

Feminist Technoscience and AI Ethics in Rokeya Sakhawat Hossain's Sultana's Dream

Samahira Begum¹, Jessica R², Priyanka M³

^{1,2,3}*HKBK College of Engineering*

Abstract- Rokeya Sakhawat Hossain's Sultana's Dream (1905) is often celebrated as an early feminist utopia, yet its techno-scientific imagination remains understudied in the context of contemporary artificial intelligence (AI). This paper argues that Ladyland anticipates several principles of feminist technoscience - including inclusive knowledge production, ethical design, and socially responsible innovation - that directly parallel modern debates surrounding gender bias and exclusion in AI systems. By reading Sultana's Dream through the lens of feminist AI ethics, this study reveals the story's surprising relevance to twenty-first-century discussions about algorithmic fairness, representation, and the gendered shaping of technological futures. The analysis illustrates how Rokeya's vision challenges patriarchal epistemologies embedded in modern technology and offers an alternative model of feminist technological governance.

I. INTRODUCTION

Artificial intelligence is increasingly woven into the fabric of social, political, and economic life, yet modern AI systems remain deeply shaped by patriarchal assumptions, disproportionate male participation in the field, and algorithmic biases that disproportionately affect women. At the same time, feminist technoscience - an interdisciplinary approach combining feminist theory and science/technology studies - advocates for more inclusive and ethical forms of technological production. Rokeya Sakhawat Hossain's Sultana's Dream, written more than a century before AI's emergence, offers a strikingly relevant vision of feminist scientific practice.

Ladyland, the fictional society in the story, is governed entirely by women who use science and technology not as tools of domination, but as instruments of peace, sustainability, and collective wellbeing. By imagining women as scientists, inventors, and political leaders, Rokeya constructs a feminist technoscientific utopia that contrasts sharply with the gendered power

structures shaping current AI development. This paper argues that Sultana's Dream provides an early blueprint for feminist AI ethics and can be used to interrogate the systemic biases embedded in contemporary algorithmic systems.

II. LITERATURE REVIEW

2.1 Feminist Technoscience

Scholars such as Donna Haraway (1991) and Judy Wajcman (2004) argue that technologies are not neutral; they reflect and reinforce the values, biases, and power structures of their creators. Feminist technoscience critiques the masculine coding of scientific authority and advocates for democratic, responsible, and inclusive technological development.

2.2 Feminist AI Ethics

Recent AI scholarship (Noble, 2018; Crawford, 2021; Buolamwini & Gebru, 2016) demonstrates how algorithmic systems reproduce racial and gender biases embedded in training data and design processes. Feminist AI ethics calls for inclusive datasets, transparency in algorithmic decision-making, and the active participation of women and marginalized communities in AI creation.

2.3 Sultana's Dream and Utopian Technology

Existing literary scholarship largely focuses on the story's feminist reversal of gender norms, its critique of patriarchy, or its utopian political vision. However, few studies have engaged deeply with the text's scientific imagination. This research situates the story in the context of AI ethics, showing how Ladyland's technological ethos parallels feminist aspirations for ethical, non-harmful AI systems today.

III. LADYLAND AS A MODEL OF FEMINIST TECHNOSCIENCE

3.1 Women-Centred Knowledge Production

Ladyland is an intellectual society where women occupy the roles of scientists, educators, and engineers. Unlike modern AI labs dominated by male researchers, Ladyland represents a technoscientific culture where:

- Research is collaborative rather than competitive.
- Scientific inquiry serves societal welfare rather than corporate profit.
- Innovation is shaped by women's lived experiences and ethical priorities.

This sharply contrasts with present-day AI systems which often encode male-dominant worldviews into algorithms.

3.2 Science as Liberation, Not Domination

While patriarchal societies of Hossain's era (and even today) associate technology with control, warfare, or colonization, Ladyland's scientific advancements pursue:

- nonviolence (e.g., the use of solar heat instead of weapons)
- sustainability (solar power, environmental balance)
- social welfare (elimination of physical labour)

This anticipates feminist critiques of AI weaponization and the militarization of technology.

3.3 Ethical Foundations of Ladyland's Science

The story suggests that technology must align with compassion, equality, and ecological care - principles central to feminist AI ethics today. Ladyland demonstrates that scientific progress is only ethical when grounded in:

- communal responsibility
- nonhierarchical governance
- equitable access to knowledge

These principles challenge modern AI systems built on opaque algorithms and profit-driven models.

IV. AI BIAS AND PATRIARCHY: A CONTRAST WITH LADYLAND

4.1 Male-Dominated AI and Algorithmic Bias

Contemporary AI systems reveal gendered biases in:

- hiring algorithms

- facial recognition systems
- search engine outputs
- chatbot training datasets

These biases reflect the patriarchal structures in which AI is developed - structures absent in Ladyland.

4.2 Ladyland's Feminist Epistemology

Ladyland reverses these power structures by positioning women as:

- creators of science
- decision-makers in technological ethics
- architects of social order

Had modern AI followed this model, algorithms might prioritize fairness, care, and inclusion rather than replicating historical inequities.

4.3 Technology without Exploitation

AI often displaces workers, exacerbates inequalities, and may reinforce surveillance. In contrast, Ladyland's automation eliminates burdensome labour without creating economic precarity. Technology liberates rather than exploits - a central concern in AI ethics debates today.

V. ECOFEMINISM AND TECHNOLOGICAL RESPONSIBILITY

Climate change and environmental degradation are exacerbated by energy-intensive AI models. Rokeya's Ladyland, however, imagines a harmonious relationship between science and nature through:

- complete reliance on solar energy
- urban spaces designed to maximize environmental protection
- technology serving ecological balance

This aligns with ecofeminist critiques of technological domination over nature and provides a blueprint for sustainable AI infrastructures.

VI. IMPLICATIONS FOR MODERN AI ETHICS

6.1 Feminist Governance of AI

Ladyland suggests alternative governance structures for AI, including:

- female leadership in technology
- collective decision-making
- ethics-oriented scientific institutions

These principles resonate with current calls for transparent and accountable AI regulation.

6.2 Reimagining the AI Workforce

The story invites us to imagine an AI landscape where women are active creators rather than passive users - a stark contrast to the present gender gap in STEM fields.

6.3 Utopian Thinking as Ethical Framework

Rokeya's utopia functions not as a fantasy but as a methodological tool: imagining what ethical AI should look like. Utopian fiction helps scholars articulate what must change in real AI systems.

VII. CONCLUSION

Sultana's Dream anticipates many foundational ideas in feminist AI ethics long before artificial intelligence existed. Through its portrayal of women-led scientific innovation, ethical technological governance, and nonviolent, sustainable technological systems, the text offers an alternative imagination radically different from contemporary AI's patriarchal biases and extractive structures. Rokeya's vision remains a powerful resource for scholars seeking feminist frameworks for equitable, inclusive, and socially responsible AI development.

Ladyland is not merely a utopia - it is a blueprint for what ethical AI could become if guided by feminist technoscientific principles.

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