Lecture 30: Ethics

CS 62

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With great power…

- You now have the foundation to identify problems and create solutions

- As scientists, inventors, programmers, what responsibilities and challenges do you anticipate to face?

Best case - Worst Case

1. Write down one fear you have related to the trajectory of computer technology in the 21st century and/or beyond.

2. Write down one thing that you hope to see computer technology achieve within your lifetime.

Data Structures

- Data structures force input to conform
- Simplifying a complex world
- Errors can shut out users

Data and Identity – think pair share

Imagine you're building a data structure for personal profiles.

- What data type would you use to represent gender?

- What data type would you use to represent sex?

- How would a user enter this data?

Algorithms

- promise easy-to-understand effects
  e.g., "the data will be sorted"

- Algorithms enable new behavior/interactions

- What if your data is tainted?

- What if your algorithm has bias?

Cautionary Tales - think pair share

- [How to teach a computer what fair means](#)
  Bloomberg

- [How to Fix Silicon Valley's Sexist Algorithms](#)
  MIT Technology Review

- [Facial Recognition is accurate, if you're a white guy](#)
  NYTimes

- [The Cambridge Analytica Scandal, in 3 paragraphs](#)
  The Atlantic

Data & Ethics

- Privacy
- Equity in access
- Societal impact
- Misinformation
- Discrimination
- Everything from sexism to white supremacy
- Weaponization
  - Both government and criminals etc.

Good intentions

- Imagine an app that contributes to society.
- How could it unintentionally cause harm?
- How could it be used intentionally to cause harm?