



AI AND ALGORITHMIC BIAS

Simplified Teaching Note

Objectives of the resource

The purpose of this OER is to raise awareness among students, professors and LIS professionals of the sources and consequences of AI and algorithmic bias, and to encourage their continued engagement in addressing the challenges and issues these biases cause. It also aims to support the development of best practices and informed decision-making regarding strategies for mitigating and preventing AI and algorithmic bias. Finally, this OER seeks to further articulate and clarify the role of LIS professionals in identifying, managing and reducing bias in an AI-driven society.

Questions for Reflection

1. How do biases in data collection, classification, and metadata practices contribute to gender bias in AI systems?
2. How do AI and algorithmic systems define, categorize, and operationalize gender, and what assumptions are often embedded in these processes?
3. To what extent can AI and algorithmic bias be understood as a technical problem, as opposed to a social and institutional one?
4. What aspects of AI, algorithmic, and data literacy are essential for empowering users to recognize and challenge biased AI systems?
5. How does your institution mitigate or prevent AI and algorithmic bias?
6. What ethical responsibilities do LIS professionals have when selecting, curating, or deploying AI-driven systems and tools?

Intended Learning Outcomes

Students will be able to:

- critically understand and explain AI and algorithmic bias (sources, forms, mechanisms, consequences)
- identify and assess AI and algorithmic bias in practice
- make informed and responsible decisions in AI-driven contexts
- understand the importance of ethical frameworks and the role of LIS professionals in mitigating and preventing (gender) bias in AI systems

Usage in Teaching

Activity 1

Educate students about the importance of training data and design choices. Present students with a short description of datasets used for AI training (e.g. CVs and facial images) and ask them to identify possible data absence or data imbalance. Or tell them to “design an algorithm” for a certain task (e.g. ranking scholarship candidates) and define inclusion/exclusion criteria and weight factors, and then ask them to evaluate their design choices.

Activity 2

Encourage students to use and evaluate different AI tools and algorithmic-based systems using ethical checklists and bias audit frameworks. They can, for instance, monitor different cataloguing software, information retrieval and recommendation systems in regards to algorithmic bias, and critically assess them. They can also analyse short real-life cases describing a biased AI-system. Afterwards, they can create their own ethical guidelines that prioritize fairness, justice, accountability and openness.

Activity 3

Use scenario-based and role-based activities where students get to act as AI users, AI developers or vendors, LIS professionals and decision-makers. Present them with a scenario involving biased AI-system and ask them to identify their own responsibilities, constraints they may face, as well as actions they should advocate for in each of the roles.

Activity 4

Invite a guest lecturer/speaker from the field of AI engineering, AI ethics or LIS field with an experience in AI and algorithmic bias to offer some practical insights and share some project examples.

