CS 4873: Computing, Society & Professionalism

Munmun De Choudhury | Assistant Professor | School of Interactive Computing

Week 1: Welcome and Overview
January 6, 2020

Introduction

- ↗ Instructor
  - ↗ Munmun De Choudhury (www.munmund.net)
  - ↗ munmund@gatech.edu
  - ↗ Office: CODA 1576B

A Little Bit About Myself...

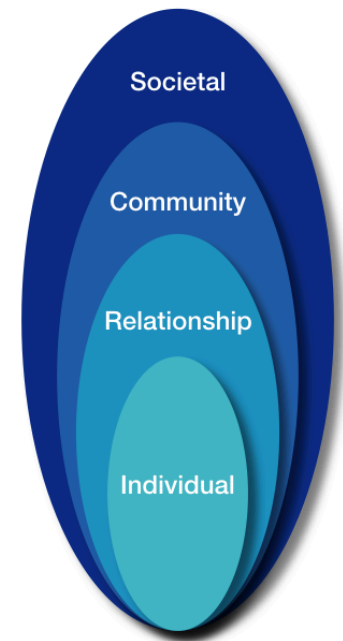Social Dynamics and WellBeing Lab

Computational and AI artifacts for social good
Understand and improve wellbeing

Social Media
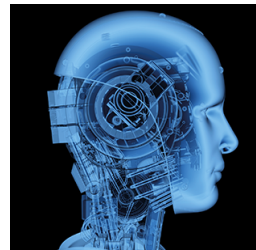
Human/Stakeholder-Centered AI + Interdisiplinary

Theory Centered

Teaching Assistants

- ↗ Candice Butts (Head TA)

- ↗ Anjali Devakumar

- ↗ Kavin Krishnan

- ↗ Nilay Mehta

- ↗ Jay Modh

- ↗ Jas Pyneni

- ↗ Kathy Tran

- ↗ … Additional TAs will join depending on the final course enrollment

Meeting with the instructor and/or TAs

- ↗ Office hours of the instructor: Wednesdays 3-4pm

- ↗ Email your section TA to find out about their office hours

- ↗ Email us to get an appointment if the office hours time does not work out
  - ↗ Expect 24-40 hours to receive a response

- ↗ Questions regarding deliverables asked less than 48 hours to the deadline may not be answered on time
  - ↗ Tip: Start early!

The story of Sarah Wysocki, a popular and by all accounts successful 5th grade teacher in Washington, D.C., who was fired by an algorithm

NEW YORK TIMES BESTSELLER

WEAPONS OF MATH DESTRUCTION

HOW BIG DATA INCREASES INEQUALITY
AND THREATENS DEMOCRACY

CATHY O'NEIL

Cathy O'Neil is a data scientist and author of the blog mathbabe.org. She earned a Ph.D. in mathematics from Harvard and taught at Barnard College before moving to the private sector, where she worked for the hedge fund D. E. Shaw. She then worked as a data scientist at various start-ups, building models that predict people's purchases and clicks. O'Neil started the Lede Program in Data Journalism at Columbia and is the author of *Doing Data Science*. She is currently a columnist for *Bloomberg View*.
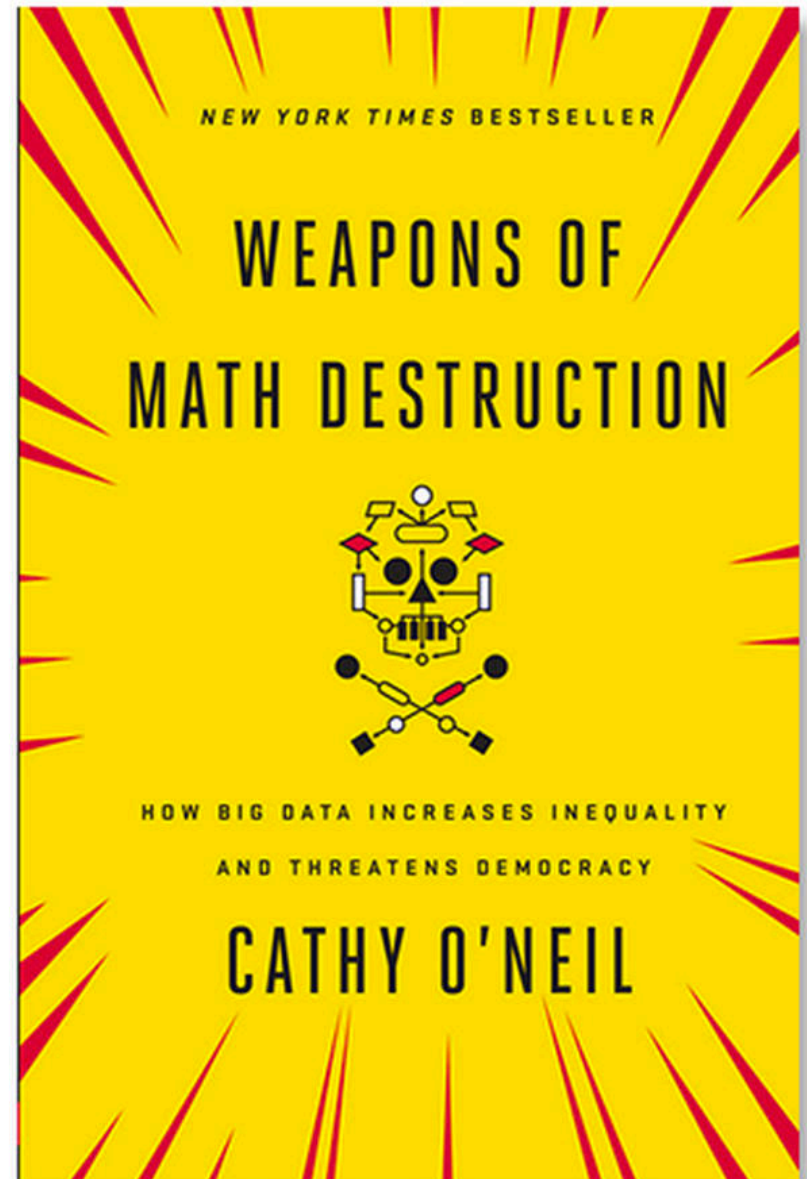
Learning Objectives

↗ *Ethics:* What do "right" and "wrong" mean anyway? We'll learn about several philosophical approaches to ethics including utilitarianism, social contract theory, and virtue ethics. The goal is to be able to address ethical dilemmas with reasoned arguments, grounded in a combination of these ethical theories.

↗ *Professional Ethics:* What special responsibilities do we have as computing professionals? What do the Software Engineering Code of Ethics and ACM Code of Ethics say, and how can we use these in our daily practice?

Learning Objectives

➚ *Computing and Society:* In what ways does computer technology impact society? We'll talk about a host of issues including privacy, intellectual property, freedom of speech, governmental surveillance, AI and automation, algorithmic bias and manipulation.

At the end of the course...

↗ How do we protect people's privacy when systems collect and need so much data?

↗ How do we empower marginalized communities instead of exploiting them with technology?

↗ How do we continue to trust media in the face of algorithmically created and distributed disinformation?

At the end of the course...

↗ How is a product/project achieving ethical accountability?

↗ How might individuals' privacy and anonymity be impinged via aggregation and linking of data a product might need?

↗ How do we know that the data is ethically available for its intended use?

↗ How do we know that the data is valid for its intended use?

↗ How transparent does the machine learning model need to be and how is that transparency achieved?

↗ What are likely misinterpretations of the results and what can be done to prevent those misinterpretations?

Course Format

- ↗ Two 50 minute lectures
  - ↗ Monday, Wednesday 11:15am-12:05pm

- ↗ Recitation sections
  - ↗ Small discussion groups of 10 students each
    - ↗ Wednesday-Friday
  - ↗ Note the recitation section you are registered for *
  - ↗ Once a week; two hour block (most times less)
  - ↗ Led by one of the TAs (TA fixed throughout the course for each section)
  - ↗ Material to be covered – what is covered in that week's lecture; will include exercises distributed through handouts

- ↗ * We may request students in some of the smaller sections to join others

Class Resources

- Course webpage: http://www.munmund.net/CS4873_Spring2020.html

- Syllabus*: http://www.munmund.net/CS4873_Spring2020.html

- Piazza for announcements

- Canvas for assignment, term paper deliverable, and section discussion material submissions

- * Subject to minor changes. Always check the class schedule online

Required Texts

↗ Ethics for the Information Age*, Seventh Edition or above, by Michael Quinn

↗ Articles accessed through GT library and GT VPN.

↗ Articles available online.

* (You may rent an electronic copy rather than buying it.)

Class Materials

↗ Lecture slides will be made available online (on course website), the night before class

↗ A discussion guide will also be posted on the course website a week before

↗ Section exercises, distributed in class by the section TA, will also be available on the course website a week before

↗ Assignments will be released 10 days in advance

↗ Term paper deliverables will be released two weeks in advance

Assignments and Grading

- Recitation Section Attendance and Participation - 15%

- Surprise in-class quizzes (during lecture) – 5%
    - Five in all

- Homeworks – 20%
    - Four homeworks due between January 15 and April 8

- Midterm - 15% (March 2)

- Term Paper - 25%

- Final Exam - 20% (Final exam week – Apr 27 [take home])

Late Policy

➚ Students need to submit all of their materials on or before the deadline to qualify for 100% credit.

➚ 24 hours delay will result in 25% penalty; 48 hours late submissions will incur 50% penalty.

➚ Materials submitted past 48 hours will not be accepted, and will entered a zero grade.

Lecture Attendance

↗ You are expected to be in the class to follow the material and the discussions in the recitation sections.

↗ Surprise pop quizzes.

Recitation Section Attendance

↗ Recitation section attendance is required. Please remember to sign the attendance sheet.

↗ Please do not sign the attendance sheet if you are more than 15 minutes late.

↗ If you need to miss class for a legitimate reason (sickness, job interview, personal emergency), please send email to the instructor and your section's TA before class.

   ↗ Emergency, religious holidays etc.

↗ You may miss up to two recitation classes without it affecting your grade.

↗ Attendance scoring starts from next week!

Lecture, Section Participation

- We will use a lecture (slides), discussion, class activity style of instruction.

- Discussion may draw from assigned class readings, material in the slides, class activity, or other material distributed in handouts, popular science articles, videos etc.

- Participation will count towards your grade.

- Homeworks and exams can extensively draw from lectures, as well as section discussions/activities

Class Discussion - Piazza

↗ Link: https://piazza.com/class/k4ybf6dzwza2ne

  ↗ Also available on the course website

↗ Use it for asking questions and discussion

Grading Criteria and Logistics

- Grades may be curved, due to the large class size

- Genuine reasons (e.g., an error in grading) to revise grades of individual deliverables will be considered
    - Reach out and discuss this with your section TA first, who will be in charge of grading all your deliverables

- Grade comparisons with peer classmates will not be entertained

- End of term requests to increase grade will not be entertained

Significance

What is ethics?

What is Ethics?

↗ The word ethics comes from the Greek word ethos meaning customs or habits

↗ Ethics is also known as moral philosophy

↗ In other words, ethics means the science of customs or habits of society

Out in the desert you are driving. You can see in all directions for miles. No one else is around. Do you stop at a stop sign? Why or why not?

The Stop Sign ↗

Revisiting "what is ethics"

↗ Ethics is the field of study that is concerned with questions of value, that is, judgments about what human behavior is "good" or "bad" in any given scenario.

↗ Ethics are the standards, values, morals, principles, etc which are used to base one's decisions or actions on; often there is no clear "right" or "wrong" answer

Discussion Point: Free speech and cyber harassment

➚ Should cyberbullying be a criminal offense?

   ➚ Cite three reasons why it should be.

   ➚ Cite three reasons why it should not be.

Arguments

↗ FOR:

   ↗ It can result in suicide; criminalization will save lives.

   ↗ Cyberbullies are harassing because of prejudice and hate; therefore, they should be getting the same consequence as any others who commit hate crimes.

   ↗ Criminalizing cyberbullying would act as a deterrent. If we criminalize cyber bullying, it would decrease the number of people who do it, because they know that there is the possibility of getting in trouble for it.

Arguments

↗ AGAINST:

  ↗ Difficult to define cyberbullying – what is severe enough that warrants prosecution?

  ↗ Violates the first amendment

  ↗ There are too many kids who cyberbully, the government would not be able to prosecute them all. 53% of kids admit having said something mean or hurtful to another person online. This means that about 26 millions kids would be liable for cyber-bullying prosecution

Some Case Examples We Will Consider in the Class Going Forward

↗ Algorithmic bias

- ↗ Amazon's hiring tool

↗ Privacy

- ↗ "Always on" Internet of Things (IoT) devices

↗ Governmental surveillance

- ↗ Public surveillance in China

↗ Technology and power

- ↗ The Facebook emotion contagion study
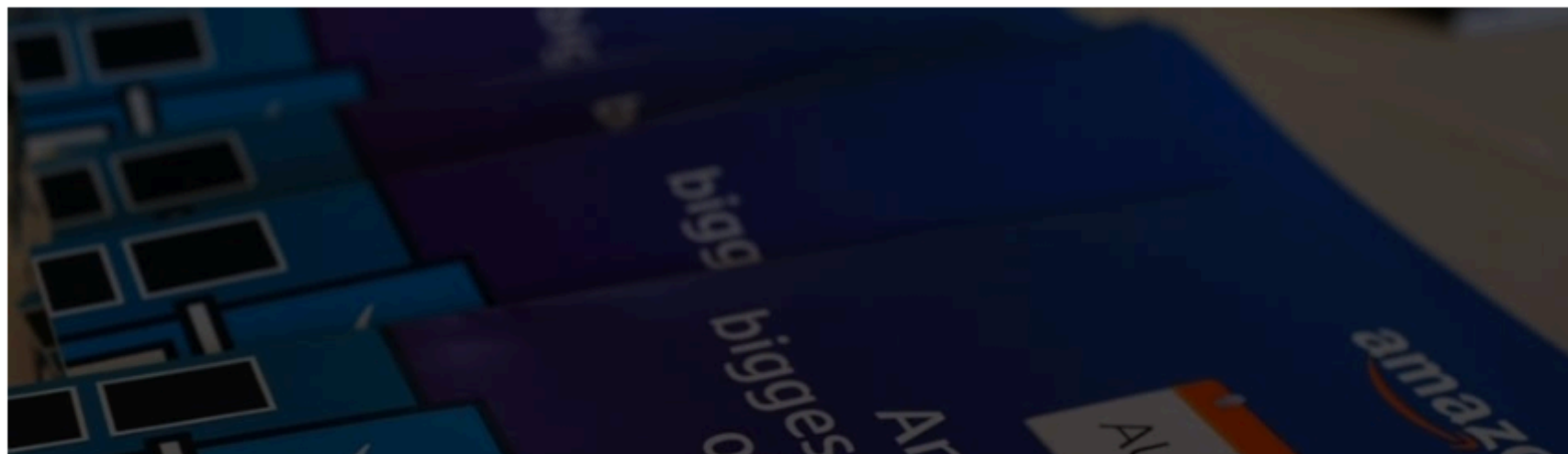
Amazon scraps secret AI recruiting tool that showed bias against women

Jeffrey Dastin   8 MIN READ

SAN FRANCISCO (Reuters) - Amazon.com Inc's (AMZN.O) machine-learning specialists uncovered a big problem: their new recruiting engine did not like women.

Don't Buy Anyone an Echo

Adam Clark Estes

12/05/17 10:28am • Filed to: GRINCH WEEK ˅

Amazon/Gizmodo

Three years ago, we said the Echo was "the most innovative device Amazon's made in years." That's still true. But you shouldn't buy one. You shouldn't buy one for your family. You definitely should not buy one for your friends. In fact, ignore any praise we've ever heaped onto smart speakers and voice-controlled assistants. They're bad!

China's CCTV surveillance network took just 7 minutes to capture BBC reporter

Posted Dec 13, 2017 by *Jon Russell* (*@jonrussell*)

It took Chinese authorities just seven minutes to locate and apprehend BBC reporter John Sudworth using its powerful network of CCTV camera and facial recognition technology.

This wasn't a case of a member of the media being forcibly removed from the country. The chase was a stunt set up to illustrate just how powerful and effective the Chinese government's surveillance system can be. It's a stark example of the type of monitoring that China has invested heavily in over recent years with the aim of helping police do their job more efficiently.

Facebook Tinkers With Users' Emotions in News Feed Experiment, Stirring Outcry

By **VINDU GOEL**   JUNE 29, 2014
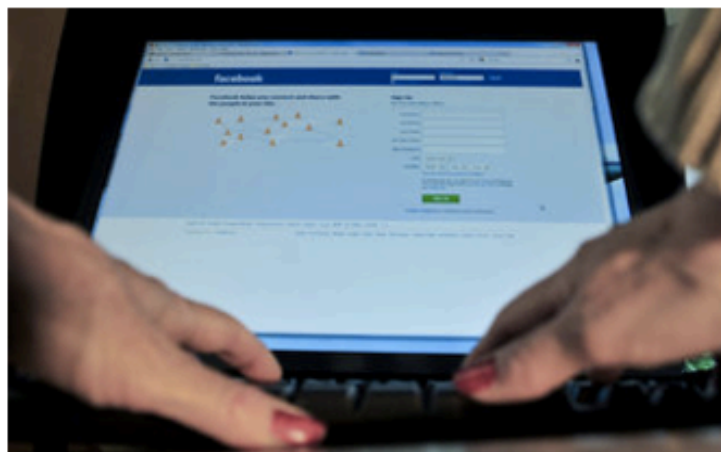
Facebook revealed that it had altered the news feeds of over half a million users in its study.
Karen Bleier/Agence France-Presse — Getty Images

To Facebook, we are all lab rats.

Facebook routinely adjusts its users' news feeds — testing out the number of ads they see or the size of photos that appear — often without their knowledge. It is all for the purpose, the company says, of creating a more alluring and useful product.

But last week, Facebook revealed that it had manipulated the news feeds of over half a million randomly selected users to change the number of positive and negative posts they saw. It was part of a psychological study to examine how emotions can be spread on social media.

Difference between legal and ethical

Difference between legal and ethical

↗ Law controls what people can and cannot do, while ethics are moral standards that govern what people should or should not do

↗ In some instances, legal regulations prohibit people from carrying out certain tasks, such as administering life-saving support, that are considered morally permissible actions.

Difference between legal and ethical

- Some laws generate few negative responses, as their intent to protect and promote the safety and well-being of the public is virtually indisputable.

- Other laws, however, generate disagreement among citizens, particularly over sensitive issues such as end-of-life care and medical treatment for certain conditions.

- While legal and moral issues sometimes coexist in harmony, they can also raise questions and generate conflicting opinions.

↗ *Illegal but ethical:* Civil disobedience against unjust laws during the Civil Rights Movement; letting someone else use your prescription asthma inhaler when they are having an attack; euthansia

↗ *Legal but unethical:* Lying to boss to take a sick leave because you have to take care of your kid; speaking against government in authoritarian regimes; same sex marriage laws in some countries

↗ *Both illegal and unethical:* murder, sexual assault

Next Class

↗ Materials and readings on the class website – The Therac-25 controversy

↗ Longer than normal reading, but interesting

↗ Try to identify three things:

   ↗ People: who was involved? what did they do? what might they've done differently?

   ↗ Policies: government; corporate