Software Use and Effects

CS109: Ethical Foundations of Computer Science
April 17, 2018
Effects of Software

• Intentional
  • *When the goal conflicts with your morals, what are your responsibilities?*

• Unintentional
  • *When the unintended consequences of software conflict with your morals, what are your responsibilities?*
Safety First

Make sure your software isn’t going to kill anyone
• Defaults
• Edge cases
• Failure cases
• Privacy
• Interaction from other parts of the software
User Experience

• Bad software makes the user feel frustrated
• Don’t count on your ability to guess how they will use it
• Bad software can lead to users making bad mistakes
  • Texas Maternal Death Rate
  • Hawaii Missile Defense System
Algorithmic Bias

- Policing
- Banking
- Google home and religion
- Software recommendations
- Class recommendations (coursera)
- Feedback loop/Echo chamber in Facebook
Marginalization

- Software can fail to include much of the population
- Diverse population on design
  - Barring that, you need to educate yourself
- Tests groups representative of audience
And on and on...

- Disrupting employment
- Causing traffic accidents
- Addictive software
- Social media and the rise of teen suicide
Case Studies on Algorithmic Bias

• Choose:
  • Policing
    • Palantir has secretly been using New Orleans to test its predictive policing technology
    • Machine Bias in the criminal justice system
  • Banking
    • Algorithms and bias: What lenders need to know
    • Is it OK for lending algorithms to favor Ivy League schools?

• Additional Resources:
  • Al Professor Details Real-World Dangers of Algorithm Bias
  • Hey, Computer Scientists! Stop Hating on the Humanities
  • Inspecting Algorithms for Bias