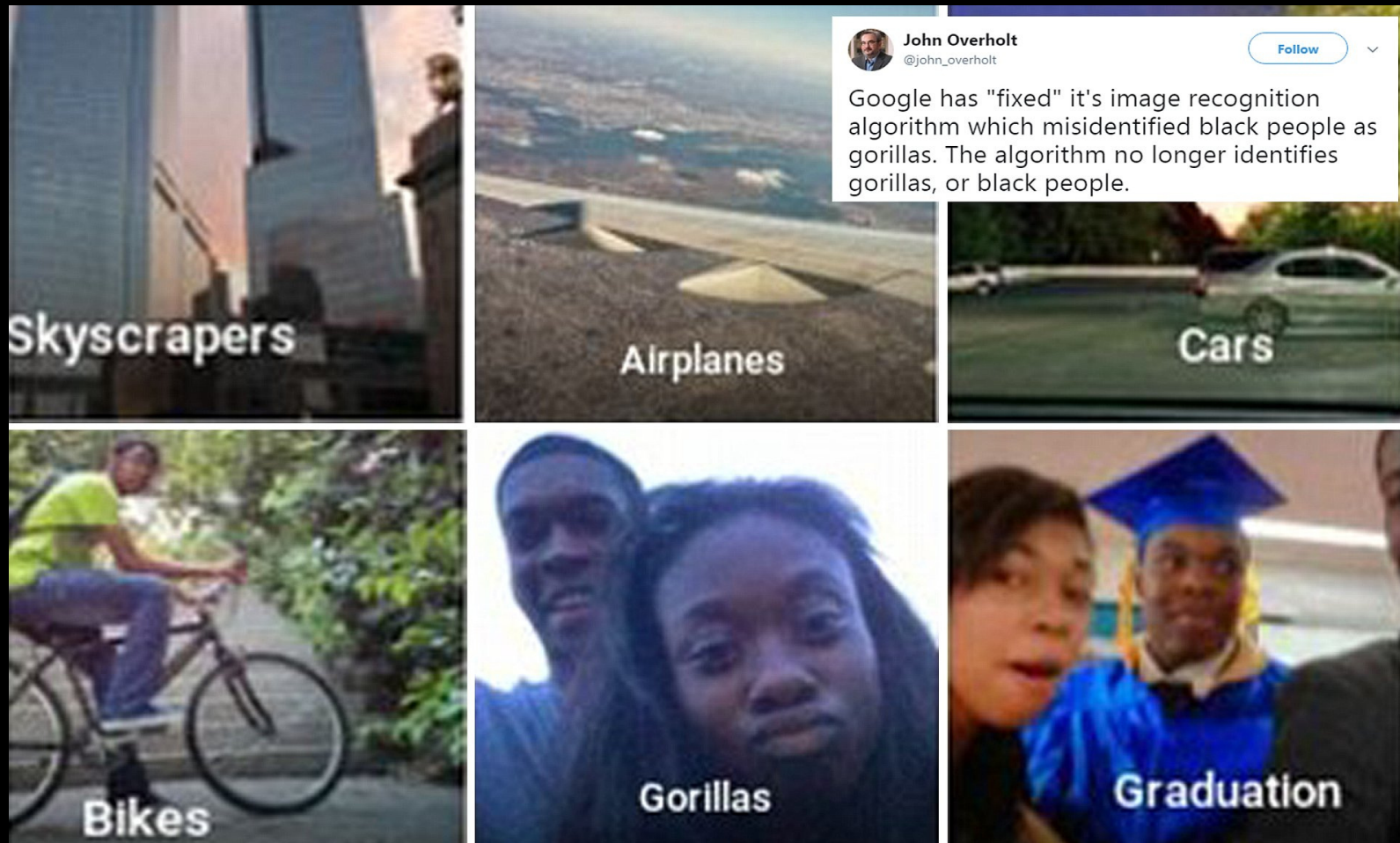


BIASED **ARTIFICIAL** **INTELLIGENCE**

Biased artificial intelligence

- Let's see few examples



- Users discovered that Google's photo app, which applies automatic labels to pictures in digital photo albums, was classifying images of black people as gorillas. Google apologized; it was unintentional.

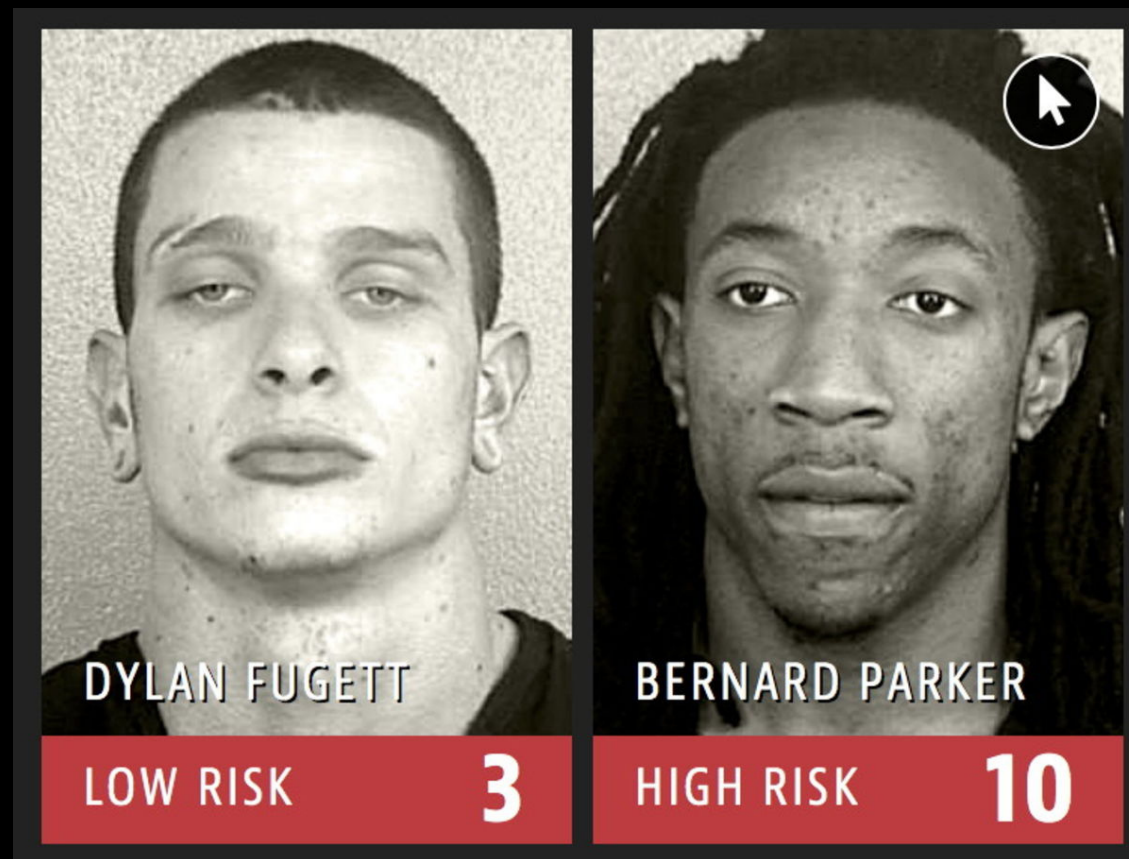
Biased artificial intelligence



But similar errors have emerged in Nikon's camera software, which misread images of Asian people as blinking, and in Hewlett-Packard's web camera software, which had difficulty recognizing people with dark skin tones.

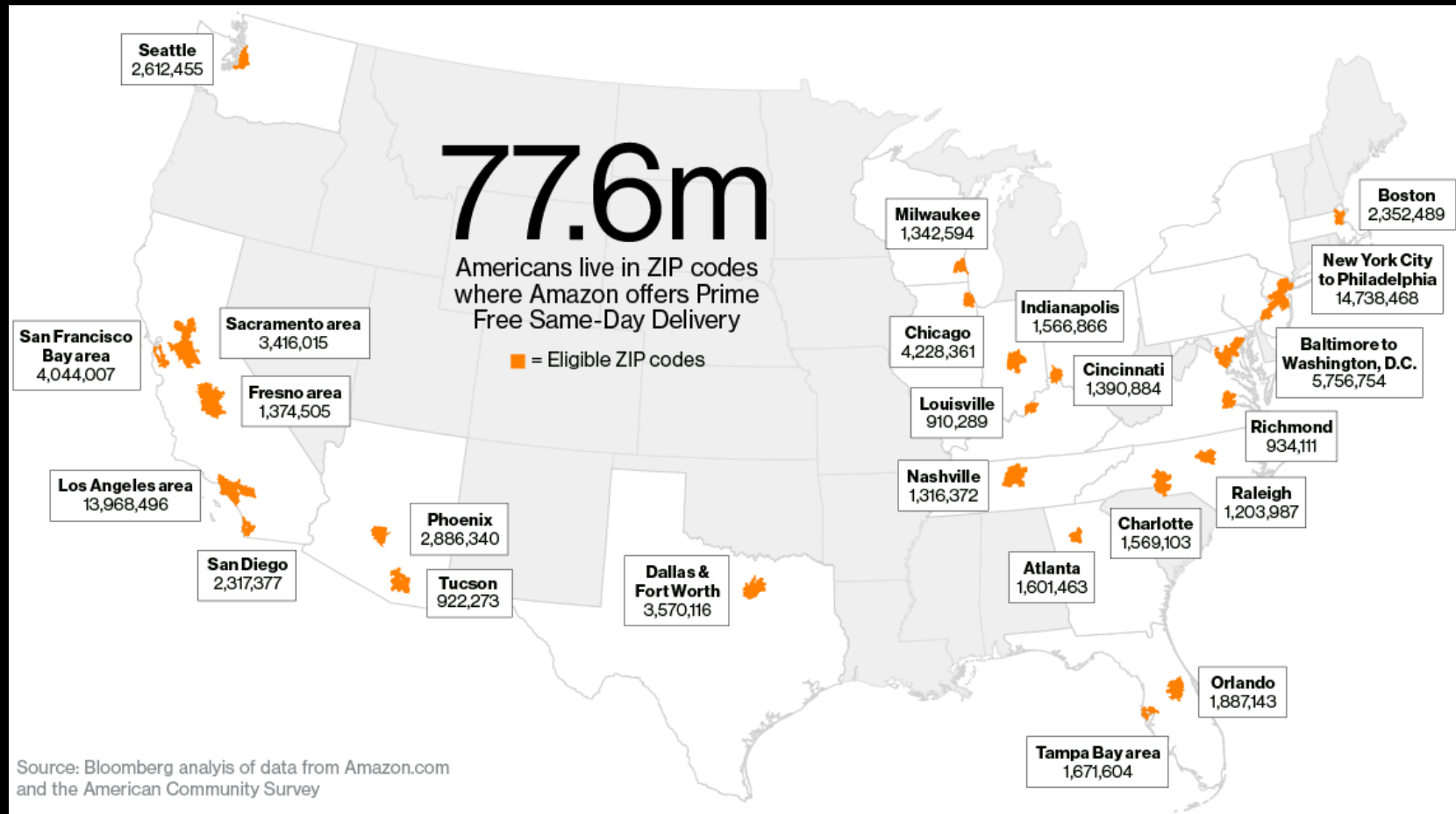
computer scientists at Carnegie Mellon University found that women were less likely than men to be shown ads on Google for highly paid jobs. The complexity of how search engines show ads to internet users makes it hard to say why this happened — whether the advertisers preferred showing the ads to men, or the outcome was an unintended consequence of the algorithms involved.

Biased artificial intelligence



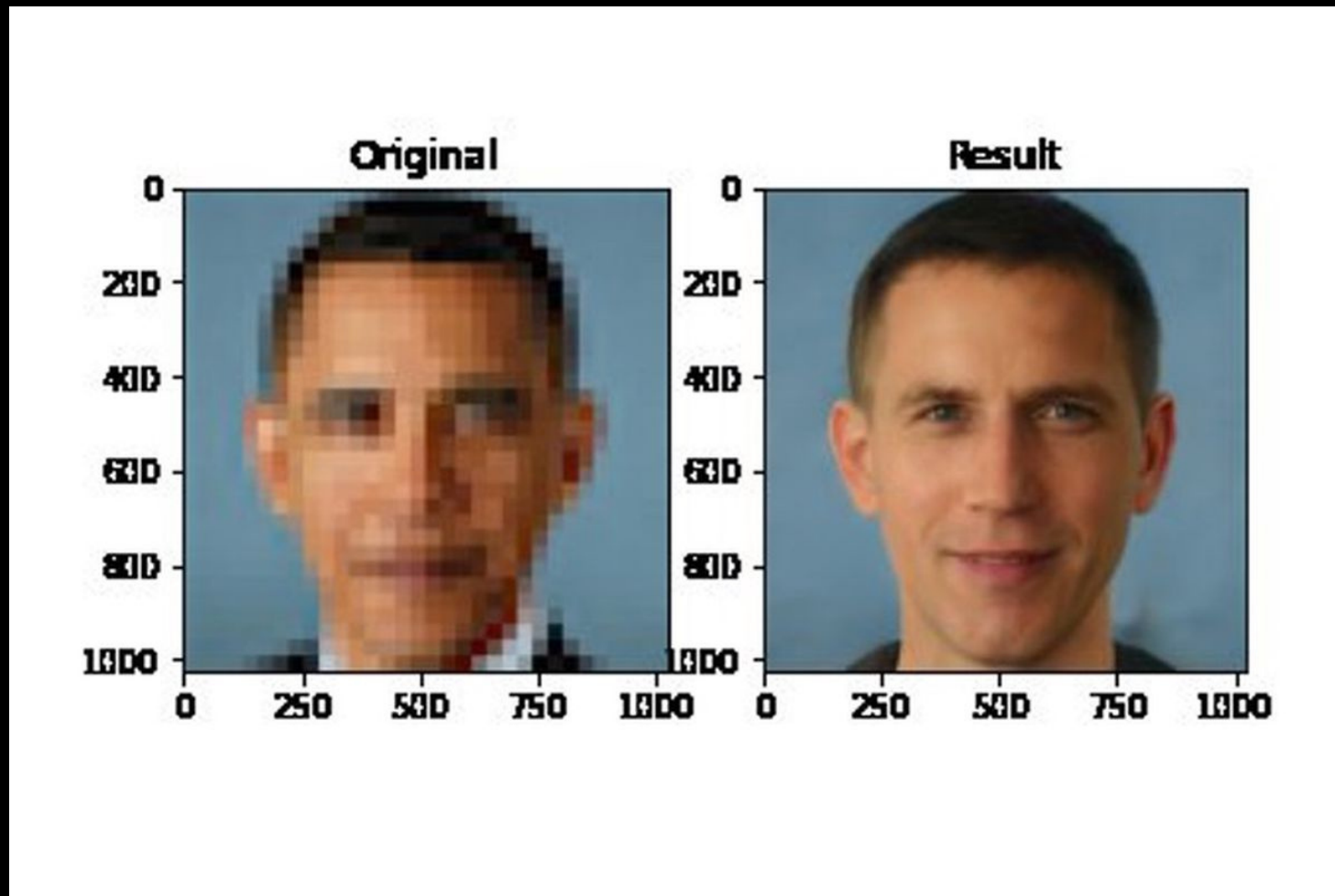
A very serious example was revealed in an investigation published last month by ProPublica. It found that widely used software that assessed the risk of recidivism in criminals was twice as likely to mistakenly flag black defendants as being at a higher risk of committing future crimes. It was also twice as likely to incorrectly flag white defendants as low risk.

Biased artificial intelligence



Another scandal emerged recently when it was revealed that Amazon's same-day delivery service was unavailable for ZIP codes in predominantly black neighborhoods. The areas overlooked were remarkably similar to those affected by mortgage redlining in the mid-20th century.

Biased artificial intelligence



Recently released tool called PULSE. Input of a low-resolution picture of Barack Obama, the first black president of the United States, into an algorithm designed to generate depixelated faces, and the output is a white man. PULSE is using StyleGAN as its backend. StyleGAN (which is created by Nvidia to generate faces

Biased artificial intelligence

- **One prominent case from 2019 saw tech giant, Apple, accused of sexism when the company's new credit card seemed to offer men more credit than women—even when the women had better credit scores.**
- **Steve Wozniak himself, Apple's cofounder, tweeted a complaint that his wife was offered a lower credit limit than him despite her higher credit score. In response to multiple complaints, a US financial regulator is investigating the sexism claims.**
- **Another, more serious case, is that of COMPAS. In 2016, it came to light that the computer program, used to calculate the likelihood of prisoners reoffending, was unfairly biased against African-American defendants.**
- **Many more**

What causes AI bias?

- When AI goes wrong, you might be tempted to blame the algorithm itself. In reality, though, humans are the ones at fault.
- “I would not assign blame to AI itself, but to the creators of the AI algorithms who have failed to ensure their application is unbiased,” says Anton.
- Dr Anindya Ghose, professor of information, operations, and management sciences at NYU Stern, agrees. Bad data is usually at the root of the problem, he believes.
- “An algorithm is only as good as the data it’s trained on,” he says. “To use an old data science adage: garbage in, garbage out.”
- Algorithms are “data-hungry,” Anindya explains, and learn over time based on the data they are given. If an algorithm is trained on data that’s systematically biased, it will start to make decisions that are biased.

Tackling bias in AI

- **Getting broader data**
- **Datasheets: This is an engineering method being repurposed for tracking data about the data. Specifically, what did this data measure and how was it measured.**
- **Bias auditing**
- **Digital decisioning platforms for bias and ethics**
- **Conversational discovery assistants**
- **Design with intention**
- **Diversity**
-