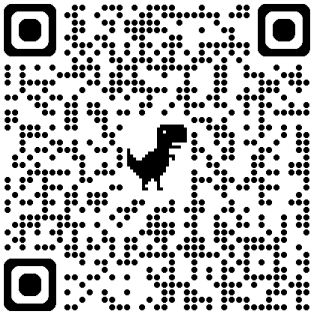
UNIVERSITY OF CALIFORNIA, BERKELEY
Department of Electrical Engineering and Computer Sciences
Computer Science Division

CS10 Spring 2025 **TA: Victoria**



Discussion 14: Social Implications of AI

Instructions:

- If you're attending this section in-person, please log into iClicker!
- If you missed this discussion, you will need to create a brief presentation of one of the topics below (you can pick), and upload it to the Gradescope assignment titled "Discussion 14" by next Discussion. For this discussion, you can work with a group (up to four people per group).
- For the worksheet, you can either explain the process in words, show a screenshot, or draw the block/process.
- Please complete the Feedback Form tinyurl.com/sp25-disc-form

Question of the Day

- If you could create a new school club, what would it be called and what would you do?

Your TA will present a mini-lecture on each of the following topics. You will then be assigned a topic with a group in which you will present a brief overview, highlighting key concepts and examples.

Topics:

1. Algorithmic Bias
2. Consent and Data
3. Digital Surveillance
4. AI and Job Displacement
5. AI in Education
6. Judicial System and Warfare
7. Environmental Implications of AI

Instructions:

- Students research their assigned topic
- Prepare a 2-4 slide mini-presentation
- Answer the specific prompt for your topic
- Address the critical thinking questions provided
- Find / research at least one additional example not from the TA lecture
- Write one critical thinking question for the audience

Group Work:

- Explore the topic with your group
- Feel free to use the slides from the TA or find your own resources
- Discuss the critical thinking questions with your group.
- Try coming up with new questions and considerations and implications
- Synthesize key themes across all topics
- Discuss how these issues connect to students' future roles as technologists
- Provide resources for further exploration

Mini-Presentations:

- Each group presents their key findings (1-2 minutes per group)
- Focus on the parts your group found to be the most interesting
- Provide the critical thinking question you wrote to the audience

Topic 1 - Algorithmic Bias

Mini-Lecture Points:

- Definition of algorithmic bias: systematic errors in algorithmic outputs that create unfair outcomes
- How biased training data leads to biased AI systems
- Real-world examples and consequences

Student Group Instructions:

- Select one case study (Allegheny Family Screening Tool, COMPAS, Amazon's hiring algorithm, iTutor Group, or facial recognition failures) and explain:
    - What was the intended purpose of the algorithm?
    - How did bias manifest in the system?
    - Who was disproportionately impacted?

Critical Thinking Questions:

- Could developers use a method to detect and mitigate this specific bias? Or, was the program flawed from the start?
- Should algorithmic systems be required to demonstrate fairness before deployment? How might this be measured? Who does the definition of fairness change based on the context, and who is asking the question?
- What responsibility do computer scientists have to address bias in the systems they build?
- How can we prevent AI from perpetuating or amplifying existing biases, particularly in situations where human judgment is already flawed?

Topic 2 - Consent and Data

Mini-Lecture Points:

- The concept of informed consent in the digital age
- How personal data becomes an economic asset
- The power dynamics in data collection relationships

Student Group Instructions:

- Compare two examples from our list (Henrietta Lacks, social media platforms,

genealogy companies, TikTok) in terms of:
    - How was consent obtained (or not obtained)?
    - What value was extracted from the data?
    - Who benefited most from this arrangement?

Critical Thinking Questions:

- In what ways are users simultaneously products, consumers, and unpaid workers in digital ecosystems?
- What would meaningful informed consent look like for digital platforms?
- What policy changes might better protect individuals' data rights?

Topic 3 - Digital Surveillance

Mini-Lecture Points:

- The expansion of surveillance technologies in everyday life
- The balance between convenience and privacy
- How surveillance changes behavior and social norms

Student Group Instructions:

- Select two surveillance technologies (social media monitoring, digital assistants, GPS tracking, productivity apps, biometric systems) and analyze:
    - What data is being collected?
    - Who has access to this data?
    - What are the stated vs. potential uses of this data?

Critical Thinking Questions:

- How might constant surveillance affect people's behavior and sense of autonomy?
- What personal information would you consider "off-limits" to data collection? Why?
- How might we design technologies that provide benefits without compromising privacy?

Topic 4 - AI and Job Displacement

Mini-Lecture Points:

- Historical context of technological displacement
- Current trends in AI automation across industries
- Potential economic and social impacts

Student Group Instructions:

- Examine one example (autonomous vehicles like Waymo, manufacturing automation, gig economy platforms) and analyze:
    - What specific human roles are being automated?
    - What new roles might emerge?
    - Who bears the costs of this transition?

Critical Thinking Questions

- What skills or jobs might remain as AI continues to advance?
- How might education systems need to adapt to prepare people for the future of an AI dominated workforce?
- What social or economic policies might help address displacement concerns?

Topic 5 - AI in Education

Mini-Lecture Points:

- AI tools transforming learning and assessment
- Tensions between efficiency and authentic learning
- The emerging role of AI as educational partner

Student Group Instructions:

- Identify the benefits and risks of generative AI in education:
    - How might AI support genuine learning?
    - When might AI enable bypassing important learning processes?
    - What skills become more or less important in an AI-integrated classroom?

Critical Thinking Questions:

- What does the case of a student who graduated college without being able to read reveal about educational systems?
- What are the dangers of replacing software engineering with prompt engineering?
- What are the implications for students relying more on generative AI than instructors, TAs, and other students?

Topic 6 - Justicial System and Warfare

Mini-Lecture Points:

- AI applications in legal contexts and battlefield environments
- Questions of accountability and control
- Ethical frameworks for lethal autonomous systems

Student Group Instructions:

- Choose one domain (predictive policing, judicial decision support, autonomous weapons, military surveillance) and analyze:
    - What human decisions are being augmented or replaced?
    - What are the potential risks?
    - Who is accountable when these systems fail?

Critical Thinking Questions

- Should there be a "human in the loop" requirement for high-stakes AI applications? Why or why not?
- What international agreements or regulations might be needed to govern AI in warfare, and who gets to make these decisions? How will it be enforced?
- How does the use of AI in warfare contribute to the dehumanization of targets, potentially leading to increased brutality and a lower threshold for the use of force?

Topic 7 - Environmental Implications of AI

Mini Lecture Points:

- The substantial energy consumption and carbon emissions associated with training and running AI systems
- The physical resource requirements and hardware lifecycle issues
- The impact of AI on mining precious resources

Student Group Instructions:

- Choose one specific AI application (LLMs like ChatGPT and Gemini, Recognition services like face scanning, Smart city AI systems, Autonomous vehicles, Cryptocurrency mining, AI Assistants like Alexa) and analyze the environmental impact through the following questions:
    - What are the direct energy requirements?
    - What hardware infrastructure and precious resources are needed?
    - What are the lifecycle environmental considerations?
    - Where is the environmental impact located geographically, and does it affect one community disproportionately?

Critical Thinking Questions:

- How transparent should AI companies be about their environmental footprint?
- Who bears the environmental costs of AI advancement, and who receives the benefits?
- How might we balance innovation with environmental sustainability in AI development?
- What technical or policy approaches could reduce AI's environmental impact?
- Propose one specific strategy for making your chosen AI application more environmentally sustainable.