

Week 13.1

Agenda

- 1. Annoucements**
- 2. Quick Lecture - AI (technical & social)**
- 3. Time to Work On Projects**

Announcements

- Debates and final projects
- Course evaluations (end ten minutes early)
- This week and next week
 - Today: Check in with Arnab and I about project ideas
 - Thursday: Arnab and I around during class
 - Next week: Presentations

A Note on Final Projects

- Remember you're doing a prototype
- This is a nice time to dream big. What do you wish existed? What would you like to change? Who do you want to speak to?
- Alternately, it's a time to narrow in: what has interested you over the course of the semester?
- Work smart, not hard.

Today

- **data > information flux models > disinformation > algorithms in social spaces > AI**
- **CAVEAT: it's impossible to talk about AI in 20 minutes**

Definitions

Automated Decision-Making Systems - Systems in which decisions that impact people are made with software or through automated means

Data-Driven Systems - Systems that are informed, determined by, or dependent on the collection or analysis of data

Socio-Technical Systems - Systems that include interaction between people and technology

Definitions

Artificial Intelligence - The theory and development of computer systems able to perform tasks that normally require human intelligence.

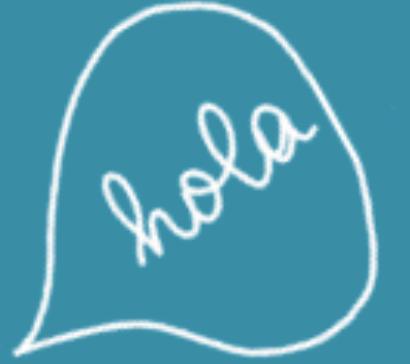
- ***Weak (narrow) AI*** - is focused on one particular problem or task domain
- ***Strong (general) AI*** - that focuses on building intelligence that can handle any task or problem in any domain

Artificial Intelligence - The theory and development of computer systems able to perform tasks that normally require human intelligence.

– ***Machine Learning*** - A branch of AI in which rather than being explicitly programmed, computing systems generate rules and predictions based on data

CHAPTER 3

MACHINE LEARNING



THE DIFFERENCE BETWEEN AI AND MACHINE LEARNING

When we talk about AI, sometimes we are actually talking about a field called “machine learning.” These two concepts are often grouped together because machine learning makes up part of the field of artificial intelligence. Just as every cat is an animal, but not every animal is a cat, every machine learning algorithm is an example of AI, even though not everything in AI is machine learning. But the real difference between the two comes down to the different algorithms that make them up, and what those algorithms try to do.

This is what machine learning is about, but on a much larger scale.

In machine learning, we give computer programs lots of information and those programs use specific algorithms to see the patterns in the information.

Once they are able to recognize the patterns, they can then predict what is likely to happen next—assuming that the pattern stays the same.



AI IN ACTION

Pointing to exactly what counts as AI and where it is being used is a surprisingly hard thing to do. This is because many examples of AI aren't about the creation of entirely new things. Instead, they are about adding AI to existing things. Adding AI can speed up a process, eliminate the need for humans to do something, or make a system more efficient.

Take the example of self-driving cars. Maybe you've heard about companies like Waymo, Uber, and BMW that are all trying to build cars that can drive themselves. This idea may sound crazy and futuristic, but when we break it down, we can see that it's really just an extension of something that we have been doing for years: automating our cars. When you automate something, you make it work with little to no human control. Over time, we've automated more and more parts of our cars. Older cars had manual transmission, or stick shift, where

the human driver sets the gear the car is driving in. Today we have automatic transmission: you just put the car in one gear and go.

Self-driving cars push this idea to the extreme: why not just automate *everything* in a car? This used to seem impossible—we thought that the process of driving a car was so complicated that only a human could do it. But AI is quickly changing things. Self-driving cars have sensors that can take in information about exactly what is around them, and AI is being used to sort through that information and determine how to react (for example, we want our cars to respond differently to a stop sign than to a yield sign).

We've provided more examples of ways in which AI shows up in your life. These show the many roles that AI plays—not in creating new objects or applications, but in improving existing ones.

Read the list and check the box next to the applications you have experienced.

VIRTUAL ASSISTANTS

Nowadays many companies have created AI personal assistants that do some of the work that human assistants do. These AI assistants can take on tasks like scheduling meetings, figuring out how long it will take people to respond to emails, and finding files in email inboxes.

Chatbots are a common example of virtual assistants. If you've ever logged onto a website and had a window pop up asking if you want to chat with a customer advisor, keep in mind that you might be interacting with an AI system! Already these assistants are quite sophisticated, able to

handle all types of questions and respond with accuracy.

HANDWRITING RECOGNITION

For humans, recognizing handwriting seems simple. But for computers, it's way more challenging. A computer has to be able to make sense of all ways that humans can write the same character differently. However, handwriting recognition is one example of AI that has been integrated into our lives. When you deposit checks from your mobile phone or into an ATM, AI is behind that ability for the machine to make sense of the letters and numbers.

The way we talk about these systems
reveals how we think about them.

AI issues according to news, general public

1. AI is being used to do [insert surprising thing that we might not have thought computers can do].

AI Being Used To Bust Those Netflix Account Moochers



Nicole Martin Contributor [\(i\)](#)

AI & Big Data

I write about technology, data and privacy.

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Netflix photo credit: Getty GETTY

Netflix moochers beware, you may have to start paying for your own account.

At a [technology event in Las Vegas](#), a software firm Synamedia unveiled their Orwellian AI system which has been created to track down any account that has been sharing login information with another.

- 1. AI is being used to do [insert surprising thing].**
- 2. Robots are going to take over our jobs.**

Robots Will Take Our Jobs And We Need A Plan: 4 Scenarios For The Future



Blake Morgan Contributor ⓘ
CMO Network
Customer Experience Futurist, Author, Keynote Speaker

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Bloomberg

Here's the truth: Robots are already starting to take jobs from hourly human workers, and it's going to continue. Research from [McKinsey](#) found that 45% of current jobs can be automated. We need to stop avoiding the situation and create real solutions to help displaced workers. You can't simply put a stop on technology innovation. Bans often create worse situations than allowing people to innovate but closely watching how we innovate, and the impact to society. Many famous leaders have joined Elon Musk to start something called Open

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- 3. We should be afraid of AI.**

Remember Elon Musk's Scary Warning Against AI? Here's More Reason to Worry.

Chinese venture capitalist Kai-Fu Lee will say on '60 Minutes' that AI will replace 40 percent of society's jobs within as soon as 15 years.

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Joan Oleck
ENTREPRENEUR STAFF
Associate Editor





AI takeover

From Wikipedia, the free encyclopedia

An **AI takeover** is a hypothetical scenario in which artificial intelligence (AI) becomes the dominant form of intelligence on Earth, with computers or robots effectively taking control of the planet away from the human species. Possible scenarios include replacement of the entire human workforce, takeover by a **superintelligent AI**, and the popular notion of a robot uprising. Some public figures, such as **Stephen Hawking** and **Elon Musk**, have advocated research into precautionary measures to ensure future superintelligent machines remain under human control.^[1] Robot rebellions have been a major theme throughout science fiction for many decades though the scenarios dealt with by science fiction are generally very different from those of concern to scientists.



Robots revolt in *R.U.R.*, a 1920 play

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 - 1.2 Eradication
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- 2 Contributing factors
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 - 2.1.1 Sources of AI advantage
 - 2.2 Possibility of unfriendly AI preceding friendly AI
 - 2.2.1 Is strong AI inherently dangerous?
 - 2.2.2 Necessity of conflict
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Types [edit]

Concerns include AI taking over economies through workforce automation and taking over the world for its resources, eradicating the human race in the process. AI takeover is a major theme in sci-fi.

Automation of the economy [edit]

Main article: [Technological unemployment](#)

The traditional consensus among economists has been that technological progress does not cause long-term unemployment. However, recent innovation in the fields of robotics and artificial intelligence has raised worries that human labor will become obsolete, leaving people in various sectors without jobs to earn a living, leading to an economic crisis.^{[2][3][4][5]} Many small and medium size businesses may also be driven out of business if they won't be able to afford or licence the latest

- 1. AI is being used to do [insert surprising thing].**
- 2. Robots are going to take over our jobs.**
- 3. We should be afraid of AI.**
- 4. AI is racist/sexist/ableist/homophobic**

Artificial intelligence (AI)

Sam Levin in San Francisco

✉ @SamTLevin ⏤ Email

Thu 8 Sep 2016 18.42 EDT



21,122 685

⌚ This article is over 2 years old

A beauty contest was judged by AI and the robots didn't like dark skin

The first international beauty contest decided by an algorithm has sparked controversy after the results revealed one glaring factor linking the winners



▲ One expert says the results offer 'the perfect illustration of the problem' with machine bias. Photograph: Fabrizio Bensch/Reuters

The first international beauty contest judged by “machines” was supposed to use objective factors such as facial symmetry and wrinkles to identify the most attractive contestants. After [Beauty.AI](#) launched this year, roughly 6,000 people from more than 100 countries submitted photos in the hopes that artificial intelligence, supported by complex algorithms, would determine that their faces most closely resembled “human beauty”.

But when the results came in, the creators were dismayed to see that there was a glaring factor linking the winners: the robots did not like people with dark skin.

Out of 44 [winners](#), nearly all were white, a handful were Asian, and only one had dark skin. That’s despite the fact that, although the majority of [participants](#) were white, many people of color submitted photos, including

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- 4. AI is racist/sexist/ableist/homophobic**
- 5. The challenges of policy and governance around
AI**

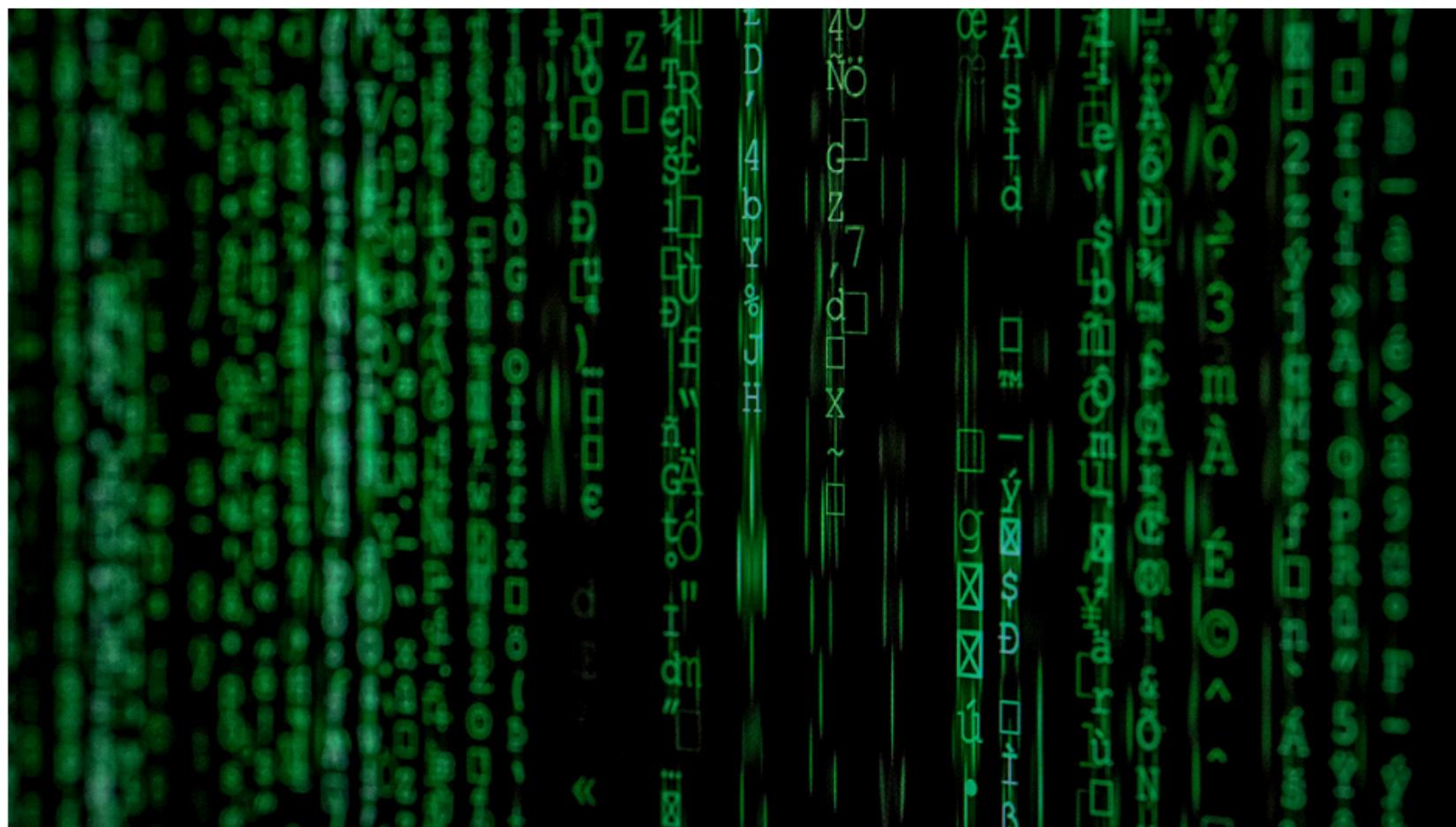
TECHNOLOGY

We Need Transparency in Algorithms, But Too Much Can Backfire

by Kartik Hosanagar and Vivian Jair

JULY 23, 2018 **UPDATED** JULY 25, 2018

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The advertisement features a photograph of a man in a blue shirt and a young boy wearing a green hard hat and a yellow safety vest. The man is smiling and has his arm around the boy. The boy is looking down at something they are holding together. The background is a blurred indoor setting. A white hand-drawn style frame surrounds the top half of the image. Inside this frame, the words 'AMERICAN EXPRESS' are written in a bold, sans-serif font. Below the name, a small rectangular box contains the text 'ROBERT MARCUS' and 'MEMBER SINCE 09'. In the bottom right corner of the main image, there is a large, stylized text overlay that reads 'DON'T do business WITHOUT IT' in a mix of serif and sans-serif fonts. To the left of this text, the American Express logo is displayed in its signature blue square with the words 'AMERICAN EXPRESS' in white. The overall composition suggests a connection between business funding and the success of small business owners like Robert Marcus.

What are we seeing?

Multiple things conflated (robots, AI)

Fear and confusion meet progress

Human labor is absent or removed

AI is treated as one mythical thing

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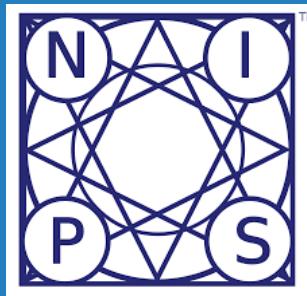
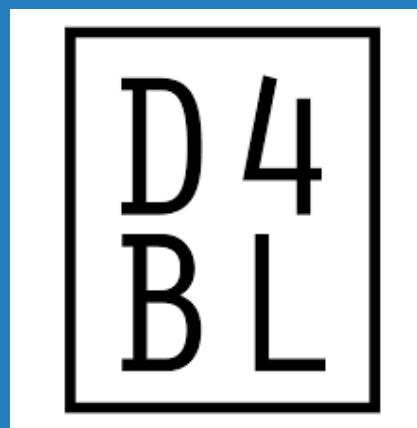
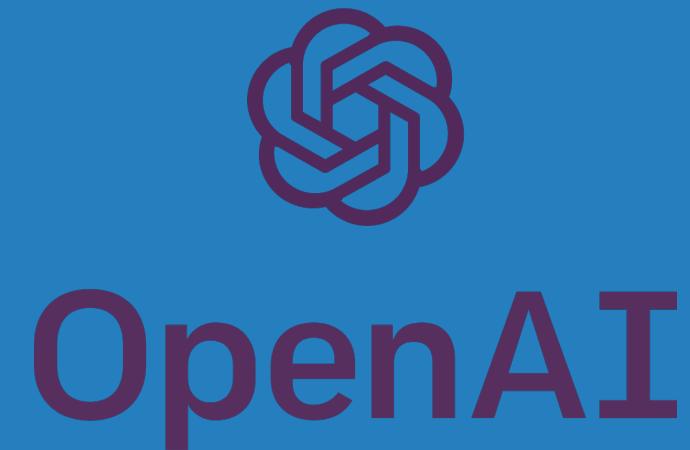
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Expert community



FAT / ML

The Ethics & Governance
of AI Initiative



AI issues according to expert community

Social Impact and Civic Society Issues³

– Corporate Power, Information, and the Attention Economy

³ David Robinson and Miranda Bogen, Automation & The Quantified Society

AI Being Used To Bust Those Netflix Account Moochers



Nicole Martin Contributor [\(i\)](#)

AI & Big Data

I write about technology, data and privacy.

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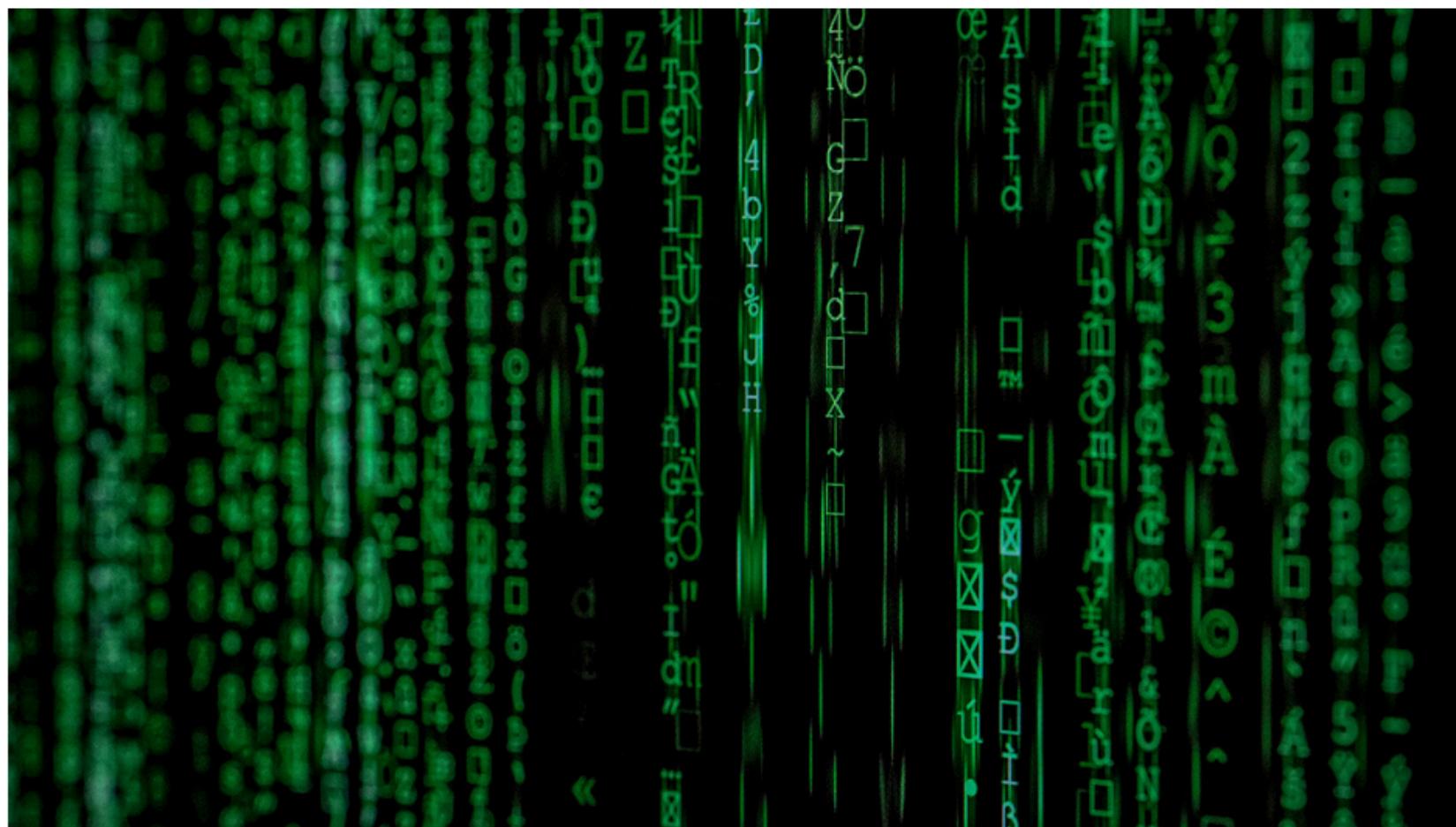
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Social Impact and Civic Society Issues³

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- Automated Decisions in the Public Sector
- Freedom, Transparency, and State Power

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- **"Substitution Myth"** - The assumption that when computers are used to automate a given task, the institutions and processes surrounding that task will remain the same.
- **"Automation bias"** - When people give undue weight to the information that comes from computers, through monitors and screens⁴

⁴ Nicholas Carr

Orienting Questions

- How do you talk about AI in a way that doesn't mythologize or
- Are there educational materials that tie together the most imoprtant technical aspects of this technology with the most pressing social aspects?
- What is at the heart of our concerns and excitement about AI?
- How can we impart a sense of possibility, rather than dystopic pessimism?

Important Messages

- AI represents a space of possibility
- AI is going to be increasingly present in our societies
- The problems AI-based technologies tap into are social, structural, and pre-existing
- Conversations about AI need to be in the hands of a wider audience

Meet with Arnab and Mimi