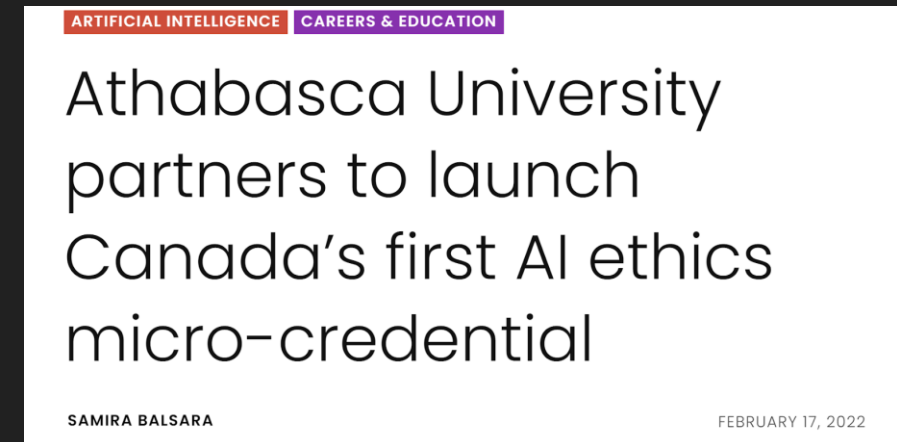


AI Ethics & Data Dilemmas



Open Data Day, March 4, 2023

My AI ethics journey...





When we think about AI...

- We envision killer robots
- We think AI is “superintelligent”
- ChatGPT

An aerial night view of a city skyline, likely New York City, with numerous skyscrapers illuminated. Overlaid on the city are glowing yellow and white arcs and lines that represent digital connections and data flow, creating a sense of a global network.

AI is already part of the digital infrastructure.


- Online shopping and ads, web search
- Internet of Things – smart phones, digital assistants, smart homes infrastructure, smart appliances
- Recommendation systems
- Decision support systems in business
- Increasingly ubiquitous

Today's AI is
boring comparison
to *The Terminator*.
Yet it's causing
real harm.




It's used to
surveil and
classify us.






It judges if you
are a good “fit”
for a job, a loan,
a school or other
limited resource.





It informs
culture, what
we think and
our behaviour.





It's making
predictions
about YOU.



A real-life scary movie – Coded Bias



[illegible]



Five AI Ethics principles:

Autonomy

Justice

Beneficence

Non-Maleficence

Explainability

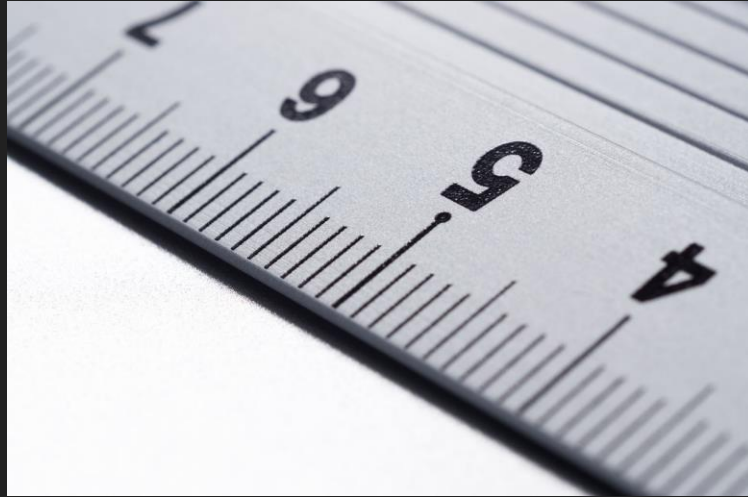
The background of the slide is a dark blue gradient. It features a complex network of white and light blue lines and dots, resembling a molecular structure or a data network. The lines connect various points, some of which are highlighted with brighter blue dots. The overall effect is a sense of interconnectedness and complexity.

How does this happen?

Data, Models and People

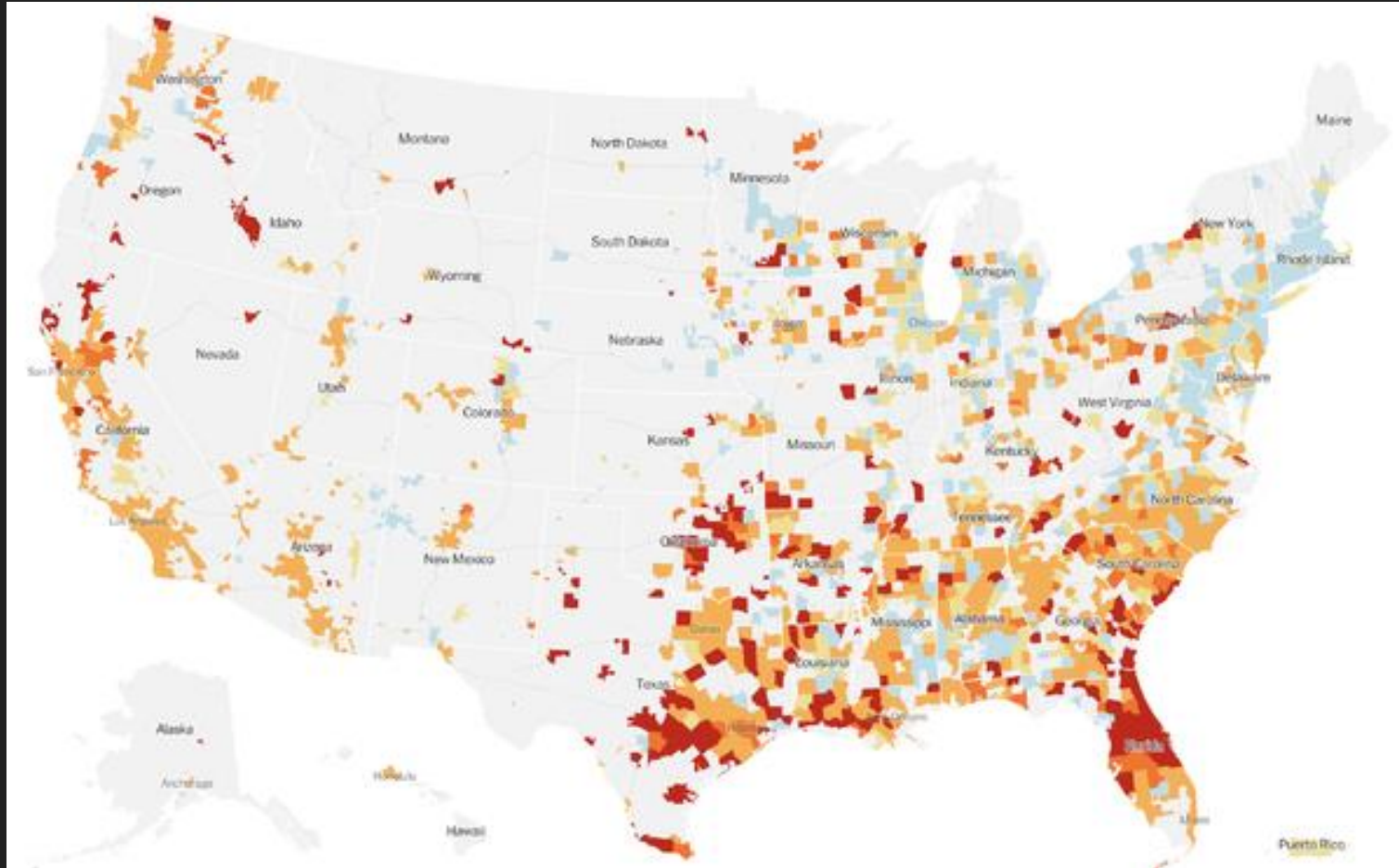
- Data
 - Historical bias, unrepresentative, poorly labelled
 - Privacy issues, inadequate consent
- Models
 - “Math is not neutral” - Cathy O’Neil
 - Affordances in design, feature engineering
- People
 - What problems we choose to solve, who set the agenda
 - Who builds the technology
 - Power dynamics/Inequity

The Devil is in the Data



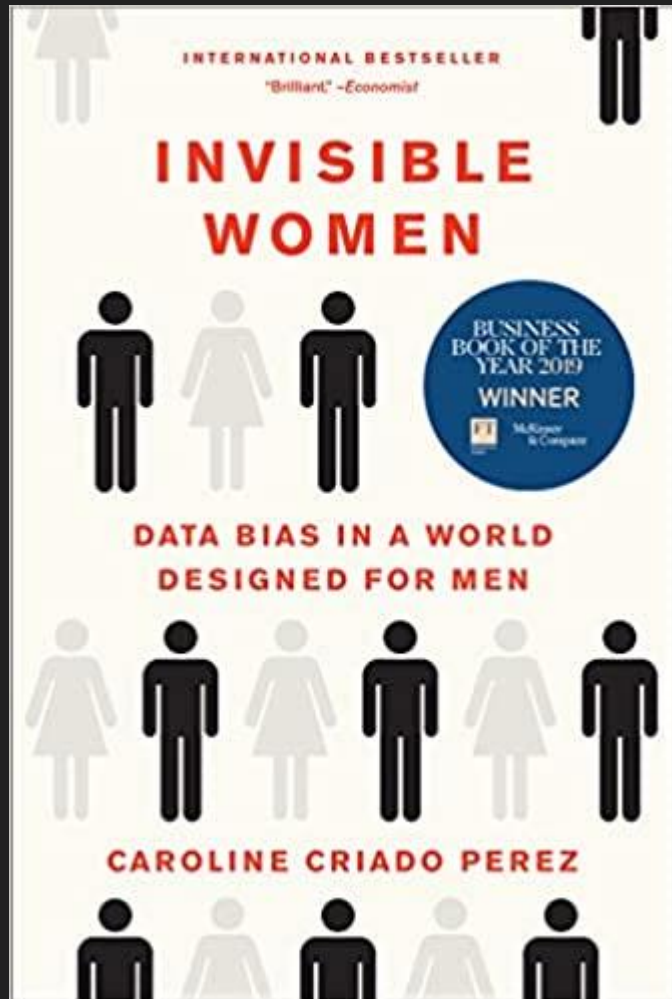
Data is value-laden.

Counting is political (Data-ism, Steven Lohr)



Source: New York Times

Who is not counted can be made invisible



Source: Amazon

MACLEAN'S Authors News Politics Economy Education Society They Were Loved MORE

OPINION

Canada's dire need for better race-based data

Denise Balkissoon: It's clear that COVID-19 and racism are a dangerous combination. We need better information about how Indigenous, Black and other racialized people interact with Canadian health-care systems.

By Denise Balkissoon
June 8, 2020

A photograph showing a healthcare worker in a blue protective suit and mask adjusting a face mask on a patient. The patient is wearing a black beanie and a grey jacket. The background is a blue wall.



Source:
<https://maryloudriedger2.wordpress.com/2019/04/15/why-are-most-canadian-prime-ministers-old-white-men/>

MLK

Visual Dictionary

g computers to recognize objects

Download dataset Download poster Publications

whore Search word

There is 1 match

7330) Whore [Hide definition](#)

Click on the image if you think it is correct (a green frame will appear), and twice if it is wrong. For images that you are not sure leave the black frame around the image.

Definition (from Wordnet)
 (3) prostitute, cocotte, whore, harlot, bawd, tart, cyprian, fancy woman, working girl, sporting lady, lady of pleasure, woman of the street -- (a woman who engages in sexual intercourse for money)

Wikipedia: open wikipedia page

MIT pulls down Racist Dataset for training AI after 14 years

Click to submit selection

Next ▶

submitted 0 labels.
 can now recognize 2243117 images

Visual dictionary: Visualization of 53,464 english nouns arranged by meaning. Each tile shows the average color of the images that correspond to each term.

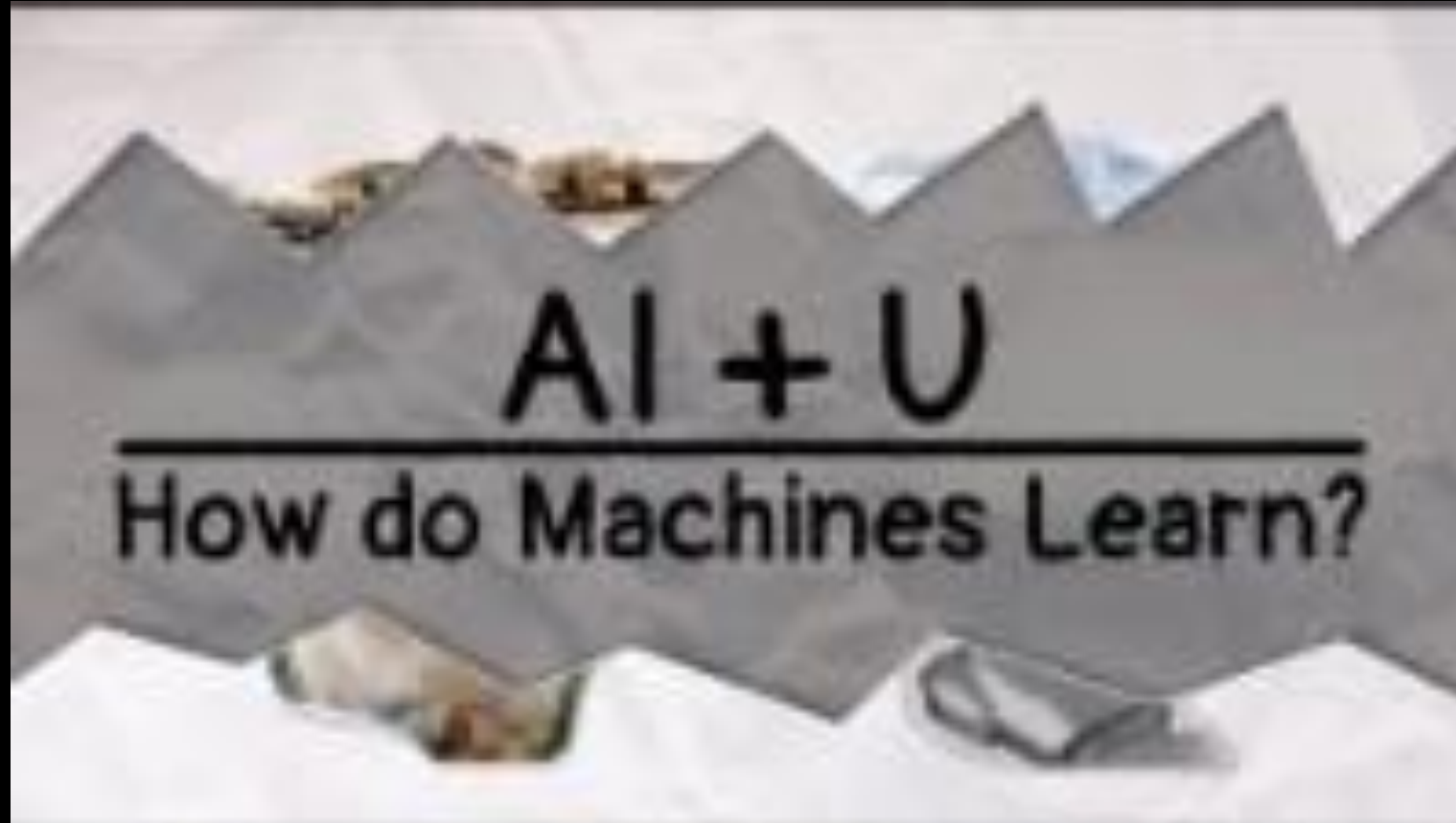
Confidence

We can find bias in instruments used to gather data



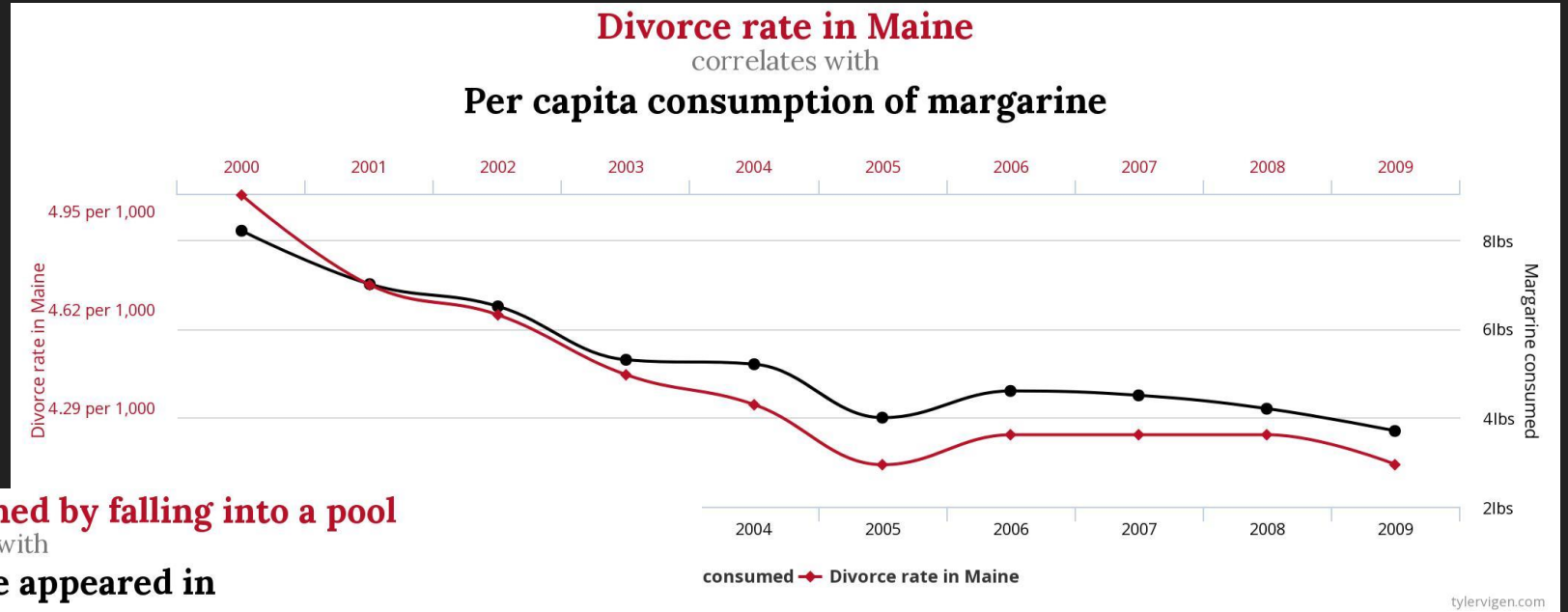
Source: <https://labblog.uofmhealth.org/rounds/biased-tech-could-determine-who-gets-life-saving-therapy>

How do machines learn?

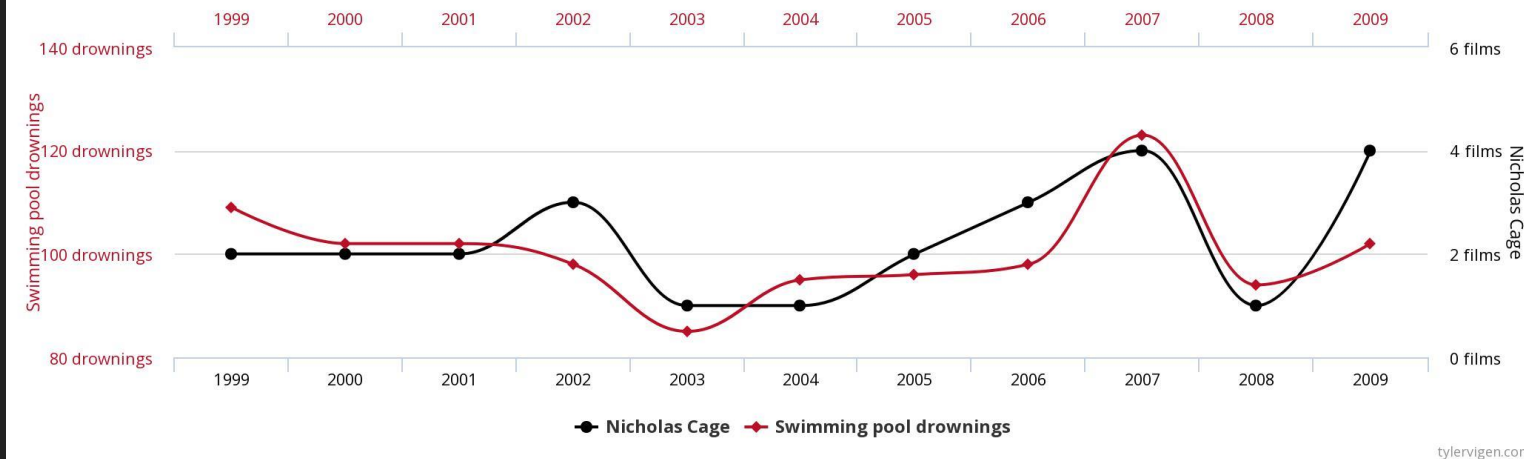


Machine Learning is about
Pattern Recognition .

Humorous examples of spurious correlations...

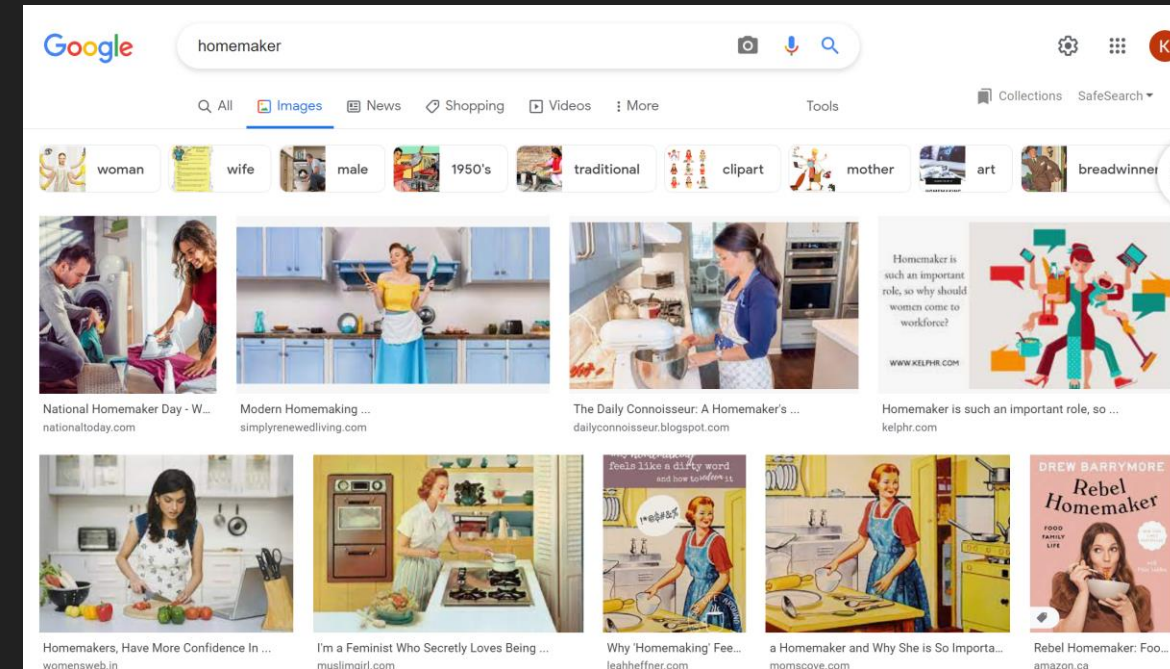
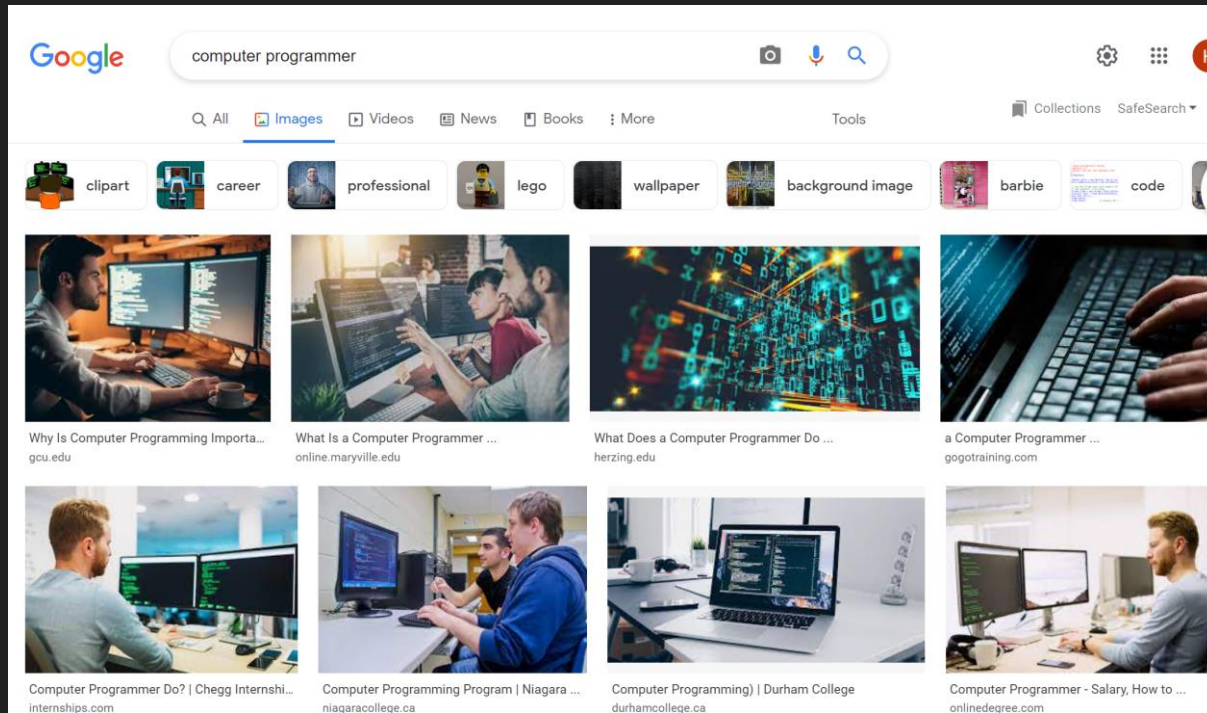


Number of people who drowned by falling into a pool
correlates with
Films Nicolas Cage appeared in



Man is to Computer Programmer as Woman is to Homemaker?

Debiasing Word Embeddings (Bolukbasi et al)



Words of a feather, flock together

“You shall know a word
by the company it keeps”
– JR Firth, Linguist



The Return of the Face

Physiognomy is a discarded 19th-century pseudoscience. Why can't we stop practicing it?

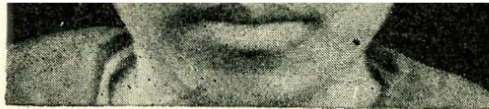


Fig. 33. Donne omicide - Conjugicida.

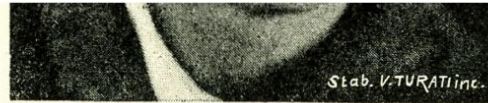


Fig. 36. Tipo infantile (arr. di sviluppo) - Assassino (d'anni 26).



Fig. 6. Tipo pazzesco - Assassino.

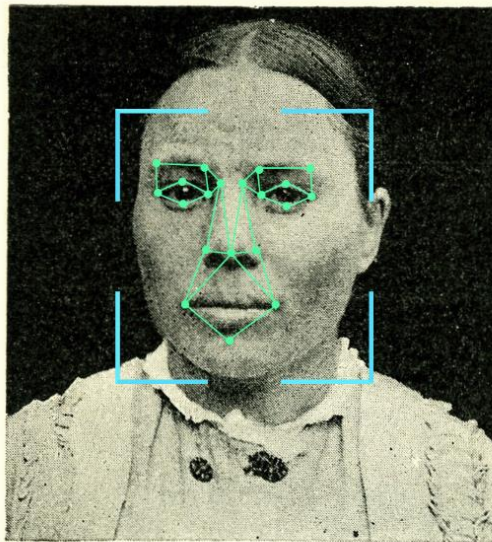


Fig. 31. Donne omicide - Omicida.

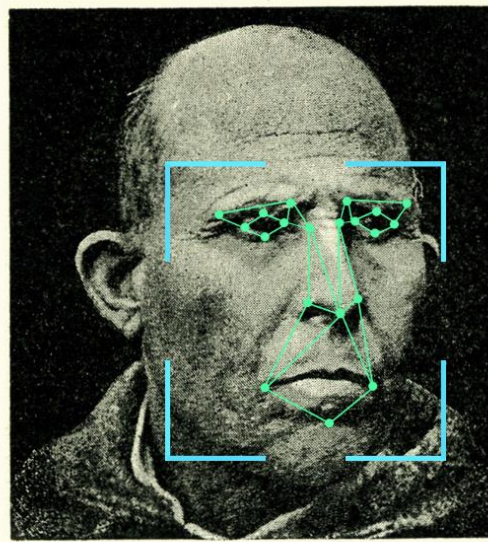


Fig. 1. Tipo scimmiesco - Omicida-grassatore.

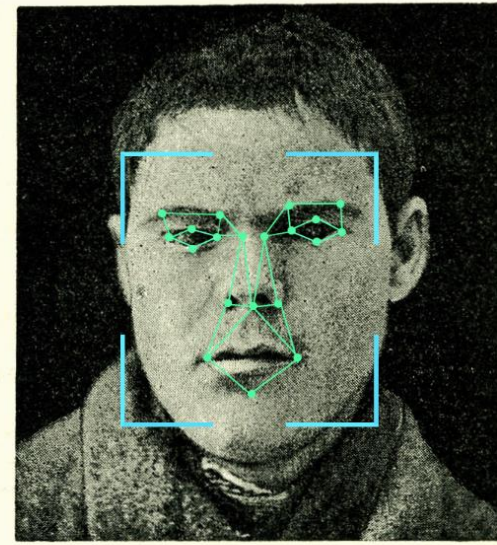


Fig. 4. Tipo degenerato - Parricida-ladro.

Reading Emotions



Zoom Wants To Track Your Emotions, Here's What You Should Know

Zoom is reportedly working on a product that tracks user emotions in a video call, but experts have raised concerns over its privacy implications.

BY NADEEM SARWAR
PUBLISHED MAY 16, 2022



This is not just about
technology.

It's about people and power.

Surveillance Capitalism

*“Every breath you take
And every move you make
Every bond you break
Every step you take
I'll be watching you
Every single day
And every word you say
Every game you play
Every night you stay
I'll be watching you”*

-The Police, Synchronicity (1983)



Source: <https://www.vice.com/en/article/bjw9e8/inside-rings-quest-to-become-law-enforcements-best-friend>

Illustration: Lia Kantrowitz

Source: <https://www.wired.co.uk/article/google-chrome-browser-data>

Speaking up has consequences

Google hired Timnit Gebru to be an outspoken critic of unethical AI. Then she was fired for it.

Gebru is one of the most high-profile Black women in her field and a powerful voice in the new field of ethical AI, which seeks to identify issues around bias, fairness, and responsibility.



Data Dilemmas



Ethical Issues with Open Data

- Data can reflect bias in collection
- Data can be non-representative (ie 311 – whiter and wealthier)
- Publishing a dataset isn't sufficient for equitable access
- Open data is not always useful for stakeholders
- Data sovereignty and issues around ownership
- How do we uphold privacy in light of reidentification?

What should be rendered as data? What's off limits? Where do we draw these lines?

How do we balance individual
rights with collective rights?

How can we use data to
advance societal good?

If data is an asset, whose asset is it? Who should be compensated and how? Who makes those decisions?

Where do we go
from here?



Data, Models and People

- Data
 - Data governance principles, understanding our data
 - Have we tested it with our model for bias?
 - Independent audit
- Models
 - What tradeoffs did we make?
 - How have our design choices upheld ethical principles?
- People
 - Who is helped and who may be harmed? Stakeholder analysis.
 - Funding, power dynamics, diversity - who is on the team? What value trade offs are we making?
 - Question vendors



Source: Amazon



City of Edmonton – education & consultations



What is data ethics?


Data ethics is an area of applied ethics that can help ensure data is used responsibly and in the best interests of individuals, society and the environment.


The ways in which we choose to engage with and use data at the City of Edmonton require ethical considerations so that we can make good choices that align with City values.

"Passion provides purpose but data drives decisions."



- Andy Dunn-

Canada's first AI Ethics micro-credential

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 <p>DELIVERY Online, On-Demand</p>	 <p>INSTRUCTION Self-paced</p>	 <p>COST \$2,780</p>

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How will we choose to build and use AI?



Thanks & Questions

- Sign up for our monthly newsletter at ethicallyalignedai.com
- Learn more about the micro-credential at powered.athabascau.ca
- Connect with me at <https://www.linkedin.com/in/katrina-reganingram/>

