On April 24th, Timnit Gebru will be visiting Middlebury College to give a presentation on bias and social impacts of AI. Born and raised in Ethiopia, Timnit is an American computer scientist who works on algorithmic biases and data mining. She has been a vocal advocate for diversity in technology, she is the co-founder of Black in AI, a community of Black researchers working in AI, and she is the founder of the Distributed Artificial Intelligence Research Institute (DAIR). Timnit had a rough childhood ranging from her father’s death, feeling the Eritrean-Ethiopian war, being denied entry to the United States, and facing systematic racism in her early years of living in the United States. Her experiences led her to ethics in technology. In 2001, Timnit was accepted at Stanford University where she earned her Bachelor of Science and Master of Science degrees in electrical engineering and her PhD in computer vision. Shortly after her completing of her PhD, she joined Google where she co-led a team on the ethics of artificial intelligence. She studied the implications of artificial intelligence, looking to improve the ability of technology to do social good. However, just two years into her role, in December 2020, Gebru controversially departed from Google. Timnit had published a paper called “On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?” that covered the risks of large language models. In December 2020, Gebru’s employment ended after high Google managers asked her to either withdraw the paper or remove the names of all the Google employees from the paper. Gebru requested insight into their decision and warned that non-compliance would result in her departure. Google terminated her employment immediately, stating they were accepting her resignation. Aside from this controversy, Timnit has been widely recognized. She was named one of the World’s 50 Greatest Leaders by Fortune, won the 2019 AI Innovations Award in the category AI for Good for highlighting the significant problem of algorithmic bias in facial recognition, one of Nature’s ten people who shaped science in 2021, and one of Time’s most influential people in 2022.

Timnit Gebru discussed “faception” in the 2020 Fairness Accountability Transparency and Ethics in Computer Vision lecture. What is faception? She explains that it is the “first to-technology and first-to-market with proprietary computer vision and machine learning technology for profiling people and revealing their personality based only on their facial image”. It other words, it is an algorithm that can determine your IQ or see whether or not you are a terrorist based on one facial image. This type of technology is incredibly harmful because it incorrectly categorizes people, often in a negative way, and it negatively targets minorities and those in underrepresented groups. It’s technology like this that Gebru warns us about. It’s not just faception now. For example, the Hire Vue video intelligence that detects your verbal and non-verbal cues to determine whether you are qualified for a job. It determines whether you are ‘happy’ or ‘smart’, which are all very subjective descriptions. The Baltimore police also uses extensive facial recognition in an unconstitutional way. They used facial recognition to surveil people at protests and rallies – activities protected by the First Amendment. But doing such discourages political participation. They used facial recognition on social media photos to identify people at the Freddie Gray protests and target them for unnecessary arrests.

Digging a little bit deeper into facial recognition, Gebru discusses the usage of facial recognition in big tech corporations such as IBM and Google. She found that there were high error rates for darker-skinned women and light-skinned people. The reason for such was a lack of diversity in data sets that people use. A lot of data comes from exclusively western settings. Similarly, a lot of experiments exclusively use men. For example, in clinical trials, medicine is tested on men only. As a result, women tend to suffer more. The same is true with safety testing using dummies. A lot of the times, testing, especially for vehicle safety, use male dummies. In the real world, women are disproportionately harmed. There is also a lot of harm for transgender individuals, especially in gender recognition. There are issues with misgendering, and facial recognition also assumes that gender is binary.

On the bright side, there have been an increasing amount of pushback. Gebru is a part of an organization called Black in AI, which is “a place for sharing ideas, fostering collaboration, and discussing initiatives to increase the presence of Black people in the field of AI”. People are also combatting facial recognition through interesting makeup that fools facial recognition, fashion that people wear to fool facial recognition, and systems of refusal in engaging with this technology.

As used today, computer vision is harmful to underrepresented minorities and women because large corporations and privileged groups are using computer vision to gain power, profits, or control populations.

A question I have for Timnit: In your 2020 lecture you explain that “there are very few people who are black, especially in the Computer Vision community”. There are also very few women. Being a woman of color in the computer vision community, have you felt imposter syndrome? If so, how do you handle such feelings?

Question: Imposter syndrome? “Very few people who are black, especially in the Computer Vision community.”

Notes from 2020 Fairness Accountability Transparency and Ethics in Computer Vision:

* “Faception is first to-technology and first-to-market with proprietary computer vision and machine learning technology for profiling people and revealing their personality based only on their facial image.”
  + You look at someone’s face, do they have a “high IQ”, are they a “white-collar offender”, or are they a “terrorist.”
* “Hire Vue video intelligence.”
  + Automated interview. You are detected by emotions – verbal and non-verbal cues about how you did in the interview.
* Baltimore police using extensive face recognition.
  + Using face recognition to surveil people at protests and rallies – activities protected by the First Amendment – discourages political participation.
  + Baltimore Country used face recognition on social media photos to identify people at the Freddie Gray protests and target them for unnecessary or unrelated arrests.
* Facial recognition – looked at lighter vs. darker skinned people.
  + Higher error rates for darker-skinned people
  + Also, an issue of diversity in the data sets that people use.
    - A lot of info comes from a western setting.
  + A lot of experiments use men.
    - Like clinical trials – not tested on women.
    - Dummy vehicles use male dummies instead of women – so these things disproportionality harm women.
  + Also, a lot of harm for transgender individuals, especially in gender recognition. Misgendering or also assumes that gender is binary.
* Facial recognition used by law enforcement, but mostly surveilling black and brown communities.
  + People using facial recognition for negative and harmful uses.
* Also, these tools are sometimes used in the court of law, meaning that people trust these tools. But these tools are heavily biased and do not work all the time.
  + Can send the wrong person to jail.
* China is using AI to profile a minority.
* Amazon pushes facial recognition to police.
* Black in AI – a place for sharing ideas, fostering collaboration, and discussing initiatives to increase the presence of Black people in the field of AI.
  + Need structural and real representation.
* Fairness is not just about data sets or about math. It is about life and societal issues.
* People are combatting facial recognition.
  + Interesting makeup that fools facial recognition.
  + Fashion that people wear to fool facial recognition.
  + Systems of refusal in engaging with this technology.
* Our technology is mostly being used to target people who are most vulnerable.