

Artificial Intelligence: Avoiding financial exclusion



Prof. Toby Walsh
UNSW Sydney | Data61 | TU Berlin | QUT
Australian Payments Summit 2019

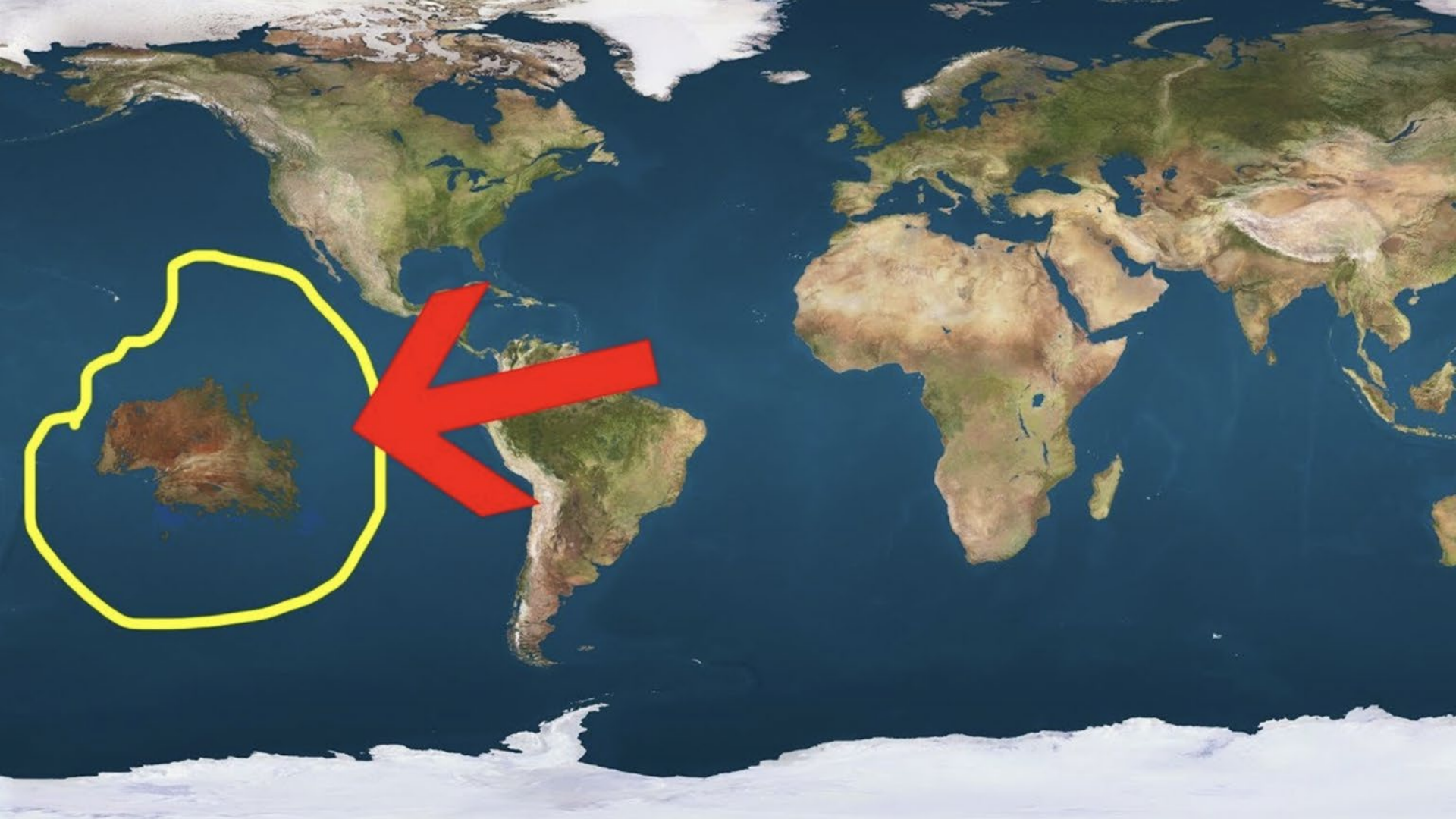
Artificial Intelligence: Helping financial inclusion



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THE EFFECTIVE
AND ETHICAL
DEVELOPMENT OF
**ARTIFICIAL
INTELLIGENCE**

AN OPPORTUNITY TO
IMPROVE OUR WELLBEING



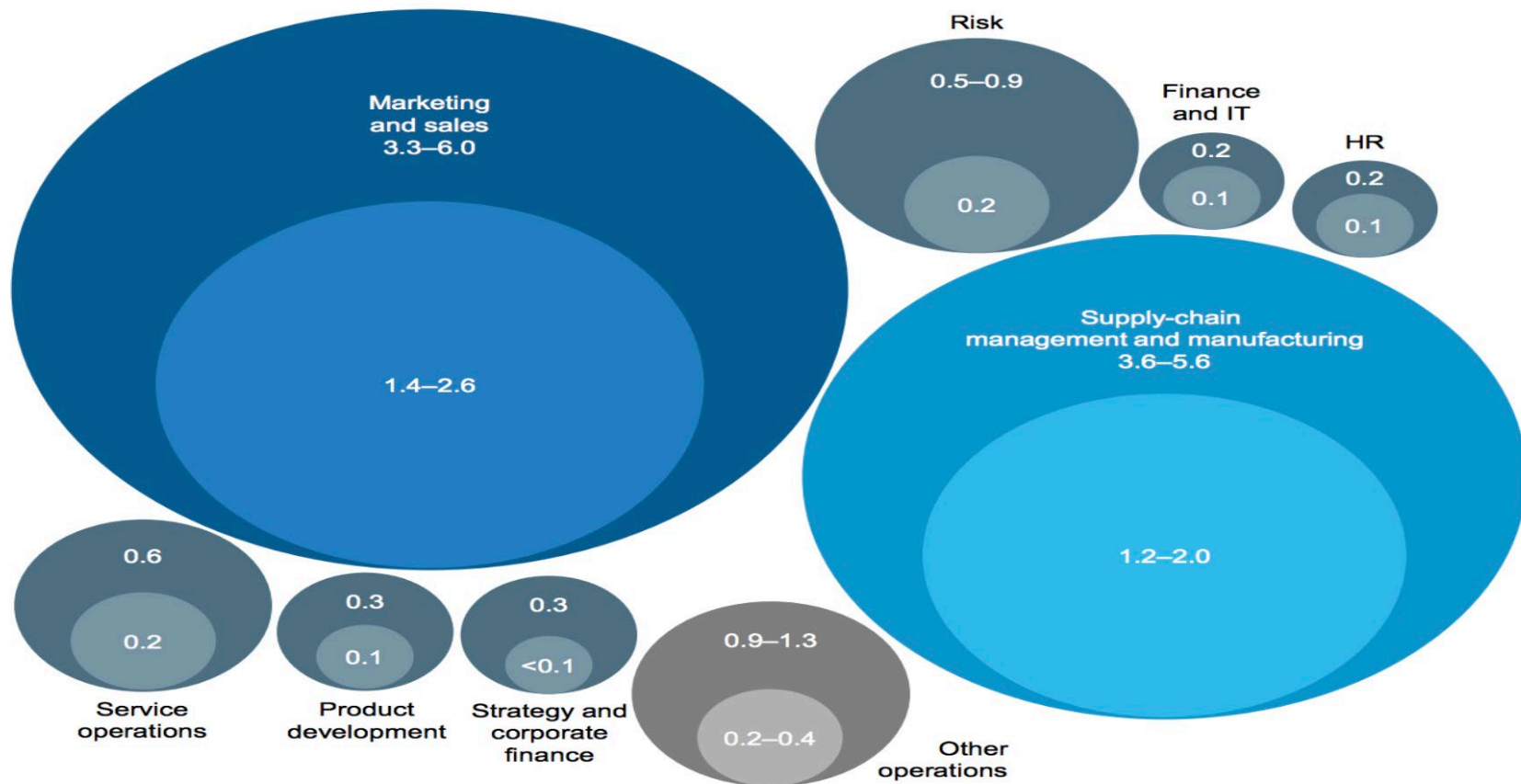
Value potential
\$ trillion

McKinsey 2018

Value potential

By all analytics (darker color)
\$9.5 trillion–15.4 trillion

By AI (lighter color)
\$3.5 trillion–5.8 trillion

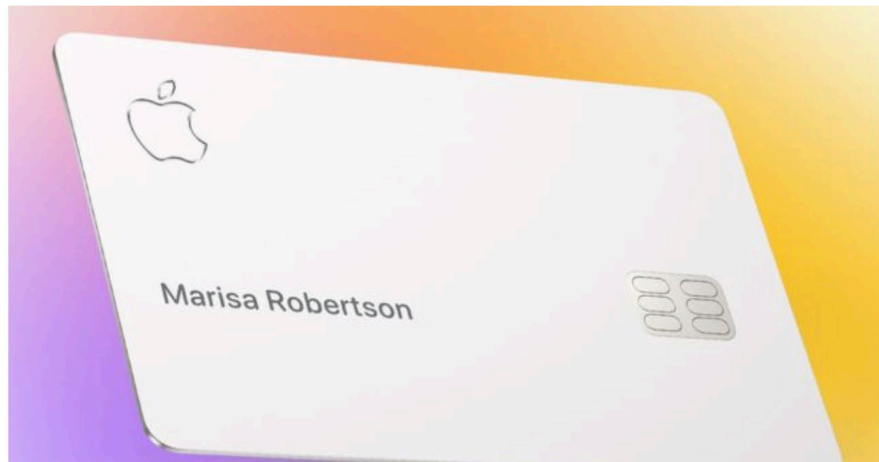


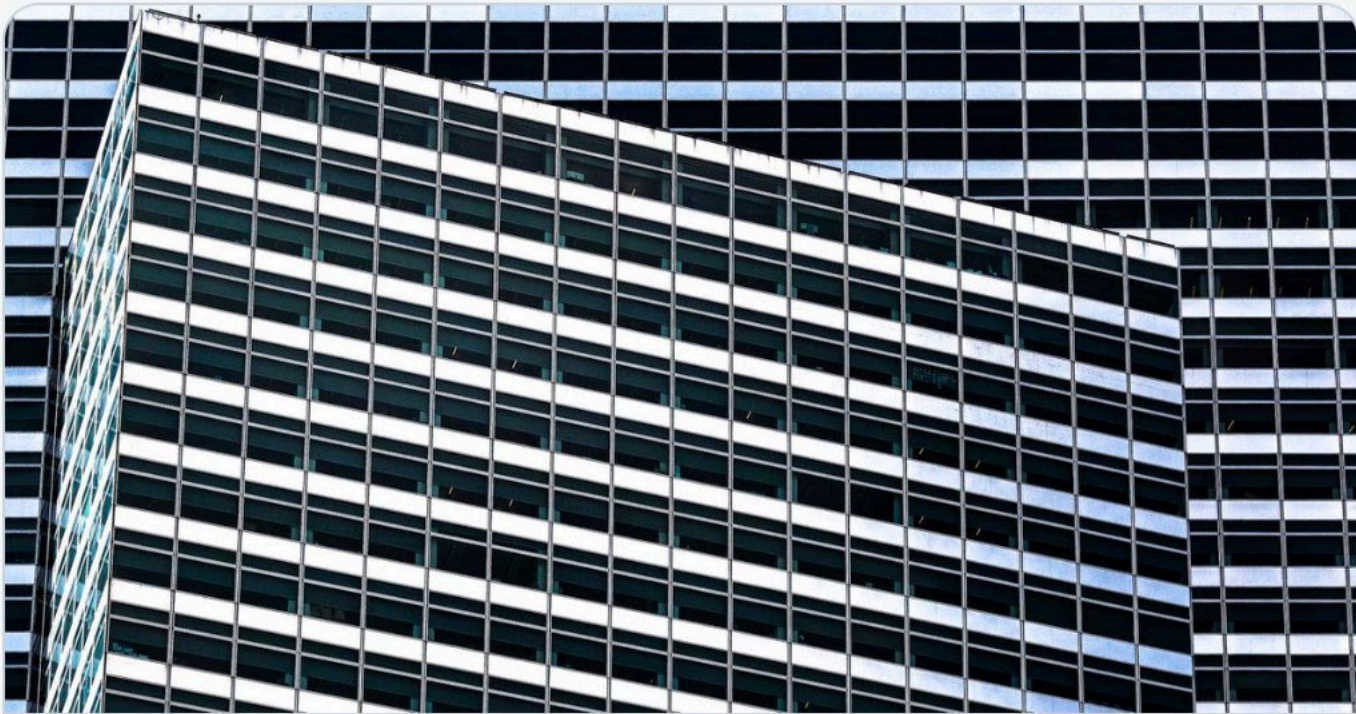
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Apple's 'sexist' credit card investigated by US regulator

🕒 11 November 2019

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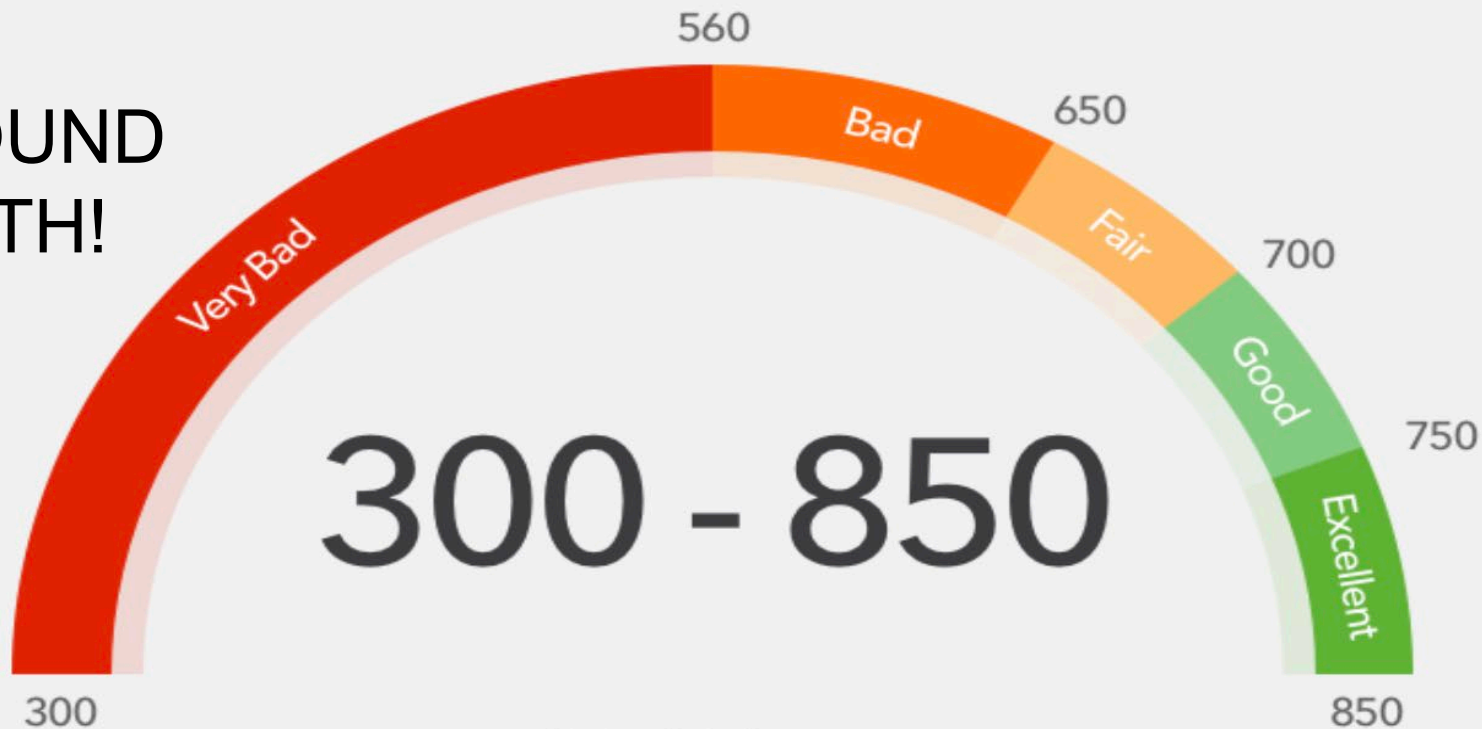
The Apple Card Didn't 'See' Gender—and That's the Problem

The way its algorithm determines credit lines makes the risk of bias more acute.

 [wired.com](https://www.wired.com)

FICO® Credit Scores

NO
GROUND
TRUTH!



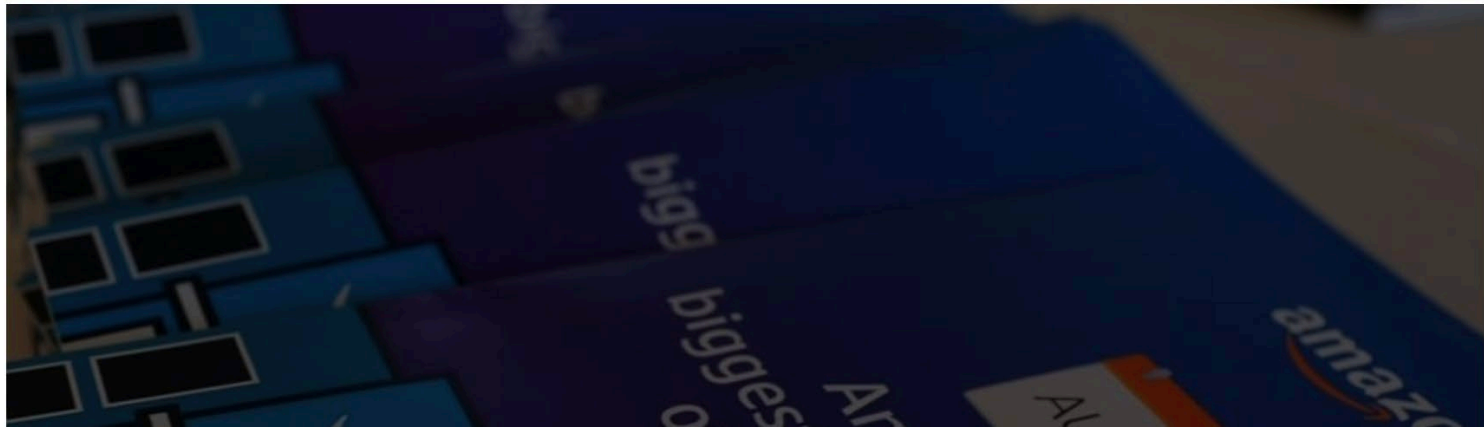
Amazon scraps secret AI recruiting tool that showed bias against women

Jeffrey Dastin

8 MIN READ



SAN FRANCISCO (Reuters) - Amazon.com Inc's ([AMZN.O](#)) machine-learning specialists uncovered a big problem: their new recruiting engine did not like women.





professors are |



professors are **losers**

professors are **useless**

professors are **overpaid**

professors are **liberal**

Google Search

I'm Feeling Lucky

Report inappropriate predictions



climate change is |



climate change is **not real**

climate change is **a hoax**

climate change is **real**

climate change is **a myth**

Google Search

I'm Feeling Lucky

Report inappropriate predictions

21 definitions of “fair”

Equal precision (aka accuracy)

Equal opportunity

Treatment equality (False+/False-)

...



21 definitions of “fair”

Most definitions are mutually incompatible

Unless prediction is 100% accurate

Or groups are identical



21 definitions of “fair”

Maximizing profit will give you a completely different solution again!

And a solution that is unlikely to be seen as “fair”



Mike Pezzullo, Secretary of Department of Immigration & Border Protection

Golden rule: No fundamental rights, privileges or entitlements should ever be denied by a computer

Canberra, July 2018



AVOID BIAS

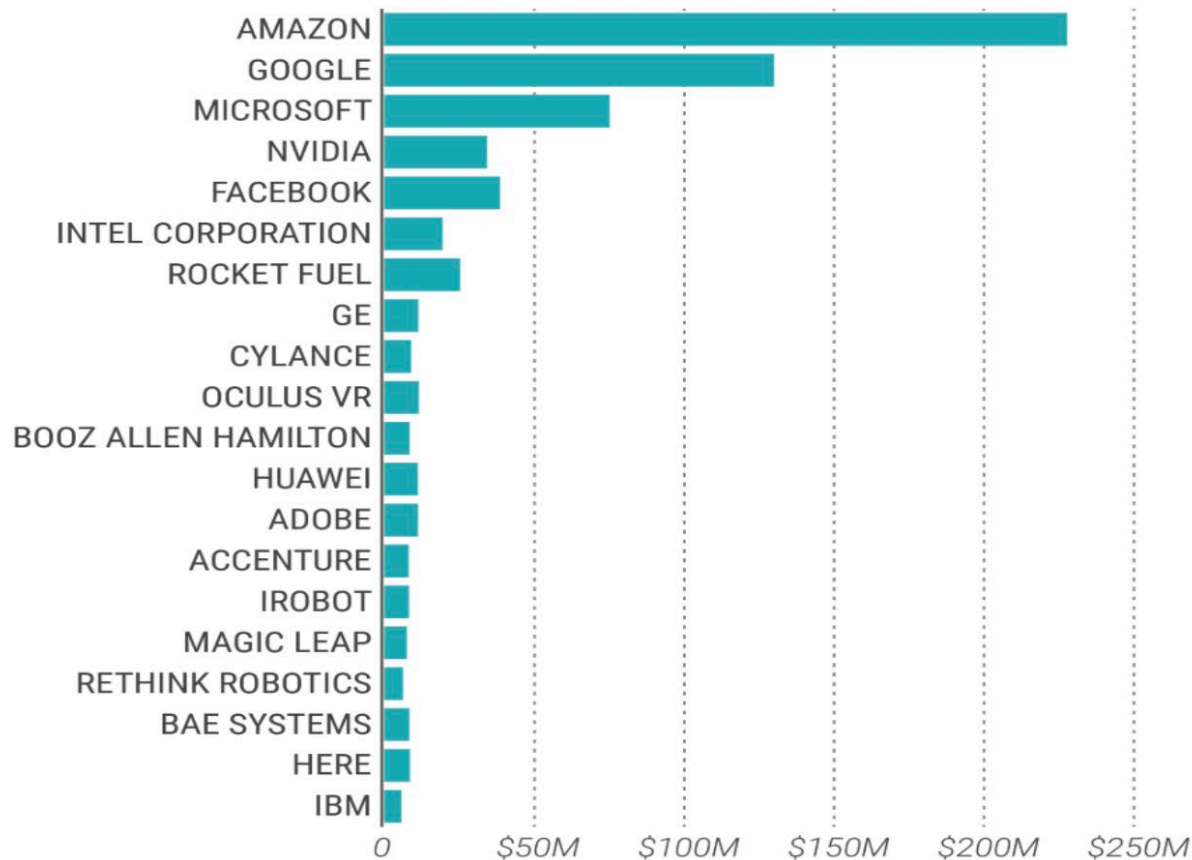
NEXT EXIT 

3 CHALLENGES



Top 20 Companies Investing in AI Talent

No other company comes close to matching the \$227.8 million that hiring and salary firm Paysa estimates Amazon will spend hiring artificial intelligence talent.



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The Science of Ethical AI

We are

an independent,
not-for-profit research
institute.

Our vision

is for a world in which all
systems behave ethically.

Our purpose

is to progress the research,
design, development and
adoption of ethical AI
systems.





**RISK
AHEAD**

2062

THE WORLD THAT AI MADE

'A COMPELLING INVITATION TO IMAGINE THE FUTURE WE WANT.'
—BRIAN CHRISTIAN, AUTHOR OF *THE MOST HUMAN HUMAN*

TOBY WALSH