we consume. Algorithms are often described as neutral mathematical systems, but they are designed by people, trained on human-generated data, and incorporated within societies that have existing inequalities. This means social prejudices can filter into technological systems and sometimes become more difficult to detect, because they appear to be the product of objective calculation. This creates an important question for contemporary feminism: What happens to gender equality when decisions about our lives are increasingly influenced by algorithms?

This paper addresses feminism in this era of algorithms. It discusses algorithmic gender bias, women's representation in artificial intelligence, intersectional discrimination, digital surveillance, social media, and the prospect of feminist approaches to technology. It asserts that feminism must engage with technology not just as a consumer issue but as a question of power, representation, labour, and social justice. A feminist approach to algorithms asks who creates the technology, whose experiences are reflected in datasets, who benefits from automated systems, and who suffers the consequences when these systems fail. The paper concludes that technology is neither inherently liberating nor inherently oppressive. The social impact is defined by the values, structures and people that comprise it.

Keywords: feminism, algorithms, artificial intelligence, gender bias, technology, intersectionality, digital feminism, algorithmic justice

INTRODUCTION

Feminism has always responded to the changing forms of power in society. From

struggles for education and voting rights to campaigns against sexual harassment, unequal pay, and gender-based violence, feminist

movements have repeatedly asked a basic question: Who has power, and who is excluded from it?

In the twenty-first century, this question has entered a new territory – the digital world.

Algorithms are now part of everyday life. When a social media platform decides which post appears first on our screen, when an online shopping website recommends a product, when a company uses software to filter job applications, or when facial-recognition technology attempts to identify a person, an algorithm may be involved. These systems can make life easier and more efficient, but they may also promote existing inequalities.

This is where feminism becomes particularly relevant. An algorithm does not develop its understanding of the world in isolation. It learns from data produced by human beings and institutions. If that data reflects historical discrimination, an algorithm can learn and reproduce it. UNESCO notes that biases already present in society can be reflected and even amplified by artificial intelligence systems.

Therefore, the question is not simply whether technology is "biased." We must also ask whose values are built into technology, whose voices are missing, and whose lives are affected by technological decisions.

Algorithms Are Not as Neutral as They Appear

The word "algorithm" often creates an impression of mathematical neutrality. We think of a computer as following a set of fixed instructions to arrive at an objective answer. In reality, algorithms are designed, trained, tested, and deployed by people. At each stage decisions are to be made: what data to collect, what categories to create, what outcome to prioritize, and what counts as success.

A feminist perspective makes these choices visible.

The AI Now Institute has highlighted the connection between diversity in tech workforce and bias in technological systems. Its report *Discriminating Systems: Gender, Race, and Power in AI* argues that discrimination in the technology workforce and discrimination created by technical systems should not be treated as separate problems.

This is significant because technology companies do not operate outside society. They are part of society. If women and other historically marginalized groups have less representation in the design of technological systems, their experiences may be overlooked.

The problem is therefore deeper than simply finding a "bad algorithm." It involves the social structures surrounding technology.

The Gender Data Gap

One of the most important concerns for feminism in the digital age is the gender data gap – the inadequate representation of women's experiences in data.

For generations, many areas of knowledge were constructed primarily around male experiences. Medical research, urban planning, workplace design, transportation systems, and economic models have often treated the male experience as a general human experience. When these patterns enter digital datasets, technology can recreate them.

For example, if a dataset used to train an artificial intelligence system contains fewer women than men, the resulting system may perform differently for women. The problem becomes even more complicated when gender intersects with race, skin colour, age, disability, class, or other social factors.

Joy Buolamwini's *Gender Shades* research provides a well-known example. Her research found significant differences in the performance of commercial facial-analysis systems across gender and skin-type groups. The systems performed worst on darker-skinned women,

while lighter-skinned men experienced the lowest error rates.

This example is important for feminism because it demonstrates that "woman" is not a single universal category. The experiences of a white woman, a Black woman, an Asian woman, a rural woman, a disabled woman, or a woman from a low-income background may be very different.

This is where intersectional feminism becomes essential.

Intersectionality and Algorithmic Discrimination

Intersectionality, a concept associated particularly with Kimberlé Crenshaw's work, reminds us that different forms of inequality can overlap. Gender cannot always be separated from race, class, sexuality, disability, nationality, or other social identities.

Algorithms can reproduce these intersections.

Consider facial-recognition technology. If a system performs poorly on women generally, that is one problem. If it performs particularly poorly on darker-skinned women, the problem is not simply "gender bias" or "racial bias." It exists at the intersection of gender and race.

The *Gender Shades* project found that darker-skinned women were the most misclassified group among the systems examined, with error rates reaching 34.7%, compared with a maximum error rate of 0.8% for lighter-skinned men.

The lesson is clear: simply adding more women to a dataset does not automatically make an algorithm feminist or fair. The diversity within the category of women also matters.

A genuinely feminist approach therefore needs to ask not only "Are women represented?" but also "Which women are represented, and whose experiences remain invisible?"

Artificial Intelligence and the Reproduction of Gender Stereotypes

Algorithms do not only make decisions. They also participate in shaping culture.

Digital assistants provide an interesting example. UNESCO's report *I'd Blush If I Could* examined the gendering of voice assistants and noted that many widely used assistants were given female names and voices and were designed with personalities that could reinforce stereotypes of women as helpful, polite, and submissive.

This may appear harmless. After all, a digital assistant is not a real woman. Yet technology participates in culture by repeating particular images and behaviours.

The same issue appears in generative AI. When users ask an AI system to generate images of a "CEO," "scientist," "nurse," "teacher," "leader," or "caregiver," the resulting representations may reflect patterns already present in training data. If society has historically associated leadership with men and care work with women, AI can reproduce those associations.

In this sense, technology does not merely reflect culture. It can help normalize a specific culture.

This makes feminist criticism especially valuable. Feminism has long examined how representations shape our understanding of what women and men are "supposed" to be. Algorithms have now become another powerful producer of representation.

Social Media, Algorithms and Feminist Voices

The relationship between feminism and algorithms is not entirely negative. Digital technology has also created powerful spaces for feminist activism.

Social media has enabled women to share experiences, organize campaigns, challenge traditional media narratives, and create communities across geographical boundaries.

Movements such as #MeToo demonstrated how digital networks can allow individual experiences to become part of a larger public conversation.

However, the same platforms can expose women to online harassment, misogyny, sexualized abuse, doxxing, deepfakes, and coordinated attacks. Algorithms can amplify emotionally charged or controversial content because such content may generate engagement.

UNESCO has increasingly focused on the relationship between generative AI, gender bias, and technology-facilitated gender-based violence. Its 2025 work on AI red teaming specifically addresses ways generative AI systems can reinforce gender stereotypes or facilitate technology-facilitated gender-based violence.

Thus, digital feminism faces a contradiction: the internet can give women a voice while simultaneously creating new mechanisms for silencing and attacking them.

Feminist AI: From Criticism to Participation

Feminism should not approach technology only by asking what is wrong with it. It should also ask what technology could become.

This has led to the emerging idea of feminist AI governance. A feminist approach examines AI as a social and political system rather than merely a technical product. UNESCO's discussion of feminist AI governance emphasizes questions of power, structural inequality, participation, and the different ways technological harms affect marginalized communities.

A feminist approach to AI would include several principles:

1. Diverse participation: Women and marginalized communities should participate meaningfully in technology design and decision-making.

2. Inclusive datasets: Data should reflect the diversity of human experiences rather than treating one group as the default.
3. Intersectional testing: AI systems should be tested across different combinations of gender, race, skin colour, age, disability, and other relevant factors.
4. Transparency: People should have a meaningful understanding of how automated decisions affecting them are made.
5. Human oversight: Important decisions should not be handed entirely to automated systems.
6. Accountability: Organizations deploying discriminatory systems should have mechanisms for correction and redress.
7. Digital literacy: Women and girls should have opportunities to understand and shape the technologies that increasingly influence their lives.

UNESCO's Recommendation on the Ethics of Artificial Intelligence places human dignity, human rights, diversity, inclusion, fairness, transparency, and human oversight at the centre of responsible AI development.

These principles connect naturally with feminist concerns about equality and power.

Towards a More Feminist Digital Future

The future of feminism cannot be separated from the future of technology. As algorithms become more deeply embedded in education, employment, healthcare, entertainment, policing, finance, and communication, questions of gender justice will increasingly become questions of technological justice.

At the same time, feminism must avoid treating technology as a simple enemy.

Technology can make inequality real, but it can also challenge it. Online communities can support women who feel isolated. Digital education can expand access to knowledge. AI can potentially make things more accessible and support people with disabilities. Digital platforms can give marginalized voices opportunities to reach audiences that traditional institutions might ignore.

The central issue, therefore, is not whether technology is "good" or "bad." The more useful question is what kind of society we are building through technology.

A feminist approach asks us to slow down and look behind the screen. Who wrote the code? Who supplied the data? Who made the decisions? Who benefits? Who is excluded? Who can challenge the outcome?

These questions turn feminism into more than a critique of technology. They make it a framework for imagining technology differently.

CONCLUSION

Feminism in the age of algorithms is ultimately a struggle over visibility, representation, participation, and power. Algorithms may appear objective because they speak the language of numbers and computation, but they operate within deeply human societies. They inherit our histories, assumptions, inequalities, and cultural expectations.

The challenge for feminism is therefore not simply to eliminate "bias" from machines. It is to question the social conditions under which machines are created and used.

The experience of women cannot be represented by a single dataset, a single identity, or a single technological solution. An inclusive digital future requires attention to intersectionality and to the voices of those who have traditionally been excluded from technological decision-making.

Feminism has always asked society to recognize the people who were made invisible. In the age of algorithms, that task becomes even more urgent. We need technologies that do not simply work efficiently, but work fairly. We need systems that do not reproduce old inequalities under the appearance of technological neutrality. Most importantly, we need women and marginalized communities not merely to be represented in the data, but to have a genuine role in deciding what the future of technology should look like.

The feminist question in the age of algorithms is therefore simple but powerful: If technology is helping to shape our future, who gets to shape the technology?

The answer to that question will determine not only the future of artificial intelligence, but also the future of equality itself.

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