



# Data Bias: designing for defaults.

peerigon 

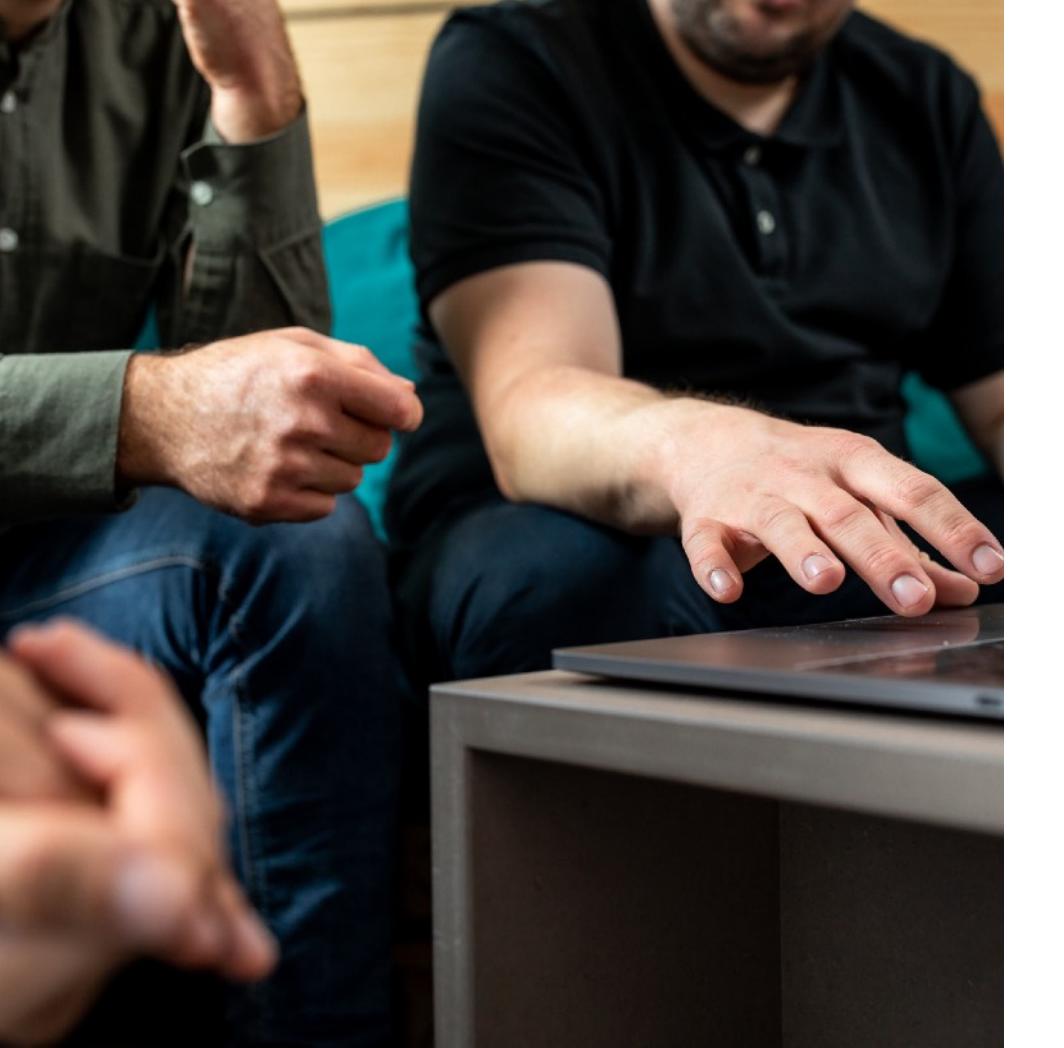
## DATA BIAS: DESIGNING FOR DEFAULTS

1. Who am I?
2. What's a data gap and data bias?
3. What's going wrong?
4. Why should you care?
5. What can we all do about it?

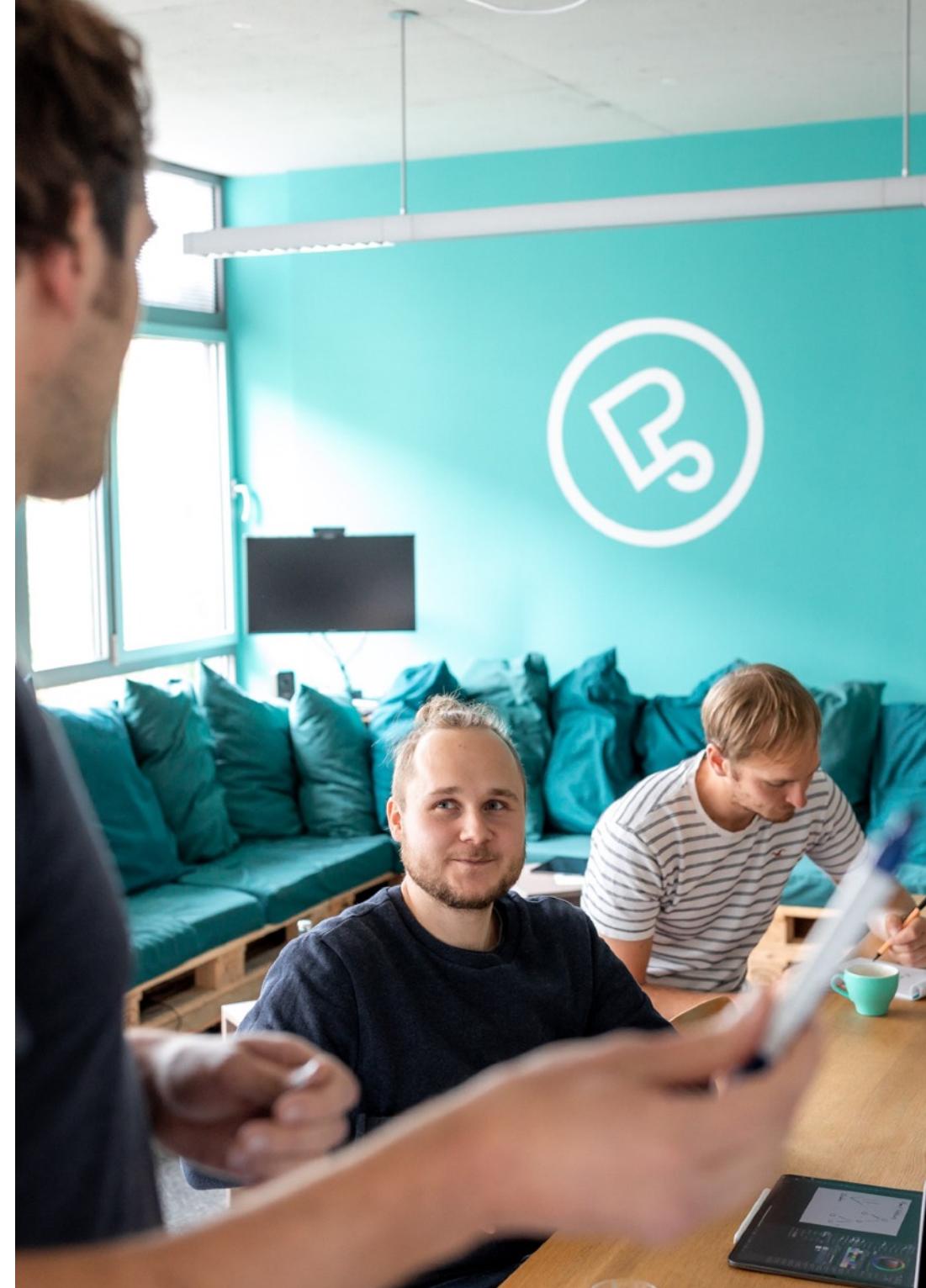
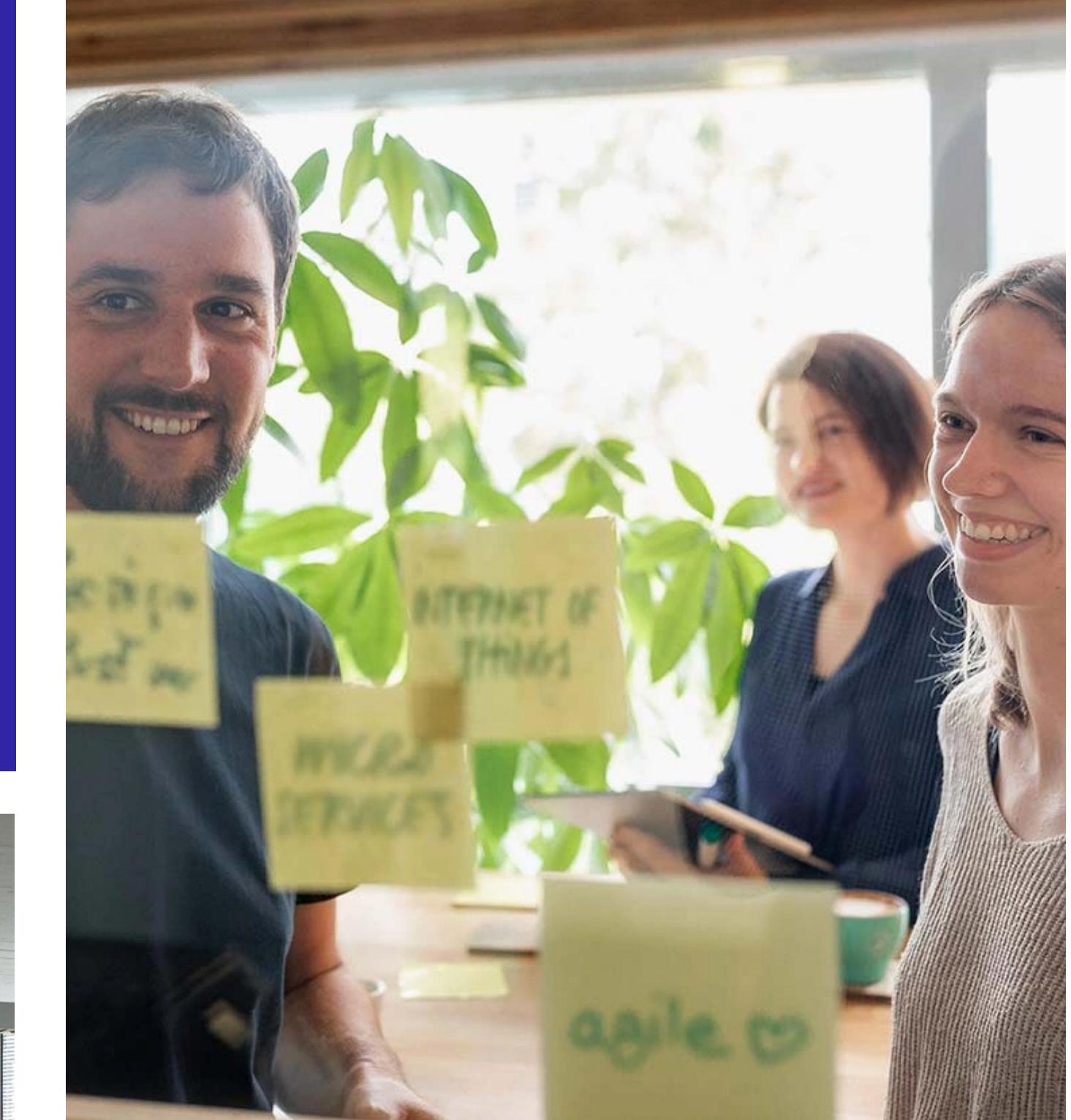
# **Who am I?**

## DATA BIAS





Let's  
fetch(aCoffee)  
**together.**



# **Discovering the data gap**

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**If they have a heart attack,  
women are 50% more likely to be  
misdiagnosed and more likely to  
die than a man**

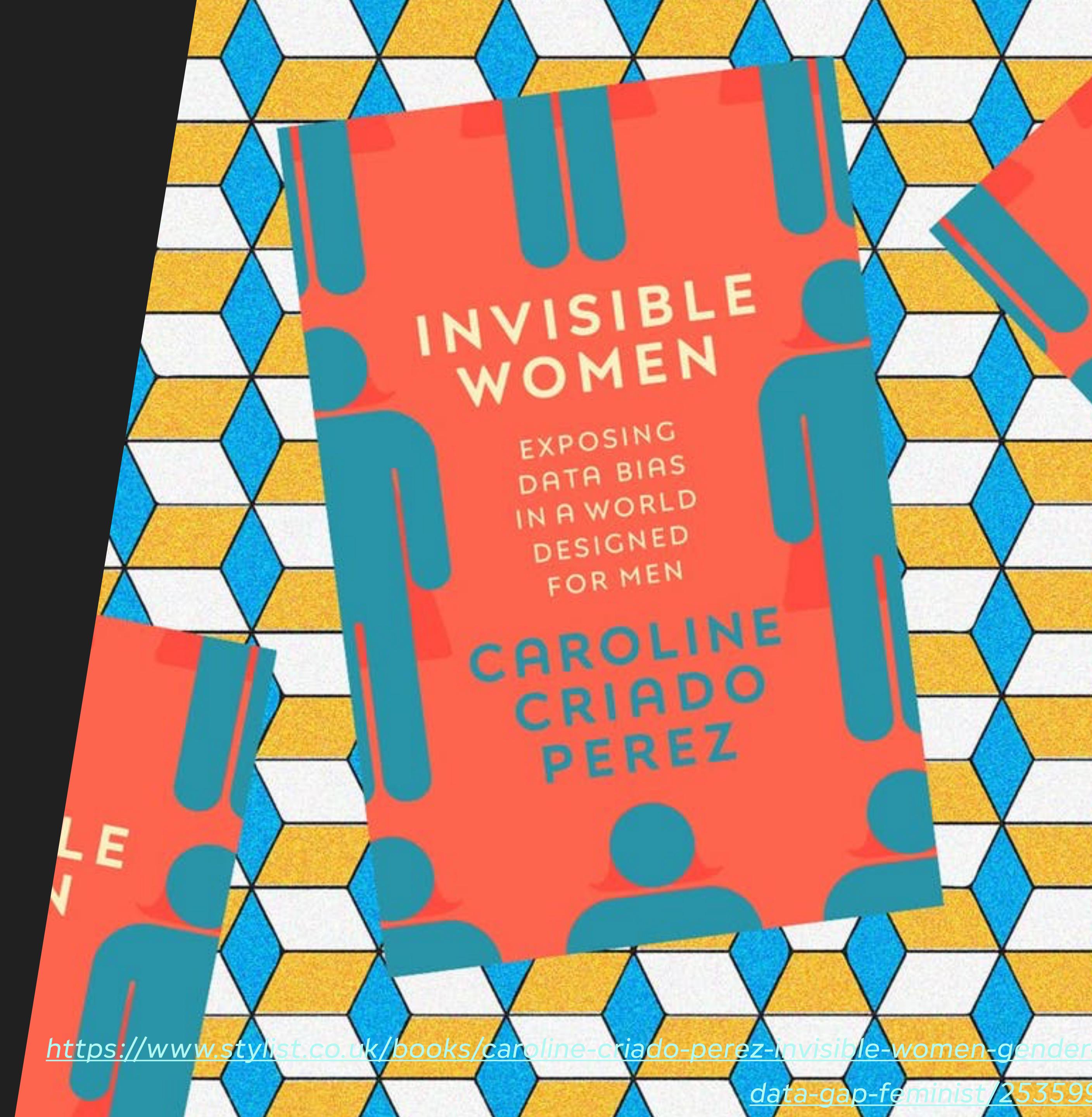
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**Since Crashtest-Dummies, designed in the 1950s, orient to male proportions, women are 17% more likely to die in a car crash.  
In 2011 a female Dummy was introduced.  
In two out of three frontal impact tests, it sits in the passenger seat.**

## DATA BIAS

### INVISIBLE WOMEN

- *Gender Data Gap*
- „*Default Male Thinking*“
- *Projection error*



<https://www.stylist.co.uk/books/caroline-criado-perez-invisible-women-gender-data-gap-feminist/253599>

**Human bias translates to Data Bias**

# **What's data bias?**

## **DEFINITION OF DATA BIAS**

| 'DĀ-TƏ 'BĪ-ƏS |

### **AVAILABLE DATA**

***...IS NOT REPRESENTATIVE OF THE POPULATION OR***

***PHENOMENON OF STUDY***

***...DOES NOT INCLUDE VARIABLES THAT PROPERLY***

***CAPTURE THE PHENOMENON WE WANT TO PREDICT***

***...INCLUDES CONTENT PRODUCED BY HUMANS***

***WHICH MAY CONTAIN BIAS AGAINST GROUPS OF  
PEOPLE***

# Designing for defaults.

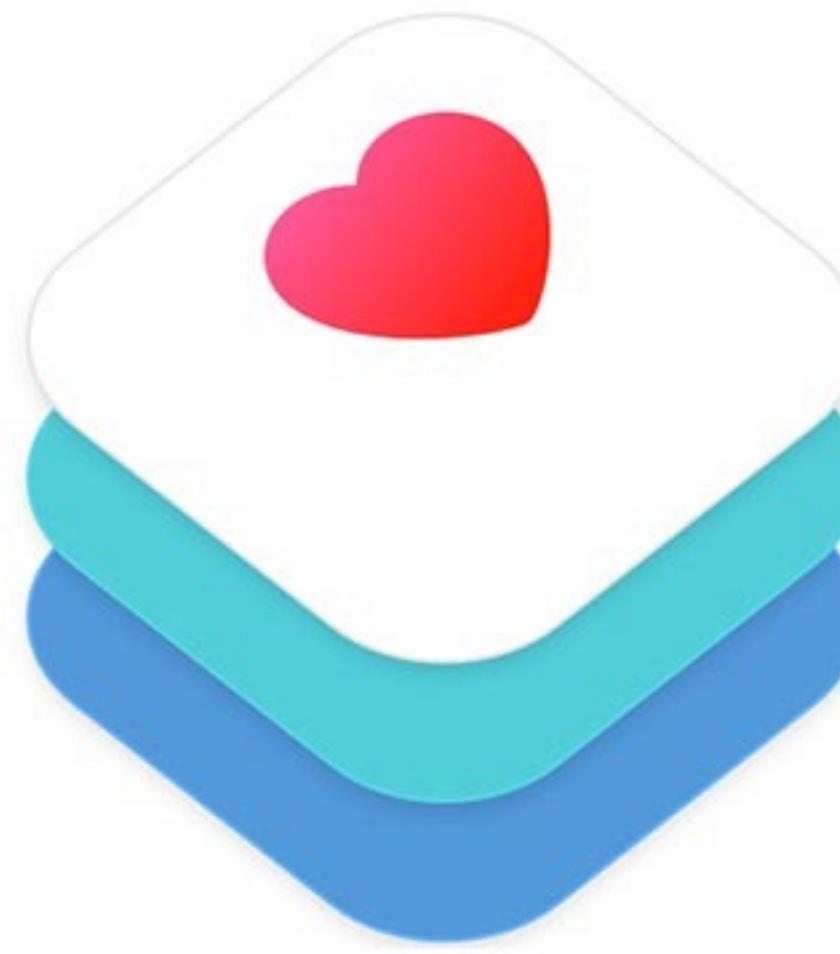
**DATA BIAS**

## *HARDWARE & DIVERSE TEAMS*



**DATA BIAS**

## ***SOFTWARE & DIVERSE TEAMS***



HealthKit

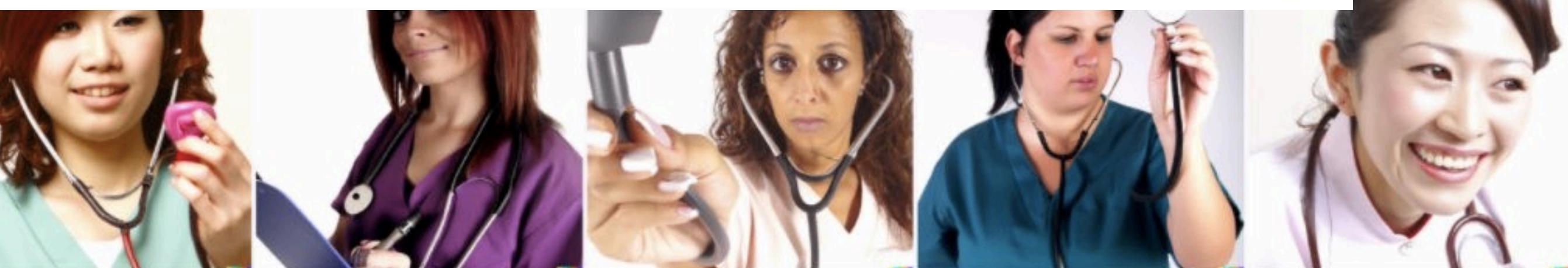
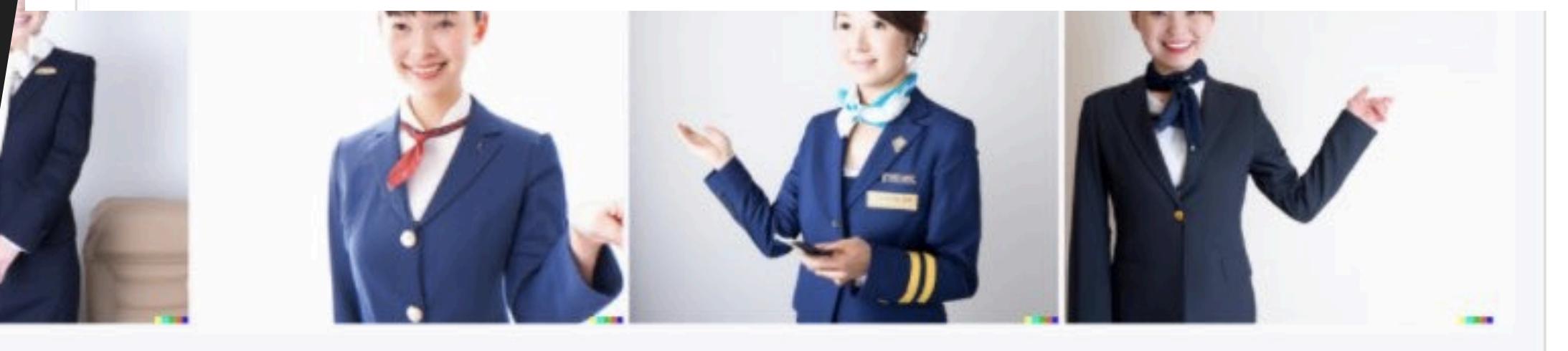
<https://www.theverge.com/2014/9/25/6844021/apple-promised-an-expansive-health-app-so-why-cant-i-track>

**bias = dead angle**

**Machines are dumb.**

## DATA BIAS

## IMAGE GENERATION



## DATA BIAS

### SKEWED DATA

- *uneven data*
- *unintended correlations*
- *biased collection*

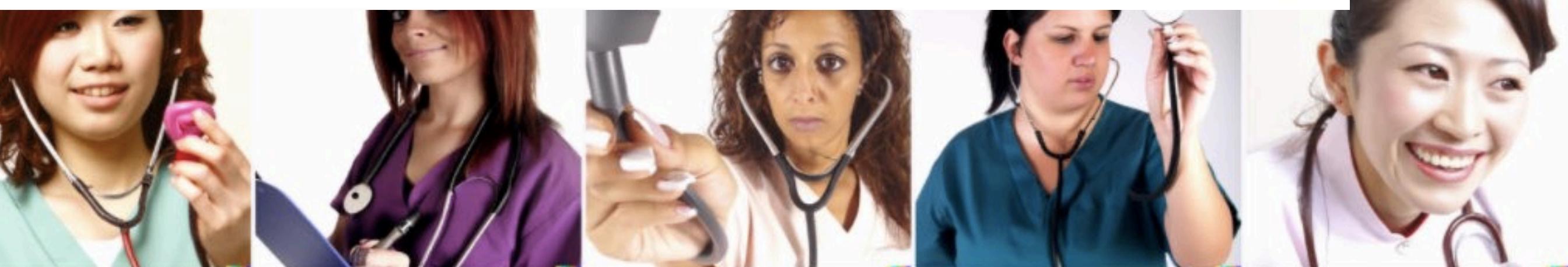
Machine Learning  $\neq$  Neutral

## DATA BIAS

## RISKS & LIMITATIONS

*„Use of DALL-E 2 has the potential to harm individuals and groups by reinforcing stereotypes, erasing or denigrating them, providing them with disparately low quality performance, or by subjecting them to indignity. These behaviors reflect biases present in DALL-E 2 training data and the way in which the model is trained.“*

### DALL-E 2 Bias & Representation

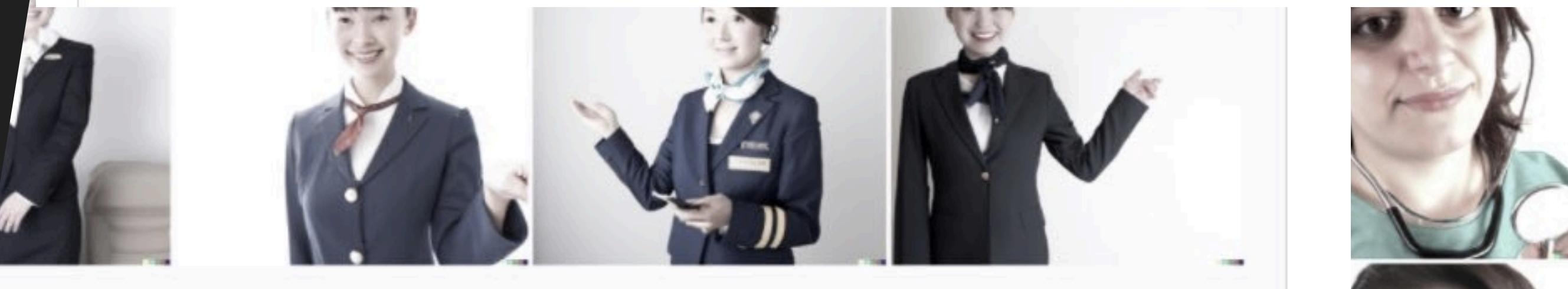


## DATA BIAS

# FAIR ALGORITHMS

*Can unbiased data produce biased results?*

*Fair AI needs fair systems.*



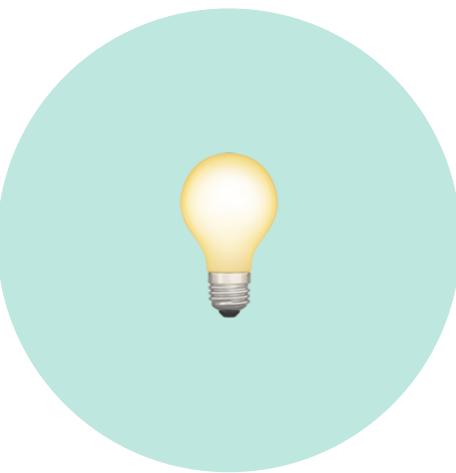
# Why should you care?

**We should design machines based on  
the reality we would like to have.**

**What can we all do about it?**

**DATA BIAS**

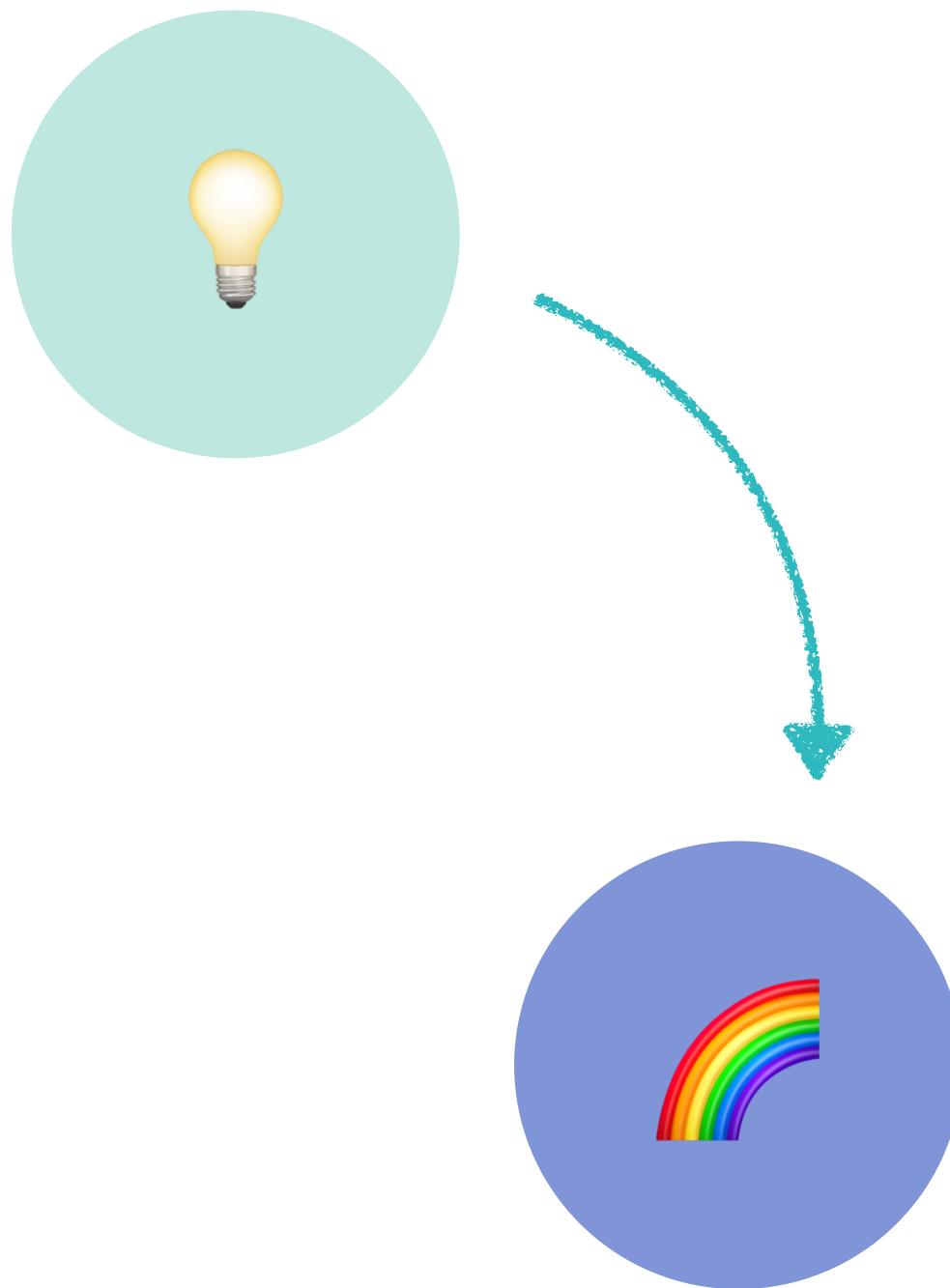
***RECOGNIZE (YOUR) BIAS***



## DATA BIAS

***RECOGNIZE (YOUR) BIAS***

***WORK WITH A DIVERSE TEAM***

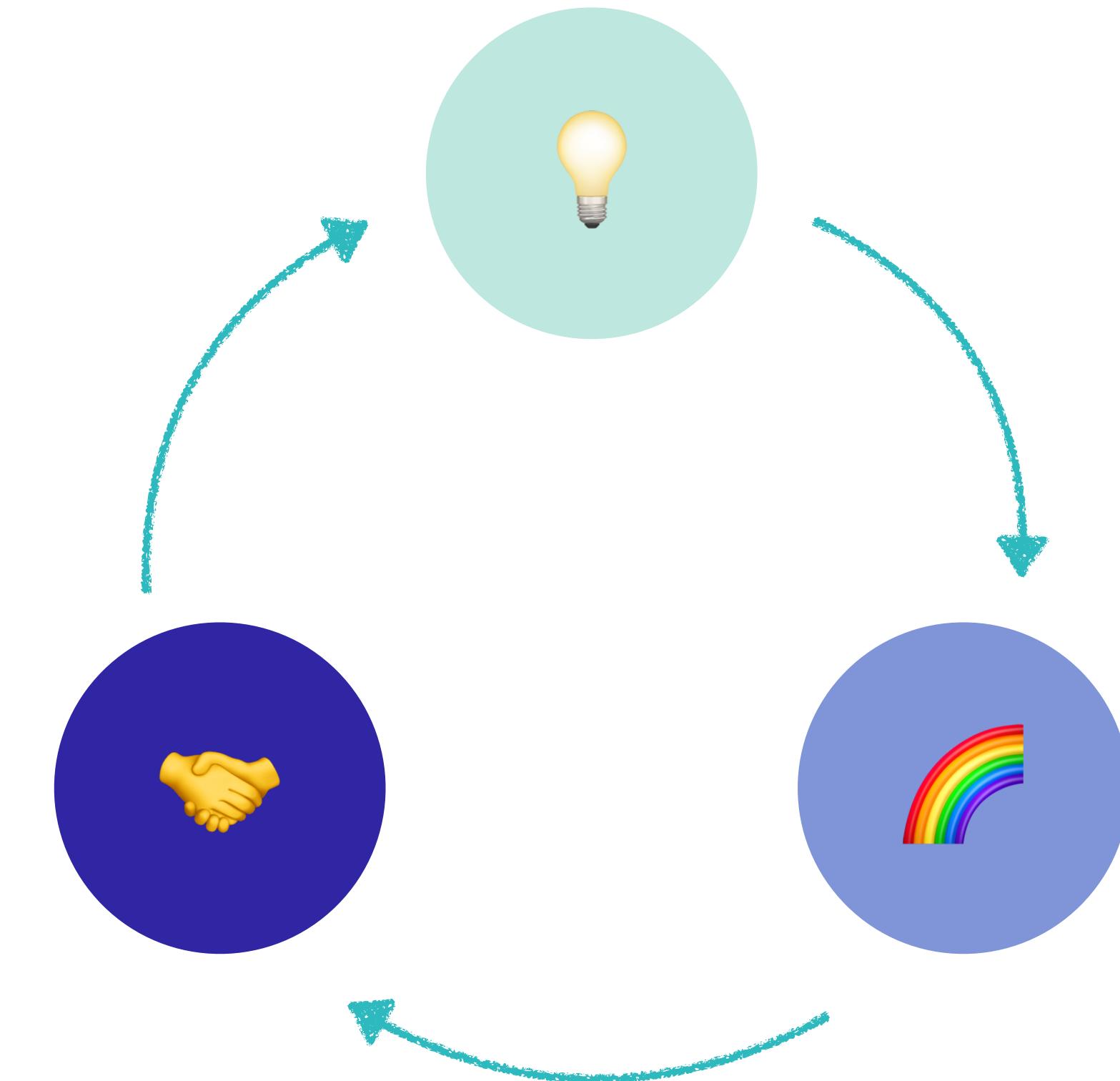


**DATA BIAS**

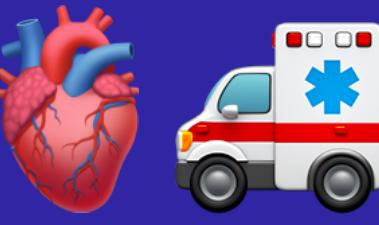
***RECOGNIZE (YOUR) BIAS***

***WORK WITH A DIVERSE TEAM***

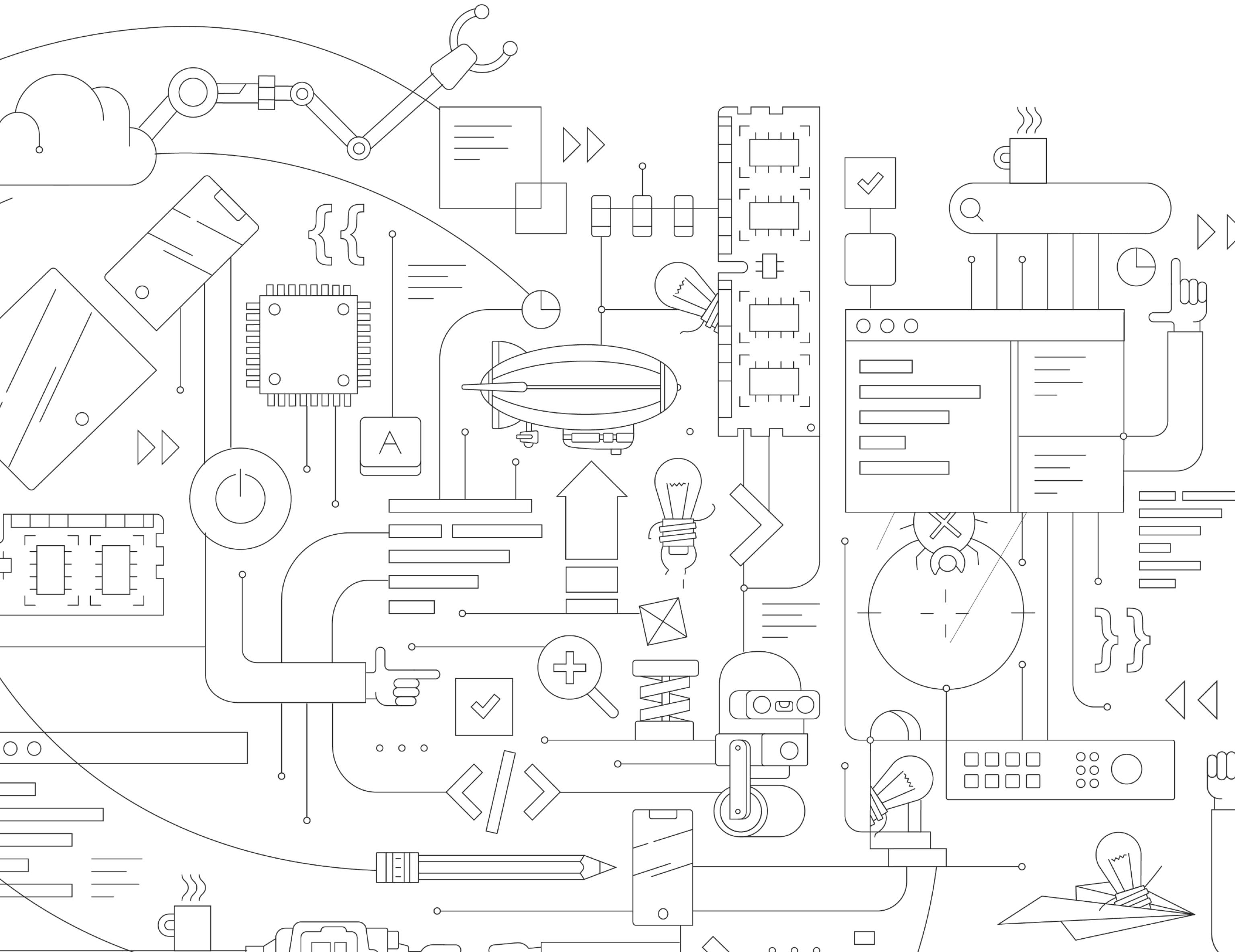
***CONTRIBUTE***



# How to detect a Women's Heart Attack



- ***CHEST PAIN (PRESSURE, SQUEEZING, FULLNESS)***
- ***PAIN IN ONE OR BOTH ARMS, THE BACK, NECK, JAW OR STOMACH***
- ***SHORTNESS OF BREATH***
- ***COLD SWEAT, NAUSEA, VOMITING OR LIGHTEADEDNESS***



**Danke! Fragen? :)**

## DATA BIAS

### MORE ON THE TOPIC

 Caroline Criado-Perez – *Invisible Women*

 Janelle Shane – *You Look Like a Thing and I love you*

 *Coded Bias (Netflix)*

 ...and a lot of podcasts