

# CS3110 Level Up

## Ethics in CS

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# This topic is huge.

We won't even come close to covering everything.

# Resources

CS3110 Spring 2018  
Prof. Foster's lecture on Ethics in CS

ENGRG3600  
Ethical Issues in Engineering Practice

ENGRG2750  
Ethical Issues in Intelligent Autonomous Systems

INFO4301  
Ethics in New Media

...and many more both in and outside of  
Cornell



Ethical Issues in CS

Nate Foster  
Spring 2018

A question from Professor Nate Foster in Spring 2018...

# Is Facebook good for society?

Has Facebook made your life better? Has Facebook made your life worse?

A question from Professor Nate Foster in Spring 2018...

# Is facial recognition software good for society?

What are problems that come up with the rise of facial recognition software?

A question from Professor Nate Foster in Spring 2018...

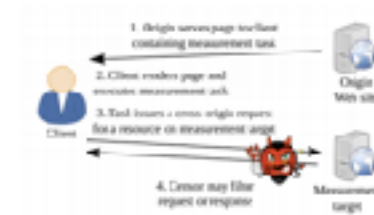
**Should Facebook use facial  
recognition technology to  
automatically identify  
untagged people?**

Can Facebook store biometric facial information without explicit consent? What are negative implications of using facial recognition?

# Privacy

- Freedom
  - Free speech
  - Net neutrality
- Mass surveillance
- Consent

## Example: Encore (SIGCOMM '15)



- Browser-based tool for measuring censorship
- Deployed onto ~88k clients in 170 countries

Picture taken from Prof. Nate Foster's slide in CS3110 Spring 2018

Picture taken from Prof. Nate Foster's slide in CS3110 Spring 2018

Researchers wanted to view web filtering worldwide, and did so by injecting elements onto pages where the visitor would unknowingly download and execute a piece of code that reported back to the researchers whether a censored access attempt was successful. Users had not consented.

# Privacy

- The Internet knows a lot about you.
  - Facebook
  - Google
  - Amazon
  - ...and many more.

You are susceptible to persuasion and microtargeting.

Data might be saved about you for a lifetime.

You may even get your data stolen.

Ads and targeting, fingerprinting, surveillance, even product recommendations.´

Or, much subtler



# Privacy

- The right to be forgotten
  - Should people who post 'offensive' beliefs be punished?
  - Should they have a right to be forgotten?
  - What about people who commit felonies?
- "Jokes" and culture shifts

Harvard Rescinds Acceptances for At Least Ten Students for Obscene Memes



'Racists Getting Fired' exposes weaknesses of Internet vigilantism, no matter how well-intentioned

Key questions: do people have a right to be forgotten when it comes to what they post online? Should people with "immoral" (however you define it) beliefs have a right to be forgotten? Do people who suffer punishment such as jail for being a convicted felon have a right to be forgotten?

What defines a joke? (example: Harvard rescinding admissions)

What about topics that were once OK to speak about but are under a culture shift?

# The Dataset Problem

## Cycle of Bias

- How?
- Why?
- Implications on today's software

BREAKING NEWS 10:00 AM  
**HP INVESTIGATES CLAIMS OF  
'RACIST' COMPUTERS**

Biased society created biased datasets, which in turn create an even more biased society.

Source: AI's White Guy Problem by Kate Crawford

Example: Women are less likely to be shown ads for high-paying jobs (such as tech) and increase an already-existent gender gap.

# Example: Recidivism Predictor



	WHITE	AFRICAN AMERICAN
Labeled Higher Risk, But Didn't Re-Offend	23.5%	44.9%
Labeled Lower Risk, Yet Did Re-Offend	47.7%	38.4%

ProPublica Article

Example: Software assessing recidivism in criminals is twice as likely to mistakenly flag black defendants for being at higher risk of committing future crimes, and twice as likely to incorrectly flag white defendants as low risk. Police increase presence in poorer nonwhite neighborhoods, and predictive programs are trained further on biased data.

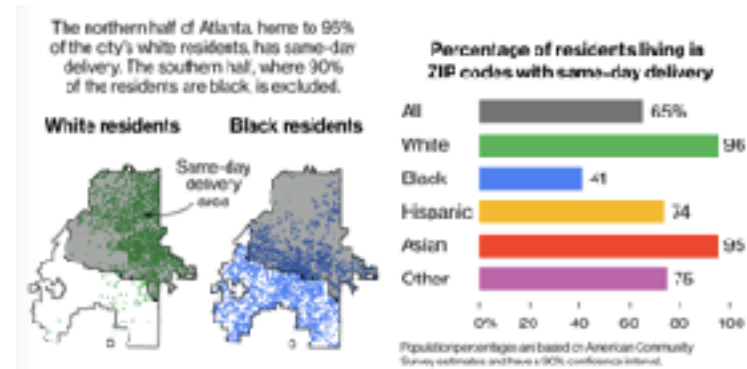
## Example: Google (+ many others)

**Google Mistakenly Tags Black People as  
'Gorillas,' Showing Limits of  
Algorithms**

**Women less likely to be shown ads for high-paid  
jobs on Google, study shows**

# Example: Amazon Same-Day Delivery

Amazon gives access to same-day delivery to areas with the most existing paying members. Primarily, this targets predominantly white and wealthy parts of the nation — those with well-stocked and quality stores.



# Why does algorithmic bias happen?

- Biased Datasets
- Homogenous Workforce
- Lack of algorithmic transparency
- Lack of accountability
- Lack of external pressure (such as governmental, financial, etc
- + more

Why does any of this matter?

# The Driverless Car

"The ethical dilemma of self-driving cars - Patrick Lin"

<https://www.youtube.com/watch?v=ixloDYVfKA0>



**There are consequences**

...because you have a lot of power.

# A few ending questions

- How do you design fair algorithms?
- How do you protect human rights?
- How do you keep cyber weapons from being misused?
- How do you ensure your software is good for the world?