Lecture 30: Ethics

CS 62
Spring 2018
Alexandra Papoutsaki & William Devanny
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?