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Women Stem-up

WomenSTEM Up for Good Programme

Topic 3: Gender Inclusive AI

a)AI for Social Good

b) Future of AI and inclusive Innovation

LINKÖPING UNIVERSITY

UNIVERSITY OF THESSALY

STIMMULI for social change

NTNU Norwegian University of Science and Technology

DIGITAL LEADERSHIP INSTITUTE

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AI for Social Good

Objective

- This course explores how artificial intelligence (AI) is being applied to address some of the world's most pressing challenges. Through real-world case studies, students will learn how AI is transforming healthcare, education, and climate action, while also considering the ethical implications and societal impact.

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What is AI for Social Good?

Introductory question:

How would you define Social Good? Is there one definition and if so how is AI related to that?

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What is AI for Social Good?

Discussion:

AI4SG is a broad and somewhat fuzzy concept encompassing AI applications aimed at solving societal issues and improving human well-being, with no precise, universally agreed-upon definition. Instead, it is characterized by a focus on ***impactful,*** *often socially beneficial applications across various domains.*

Key technologies: Machine Learning, NLP (Natural Language Processing), Computer Vision

Ethical considerations: fairness, transparency, accountability

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Why do we discuss social impact & AI?

Artificial intelligence as a “technosocial system “

Let’s break this down:

The technical aspects of AI are intimately connected to social aspects.

Social values and assumptions shape the way we perceive, design and use AI. They inform our perceptions, hopes and fears of these technologies. (Hagerty & Rubinov, n.d.)

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AI-driven Inequality

- *Discrimination in datasets*

Healthcare

- *Algorithm-aided chest X-ray classifiers systematically underdiagnose patients of color and female patients*

Banking

Algorithms used to evaluate mortgage applications led to lenders in Chicago were more likely (by 150%) to reject Black applicants relative to white applicants

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AI & Social Impact around the world

- **Bias and Inequality** in Law Enforcement: AI technologies used in judicial sentencing and policing in the U.S. have shown biases, particularly affecting African Americans, indicating a tendency to exacerbate racial inequalities.

- **Facial Recognition and Surveillance:** In Brazil, facial recognition systems are employed in public spaces, such as São Paulo's subway to detect emotions, and in Rio, apps monitor shootings, raising concerns about privacy and social implications.

- **Predictive Policing:** In Delhi, AI analyzes satellite imagery and uses clustering algorithms to identify crime hotspots, which may influence policing practices and community relations.

- **Use in Social Control and Oppression:** Examples include social media algorithms that contributed to the genocide of Myanmar’s Rohingya, China’s surveillance of Uighur populations, and monitoring of political dissidents—demonstrating how AI can entrench social inequalities and enable repression.

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Designing AI for Social Impact

Hands-on Exercise for STEM Students

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Objectives

1. Analyze how AI can address global challenges in healthcare, sustainability, and technology development.
2. Evaluate the ethical considerations, equity, transparency, and accountability in AI applications.

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Instructions

Step 1: Choose a Scenario (5 minutes)
Each group selects one of the following scenarios:

Scenario A: AI for Equitable Healthcare
You are a team of researchers designing an AI tool to improve access to healthcare in underserved communities. Your goal is to reduce diagnostic errors and improve patient outcomes using AI.

Scenario B: AI for Sustainable Cities
You are developing an AI system to help cities reduce carbon emissions and improve quality of life. Your system will analyze traffic, energy use, and pollution data.

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Project Ideation

Step 2: Project Ideation (15 minutes)
Each group outlines a mini-project proposal:
- Problem Statement: What issue are you solving?
- AI Approach: What kind of AI will you use (e.g., ML, NLP, computer vision)?
- Social Impact: Who benefits and how?
- Ethical Considerations: How will you address fairness, equity, and transparency?
- Future Challenges: What risks or innovations might emerge?

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Reflection Prompts

Step 3: Share & Reflect (10 minutes)

Each group presents a 2-minute summary of their idea.
Encourage discussion on:
- What surprised them?
- What ethical dilemmas did they encounter?
- How might their idea evolve with future AI developments?

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Facilitator Tips

Encourage students to think beyond technology—consider policy, culture, and access.
- Use a whiteboard or shared document to collect key themes from each group.
- Optionally, provide a simple worksheet to guide their thinking.

References

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5. Mehrabi, N., Morstatter, F., Saxena, N., Lerman, K., & Galstyan, A. (2022). A survey on bias and fairness in machine learning (arXiv:1908.09635v3). arXiv. https://arxiv.org/abs/1908.09635v3

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Other Resources

1. **Online ResourcesAI Now Institute (https://ainowinstitute.org/)**Research center focusing on AI's social implicationsPublishes annual reports on AI ethics and governance
2. **The Algorithm (MIT Technology Review newsletter)**Regular coverage of AI's societal impactsProvides accessible, in-depth reporting

Long read:

This essay is part of our ongoing "AI Lexicon" project, a call for contributions to generate alternate narratives, positionalities, and understandings to the better known and widely circulated ways of talking about AI.

Brindaalakshmi. K. Brindaa, A New AI Lexicon: Gender, December 15 2021
https://ainowinstitute.org/publications/collection/a-new-ai-lexicon-gender

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