# Is AI biased?

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Etică și integritate academică

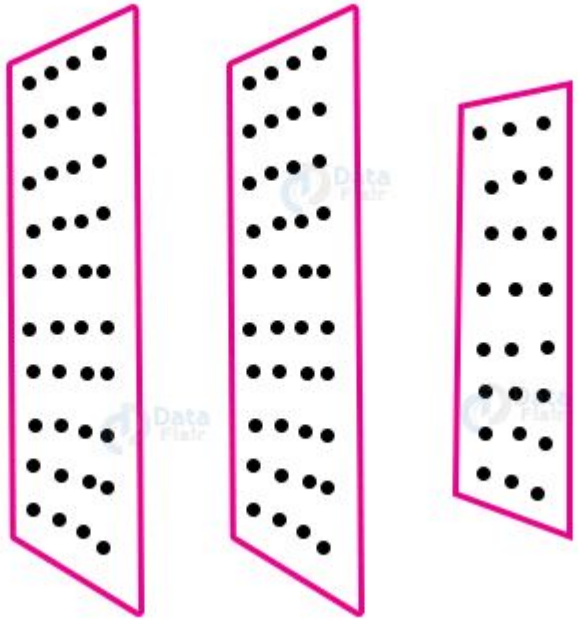
# Ice breaker: How many machine learning models are active around you right now?

How I usually introduce someone to machine learning

Live footage of me training models

CAT

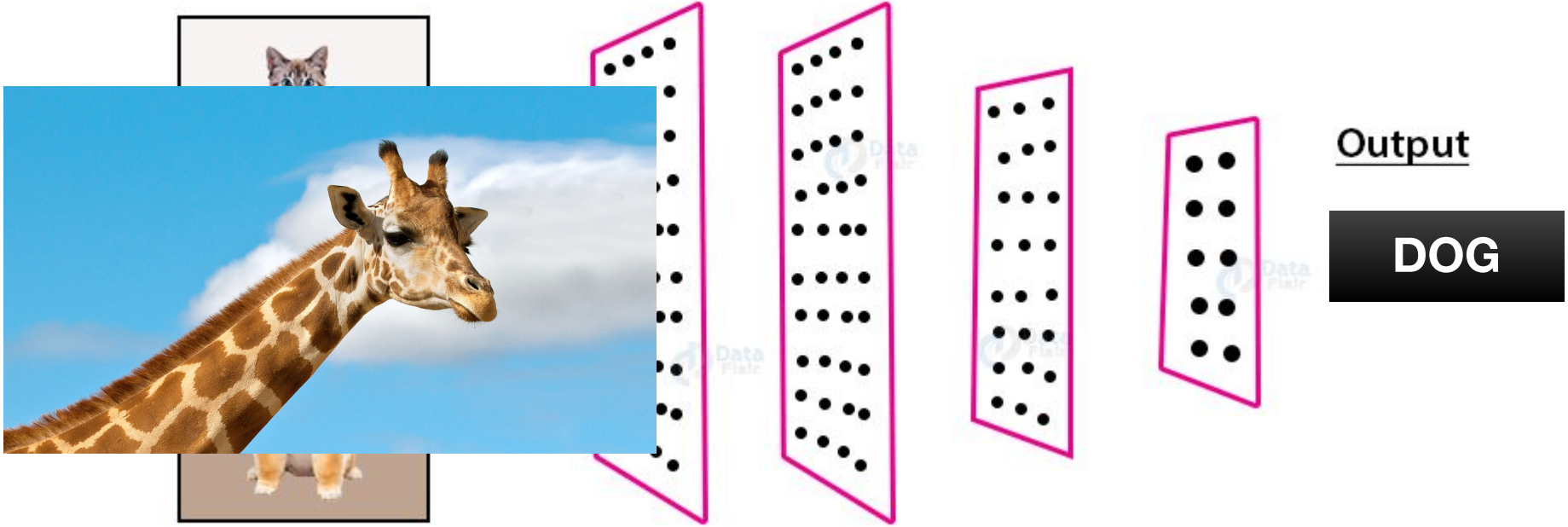
DOG



Output

CAT!

Nice and easy classification; Ai Is sO sMarT!!1!

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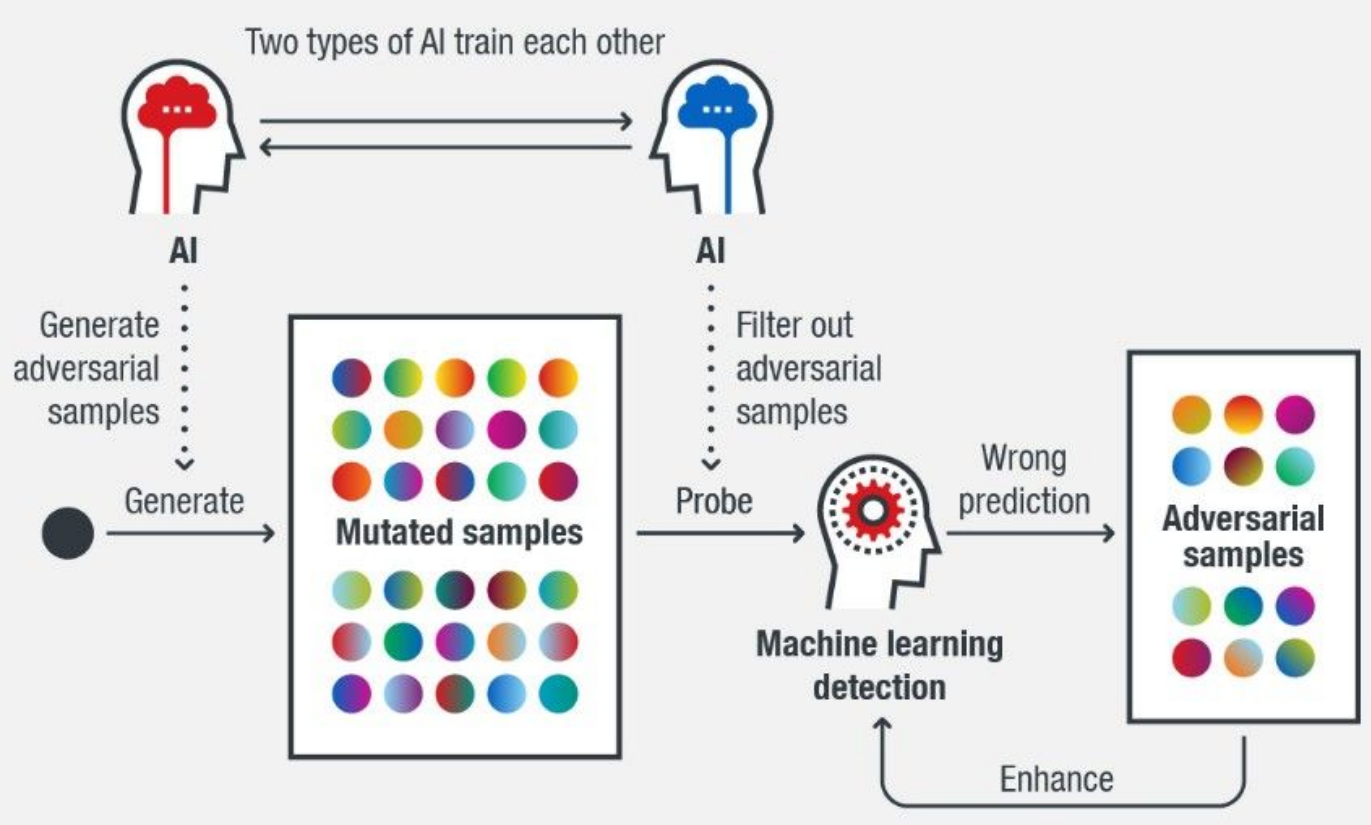



On a tangent: adversarial attacks

[Source: Why deep-learning AIs are so easy to fool, Nature]

# Three Small Stickers in Intersection Can Cause Tesla Autopilot to Swerve Into Wrong Lane

<<Their most dramatic feat: sending the car careening into the oncoming traffic lane by placing a series of small stickers on the road.>>

On a tangent: adversarial attacks

**Hackers trick a Tesla into veering into the wrong lane**

<<the real world is very big, and the long tail of very unlikely situations is always out there, waiting to be stepped on>>

Speed Limit (45)

Source: Spectrum IEEE, 01.04.2019
Source: Tencent Key Security Lab

# So.. is AI biased?

# Or rather, are humans biased?

An analysis of more than 8,600 companies in 49 countries showed women held 16.9% of all global board seats in 2018, up from 15.0% in 2016.

Google's Diversity Stats Are Still Very Dismal

The share of Google employees who are female, black, or Latinx barely budged last year, as the company was riven by internal debate over its diversity policies.

Of the 2,765 MSCI ASWI Index companies, 20.0% of directors were women in 2019, up from 17.9% in 2018.

**yes lmao**

Only 5.3% of board chair positions were held by women in 2018

Uber Is Under Federal Investigation for Gender Discrimination, Reports Say


**Wired on Google representation, based on official Google 2018 report**

Times on Uber scandal

Deloitte Global Center for Corporate Governance, "Women in the Boardroom: A Global Perspective, Sixth Edition," (2019)

Olga Emelianova and Christina Milhomem, *Women on Boards 2019 Progress Report* (MSCI, December 2019).

# Tangent: Data is an old problem

Psychology Studies Biased toward Western Undergrads

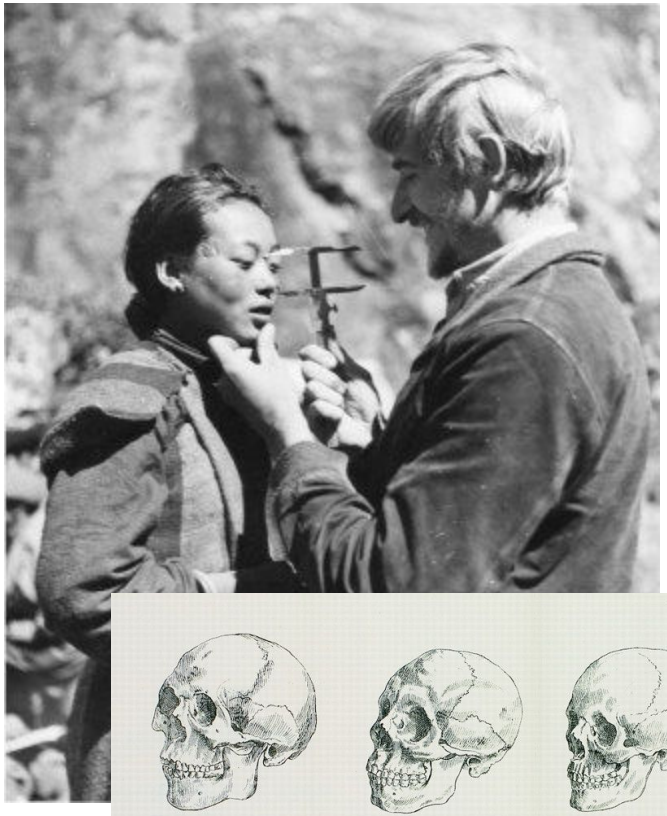
Scientific American Podcast, 2010 (Fun Fact Magazine was founded August 28, 1845)

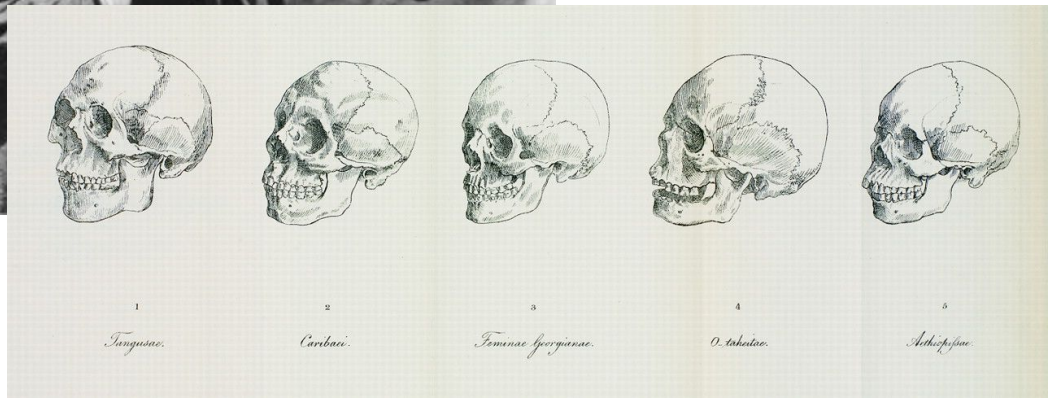
A recent and exhaustive meta-analysis of scientific data shows that top psychology studies tend to make conclusions about human nature based on samples taken solely from Western undergraduate students.

Use of proxies: socioeconomic background, education, and zip code, act as proxies.

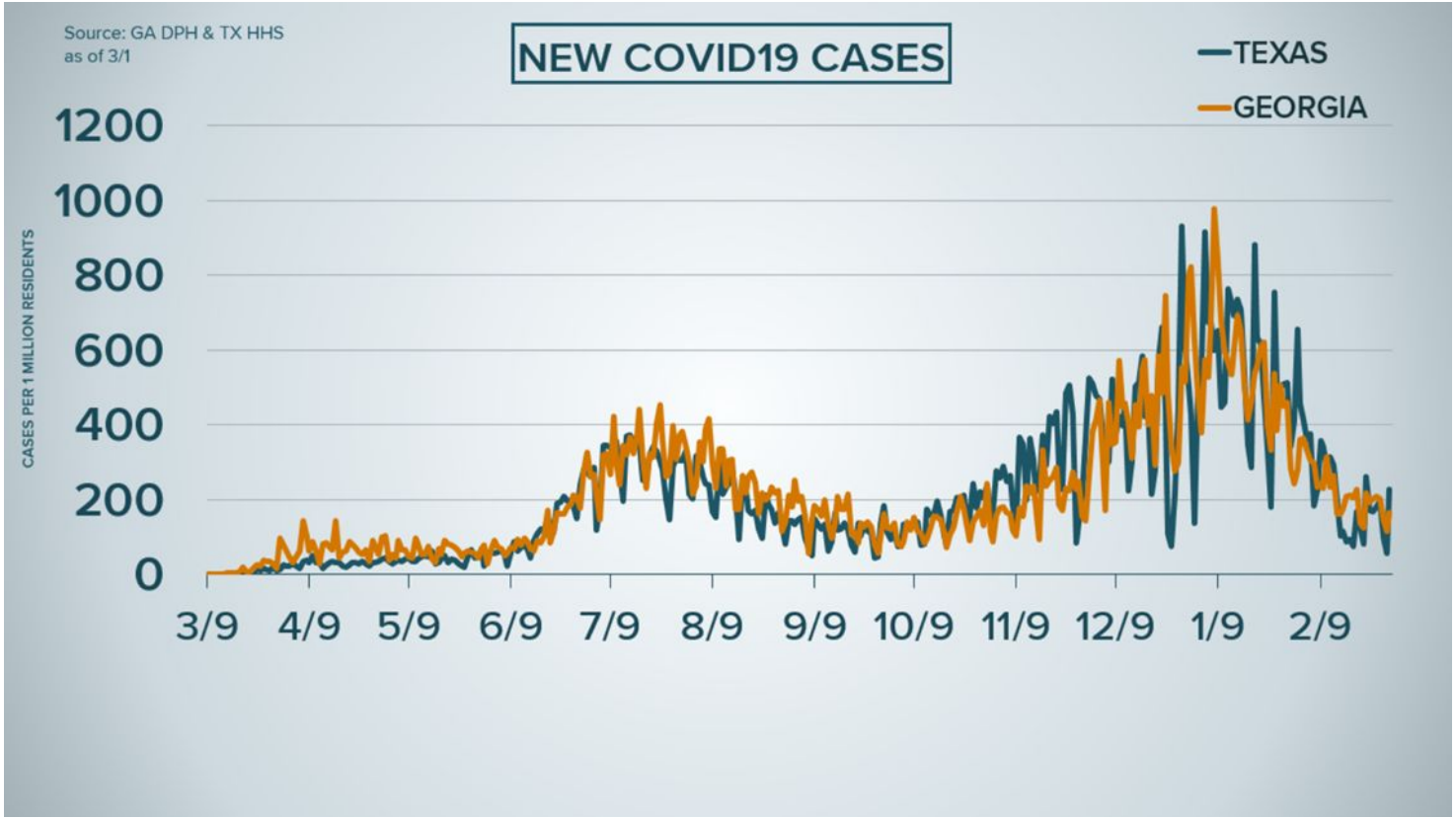
Predictive justice will  be very predictable
Source: MIT Technology Review

One algorithm, which failed to identify the right person in 1 out of 10 encounters with Caucasian subjects, failed nearly twice as often when the photo was of an African American.






**(Cherrypicked) Data has always been used the “enhance our argument” - Use of Nazis of craniology to justify their agenda.**




Intermission: Were masks useless in the pandemic?

# Age Bias

# Exercise time: Imagine you are data scientists at Amazon.

Based on real facts

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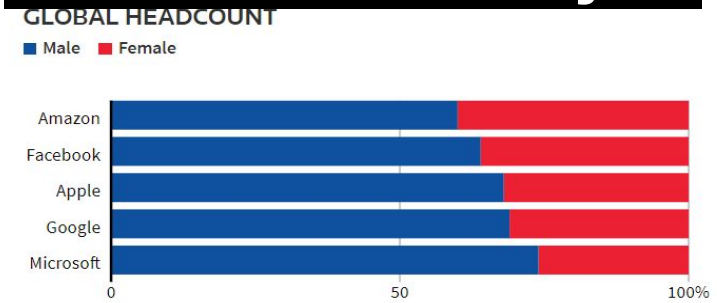
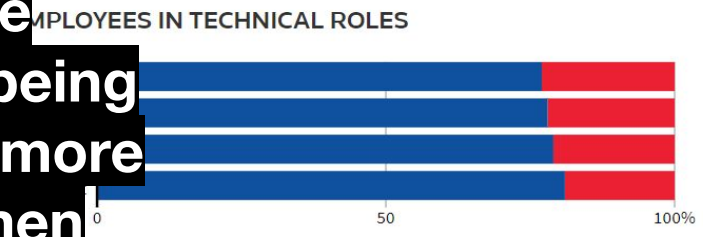
Based on real facts

Women receive “negative personality criticism”, such as being called bossy or told to “watch their tone” in around 75% of performance reviews. Men, on the other hand, rarely do

Women receive 2.5 times the amount of feedback men do about aggressive communication styles




Women are described as being “abrasive” far more often than men

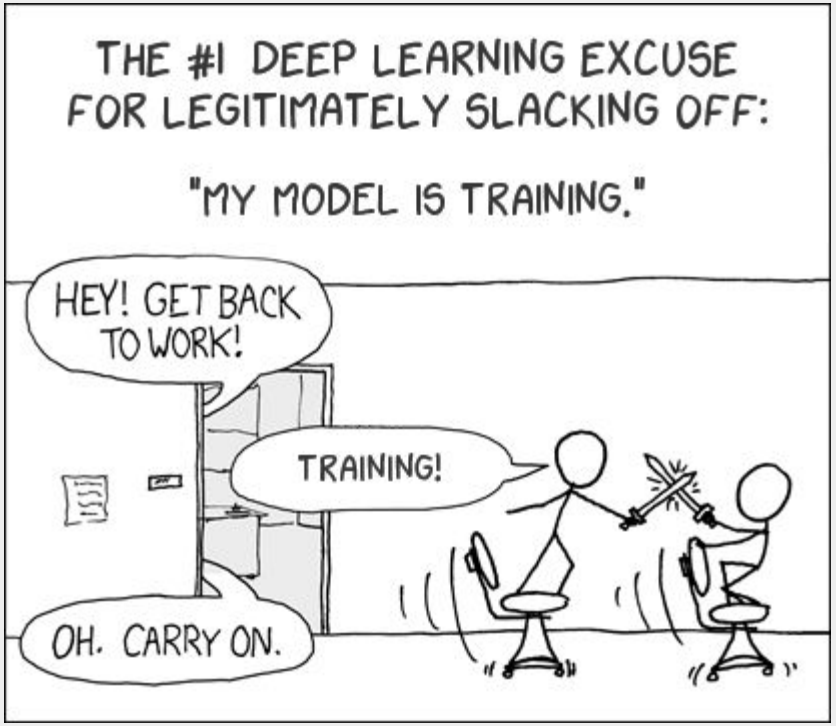



All employees are equal, but some are more equal than others: dominance, agreeableness, and status inconsistency among men and women. European Journal of Work and Organisational Psychology, 25(3), 430-446

Based on real facts

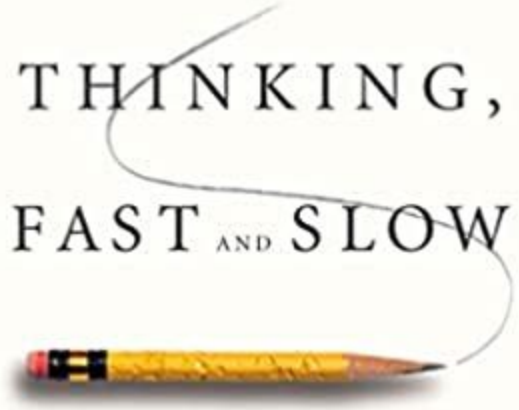
# Conclusions

Can we tackle this issue?



THE *NEW YORK TIMES* BESTSELLER

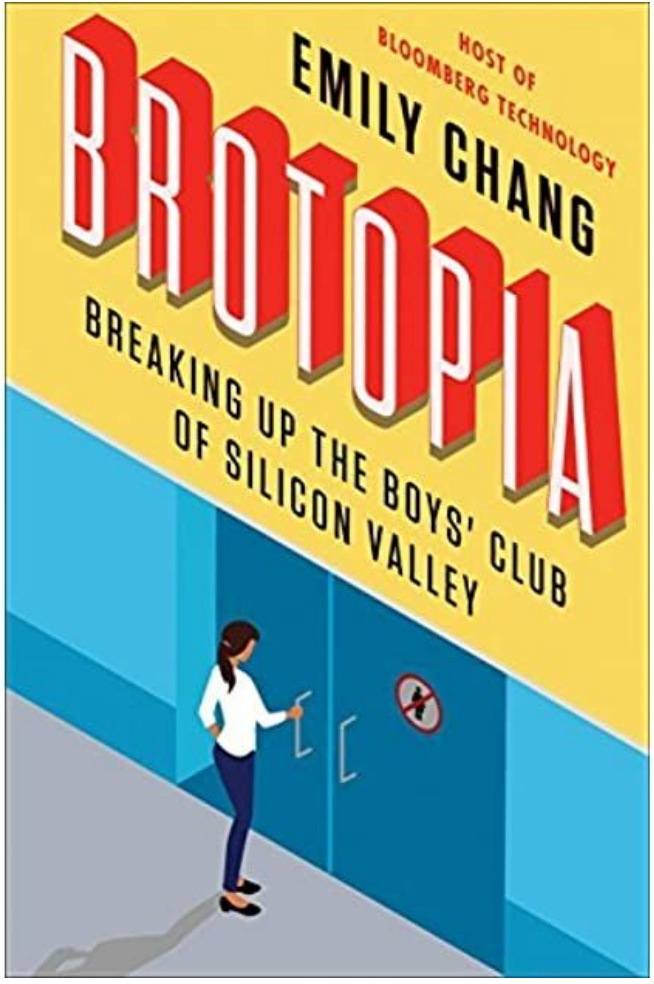
# THINKING, FAST AND SLOW

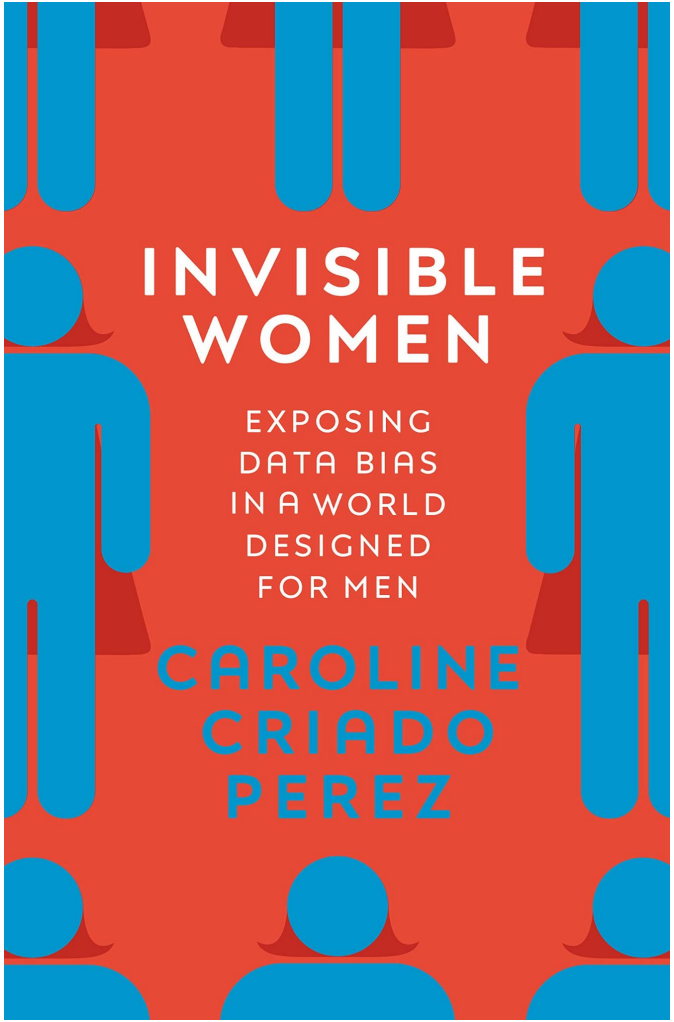


## DANIEL KAHNEMAN

WINNER OF THE NOBEL PRIZE IN ECONOMICS

"[A] masterpiece . . . This is one of the greatest and most engaging collections of insights into the human mind I have read." —WILLIAM EASTERLY, *Financial Times*


HOST OF
BLOOMBERG TECHNOLOGY
EMILY CHANG
BROTOPIA
BREAKING UP THE BOYS' CLUB
OF SILICON VALLEY


INVISIBLE WOMEN
EXPOSING DATA BIAS IN A WORLD DESIGNED FOR MEN
CAROLINE CRIADO PEREZ