

# 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?