

# Codes of Conduct

Ethical Data Science

Dr Zak Varty

# Data Science: Miracle Cure and Sexiest Job

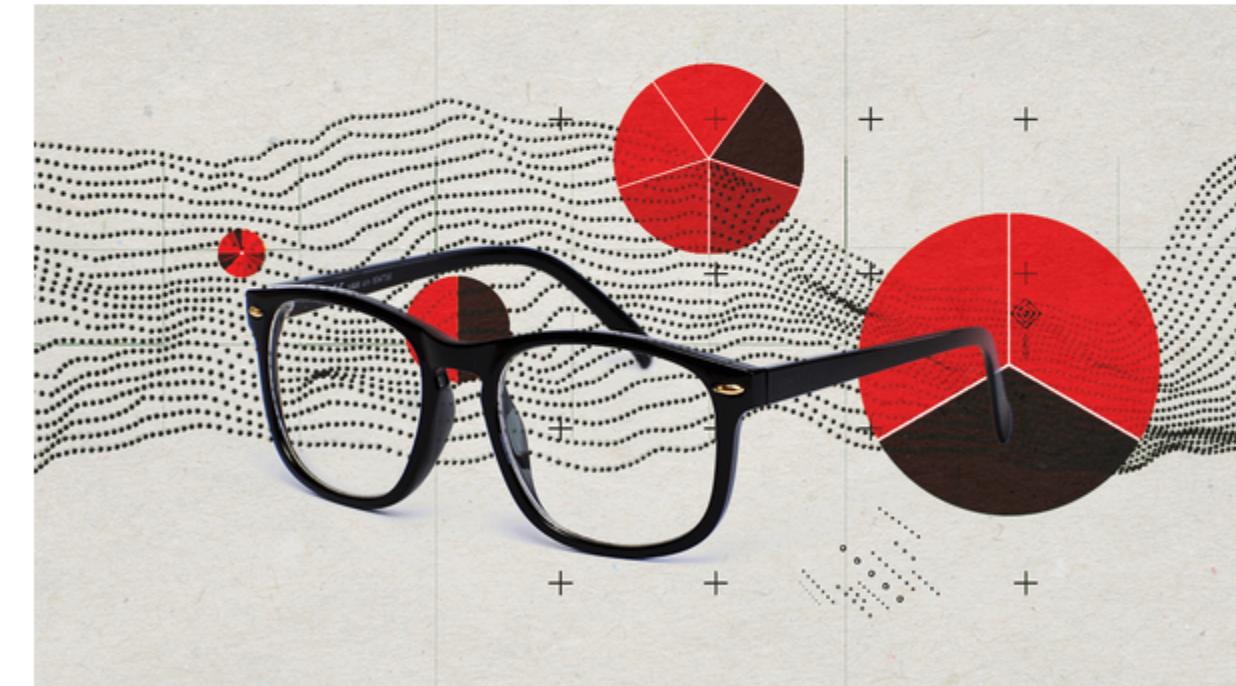
Data Science / ML / AI applications:

- Health and Social care
- Ecology and Conservation
- Environmental Science
- Business and Finance
- Government and Policy Development

## Is Data Scientist Still the Sexiest Job of the 21st Century?

by Thomas H. Davenport and DJ Patil

July 15, 2022



HBR Staff/StudioM1/Moritz Otto/Getty Images

# What could go wrong?

## Facial recognition fails on race, government study says

⌚ 20 December 2019

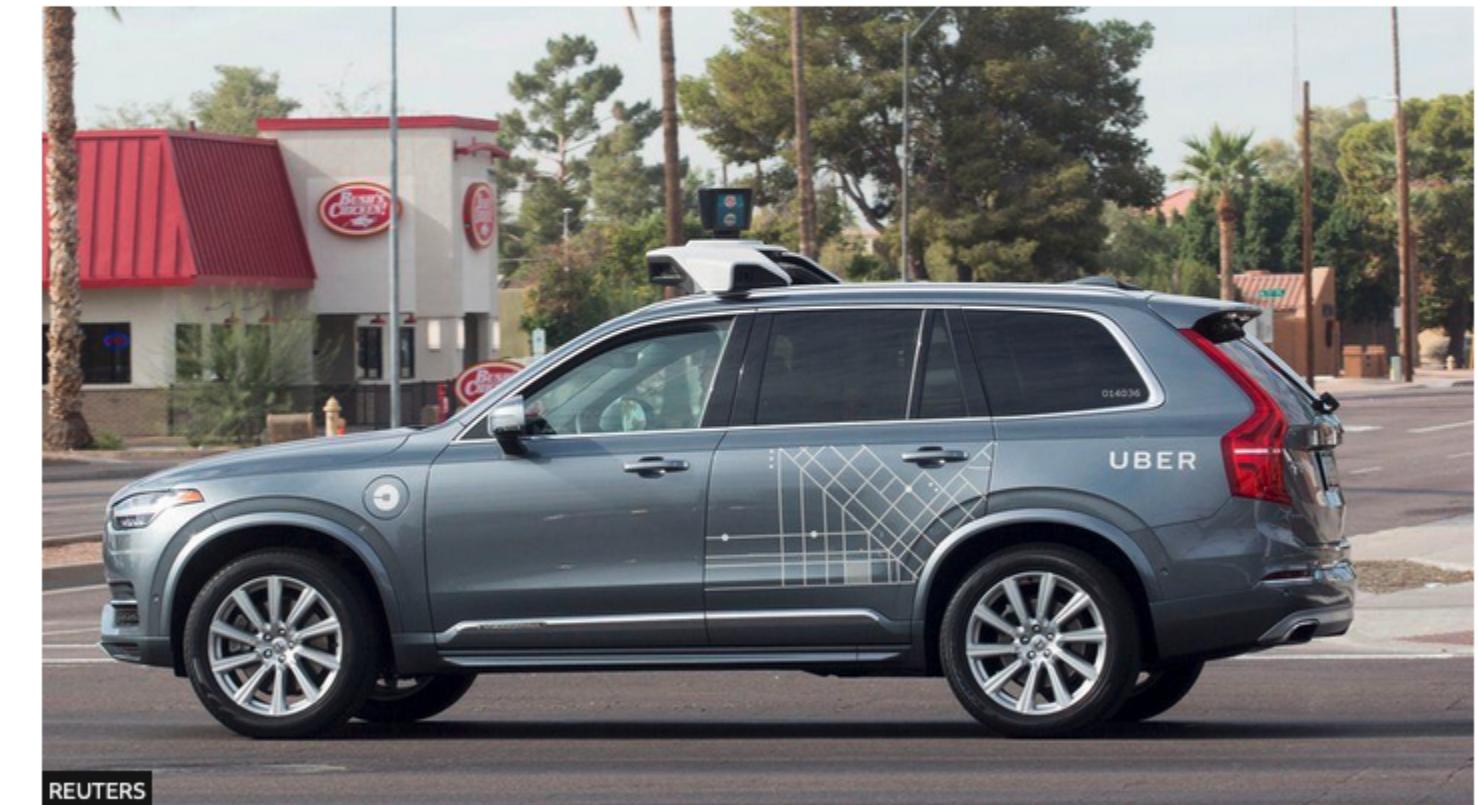


Facial recognition tools are increasingly being used by police forces

A US government study suggests facial recognition algorithms are far less accurate at identifying African-American and Asian faces compared to Caucasian faces.

## Uber's self-driving operator charged over fatal crash

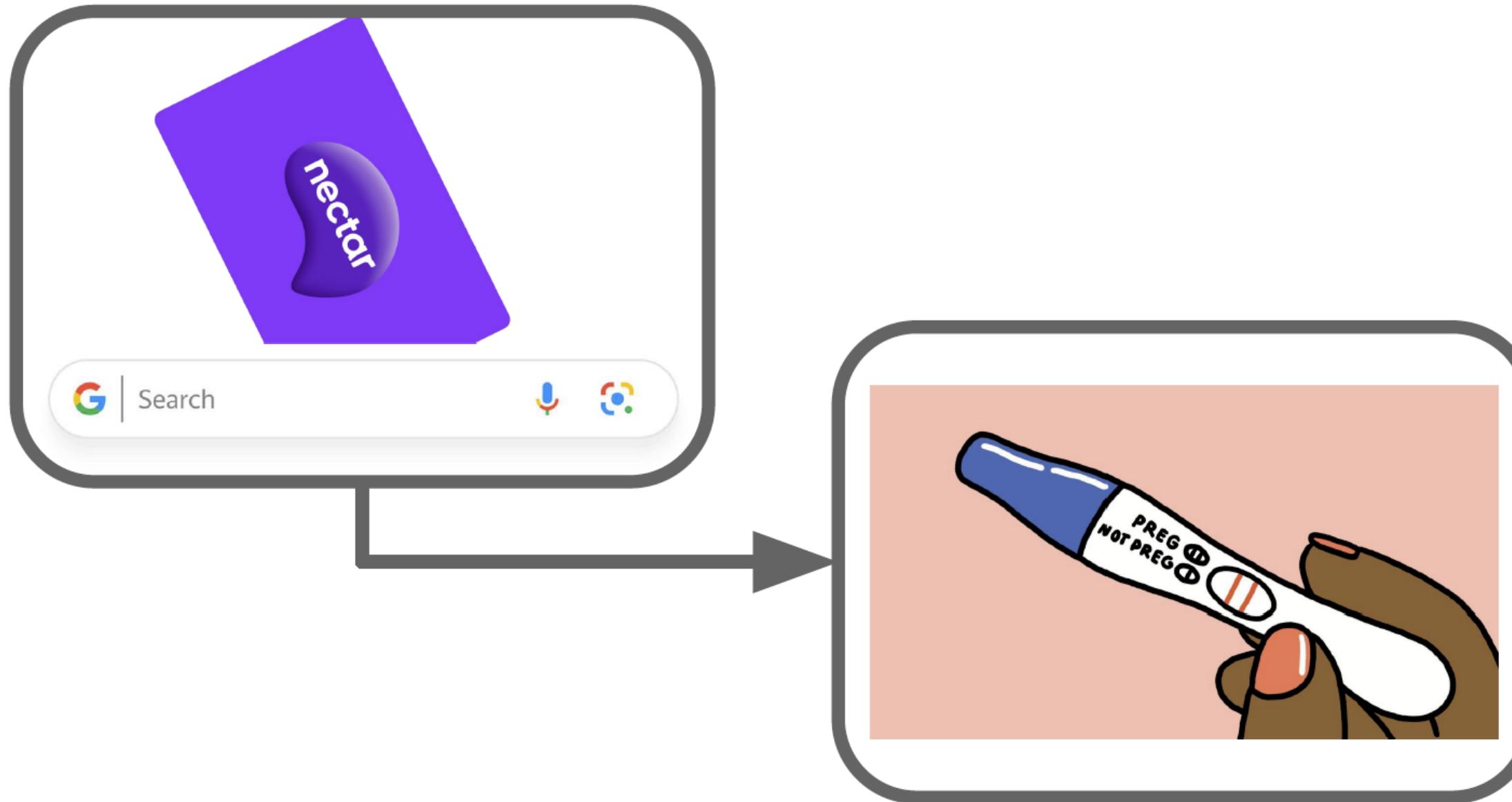
⌚ 16 September 2020



The self-driving Volvo hit a pedestrian at 39mph, despite the presence of a safety driver

The back-up driver of an Uber self-driving car that killed a pedestrian has been charged with negligent homicide.

# That's not my type of data science ...



# Technological Adoption Relies on Public Trust

Other professions have strict **codes of conduct** and are **legally liable** for the outcomes of their work:

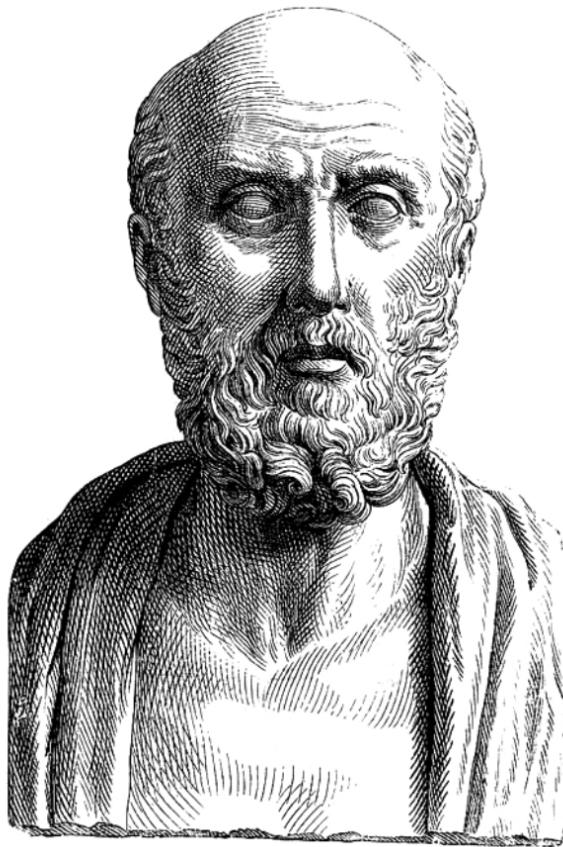
- Doctors
- Pharmaceutical companies
- Lawyers
- Civil and systems Engineers
- ...



The collapsed 35W bridge in Minneapolis seen on August 2, 2007.  
*Morry Gash/AP*

Thirteen people were killed and 145 injured during the Interstate 35W bridge collapse in 2007.

# Hippocratic Oath



Bust of Hippocrates by an unidentified engraver.  
(Public domain via Wikimedia Commons).

## Do No Harm:

Doctors around the world swear a version of the Hippocratic oath, originating in 400BCE, which introduced the principles of medical confidentiality and non-maleficence.

## Corporate Oaths:

Google's original internal code of conduct started with the phrase 'Don't be evil'. This was later rephrased to 'You can make money without being evil'.

# A Hippocratic Oath for Data Scientists

≡ WIRED

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## To work for society, data scientists need a hippocratic oath with teeth

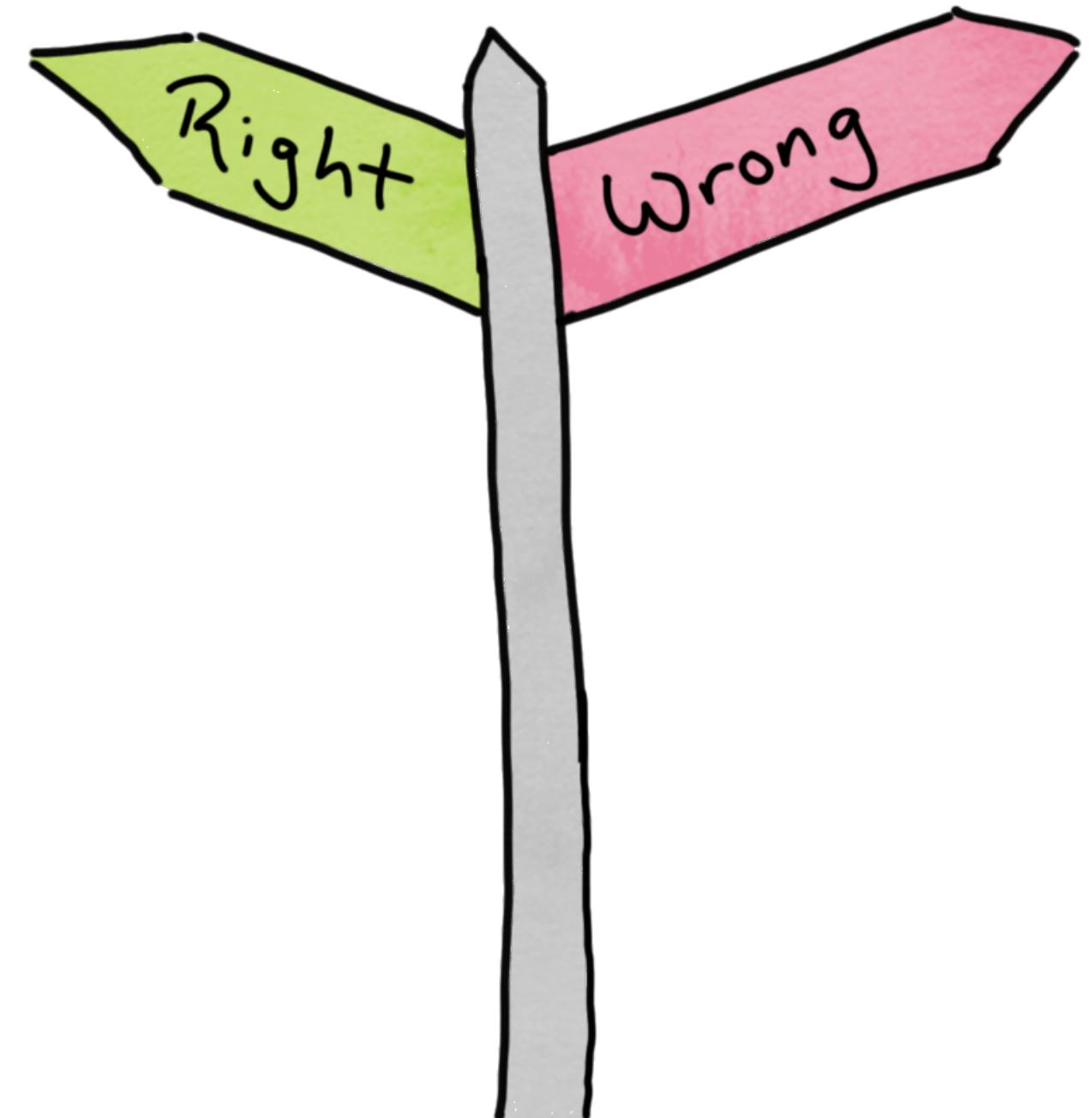
Data scientists need to understand the weight of their influence and the limitations of their wisdom, says Cathy O'Neil. The *Weapons of Math Destruction* author lays out her plan for an effective system

In Weapons of Math Destruction (2016), Cathy O'Neil was among the first authors to make a call for a Hippocratic oath for data scientists

# Doing the right thing

Neither obvious or easy:

- Lack of understanding,
- Unanticipated consequences
- Incentive structures,
- Inherent trade-offs.



# Codes of Conduct

Membership of a professional body can give accountability and support.

- Codes of conduct
- External accountability
- External support (p2p and organisational)
- Training and professional development

Currently no professional body dedicated to data science: [RSS](#), [OR Society](#), [SIAM](#).

# Wrapping Up

Data Science is still in it's adolescence:

- Widespread use means lots of potential for harm
- Learning from the mistakes and successes of other disciplines.

Being associated with a professional body can help to:

- Formalise data science as it's own discipline
- Incentivise good practices

We must remain alert to the potential dangers posed by our work.

