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# 1. Example of Bias in algorithms

# COMPAS

## Learning at the Turing

- Used in US court to predict risk of recidivism
- ProPublica study in 2016:

	White	Black
Labelled higher risk – but didn't re-offend	23%	45%
Labelled low risk – did re-offend	48%	28%

- Northpointe defence: accuracy for white and black is the same (~60 %)

# Amazon's recruiting

## Learning at the Turing

- Historical data over a 10 year period: employee hired are mostly male.
- Algorithm finds patterns within data. Disadvantaged candidates who:
  - went to certain women's colleges
  - Contained the word "women's" such as "women's rugby team"
- Privileged resumes with the kinds of verbs that men tend to use, like "executed" and "captured."
- GIGO: Garbage in, garbage out. Scrapped before real use

# Apple's credit

## Learning at the Turing

- Tech entrepreneur David Heinemeier Hansson 20x higher credit limit than his wife despite her having a better credit score. Similar story for Steve Wozniak.
- Some responses: Gender not used as an input
- The problem of proxies ! Input that correlate with gender. For instance whether you have a Mac or a PC correlates with creditworthiness.

# Gender shades

Learning at the Turing

- Facial recognition. 3 commercial gender classification systems.

Category	Error Rate
lighter-skinned male	Up to 0.8%
darker-skinned females	Up to 34.7%

- Two facial analysis benchmark > 70% lighter-skinned subjects