

SCGW
OLT – ANN-KATRIEN OIMANN, PHD

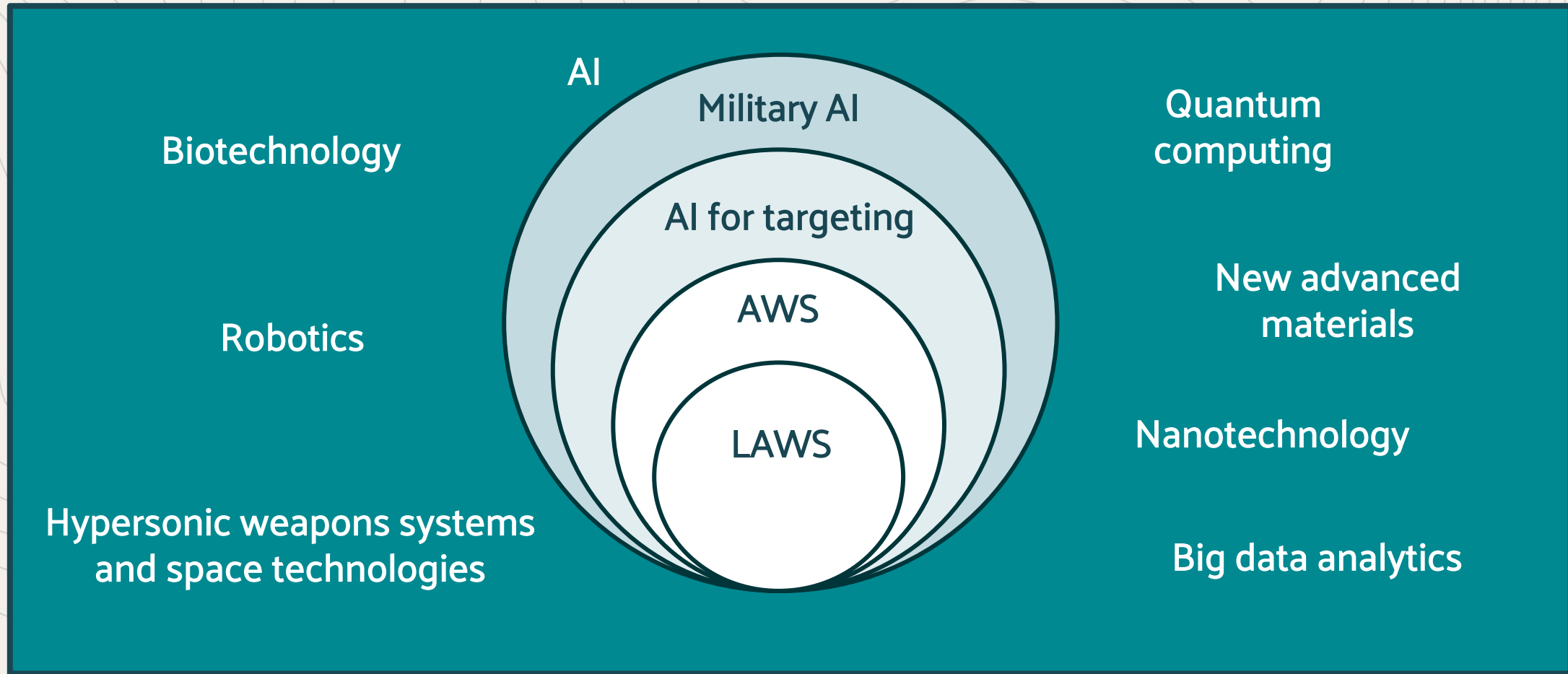
Dec 2025



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■ Ethical dimensions of LAWS

Introduction

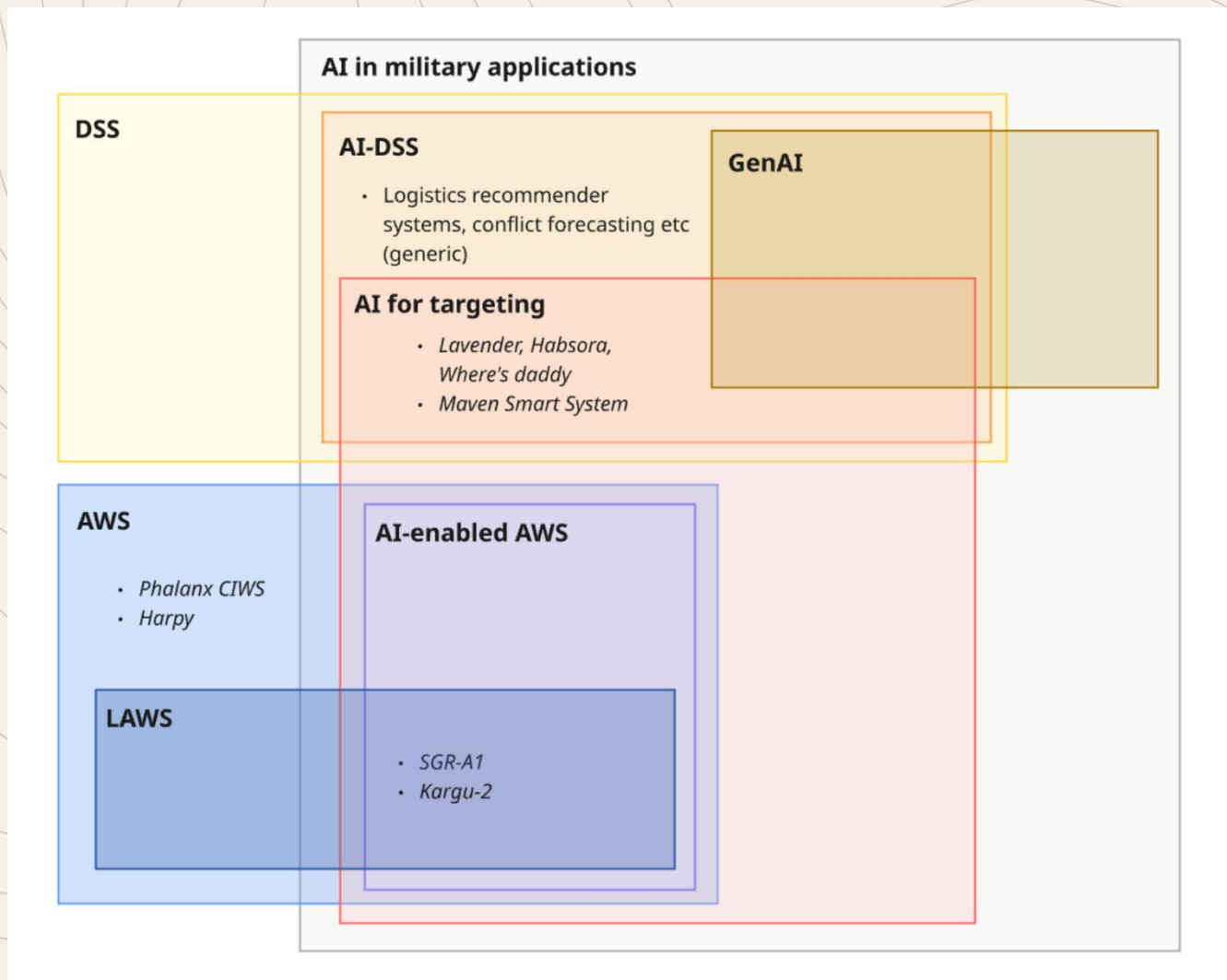


Emerging disruptive technologies (EDTs)



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Introduction



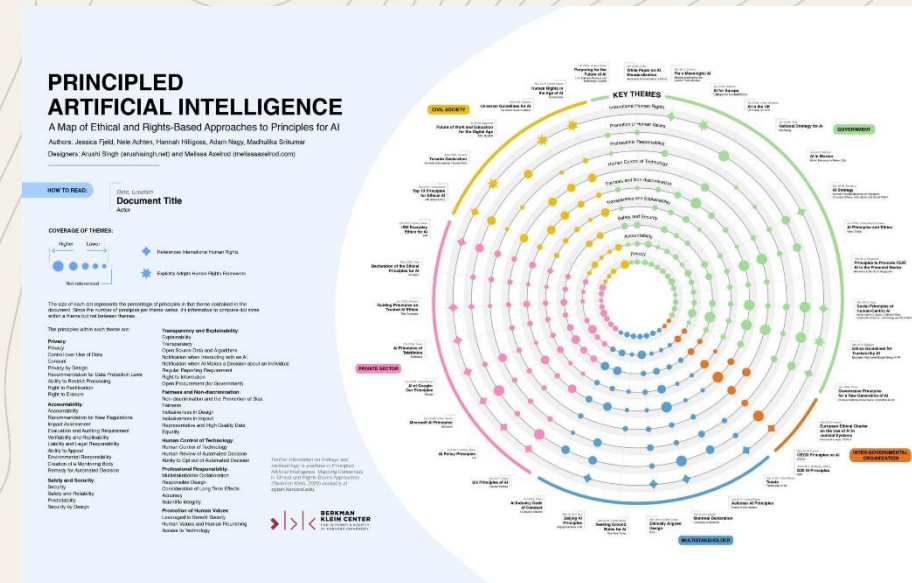
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Introduction

Law = helps answer the question “may I”

Ethics = helps answer the question “should I”

US DoD	UK MoD	NATO
Responsible	Human centricity	Lawfulness
Equitable	Responsibility	Responsibility and Accountability
Traceable	Understanding	Explainability and traceability
Reliable	Reliability	Reliability
Governable	Bias and harm mitigation	Governability
		Bias mitigation



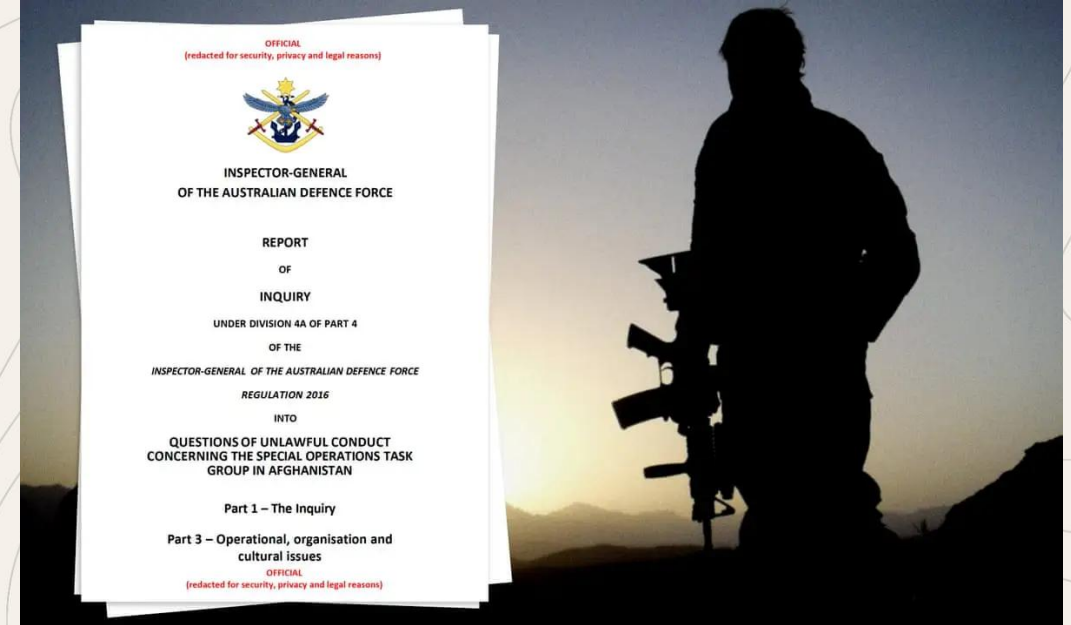
Fjeld et al 2020, Principled AI: mapping consensus in ethical and rights-based approaches to principles for AI



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■ Opportunities

- + Operational: speed, accuracy, operation areas
- + Economic: military spending, personnel
- + Moral: less civcas, less risk for own troops



Brereton Report, report on warcrimes by the ADF in Afghanistan between 2005 and 2016

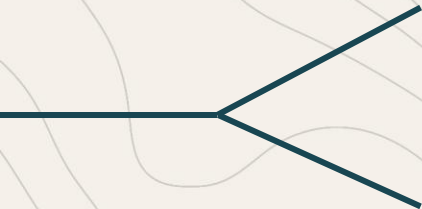


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■ Opportunities

No clear empirical data on efficiency of autonomous systems

In academic debates, divided:



“Unfair comparison with ideal fighters and ideal situations, rather than with regular soldiers and other alternative means of warfare and methods of killing people”
(Arandjelovic 2023; Meerveld et al 2023; Riesen 2022; Young, 2022; Umbrello et al 2020; Macintosh 2020; Thurnher, 2012)

“Advantages overestimated and unfairly idealised image of the technology, ignoring the fact that states and companies may deploy systems too quickly, thus posing major risks” *(Schwarz)*



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Problems

- Automation bias
- Bias
- Knowledge representation
- Responsibility
- Brittleness
- Problems with verification and validation
- Lack of transparency and predictability
- Meaningful human control

AI ethics problems (general)

- Principle of distinction
- Principle of proportionality
- Human dignity

Problems in the military (specific)



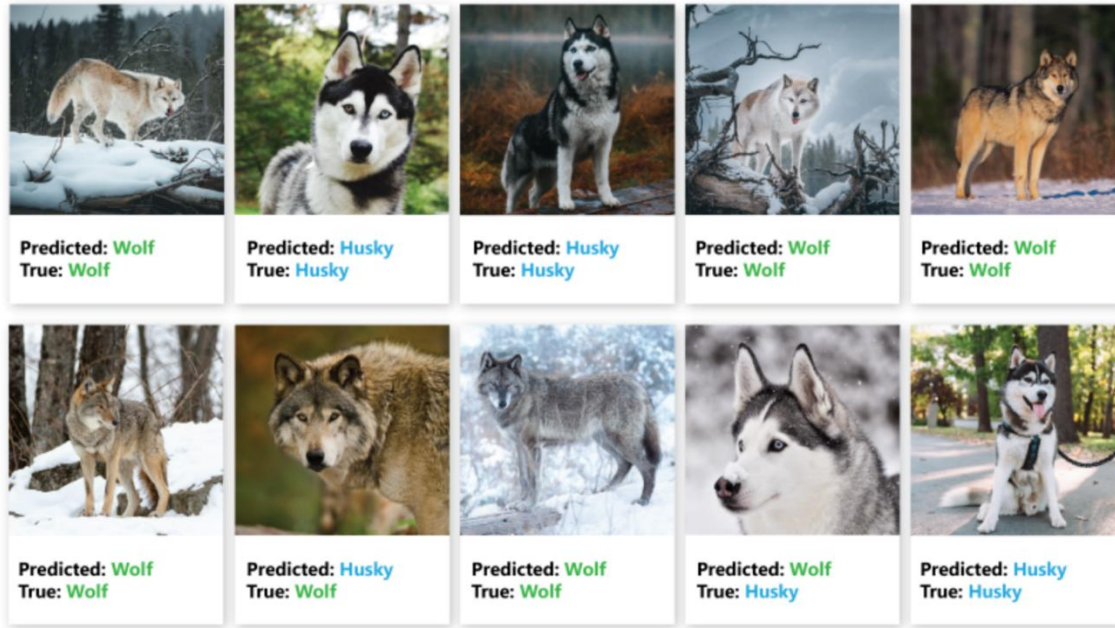
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Problems

- Knowledge representation

Data vs. real world

Explain the Prediction



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Problems

- Bias

In particular because of:

- Data they use (quantity, quality, origin)
- Design of the algorithms
- Way they are used



Women less likely to be shown ads for high-paid jobs on Google, study shows

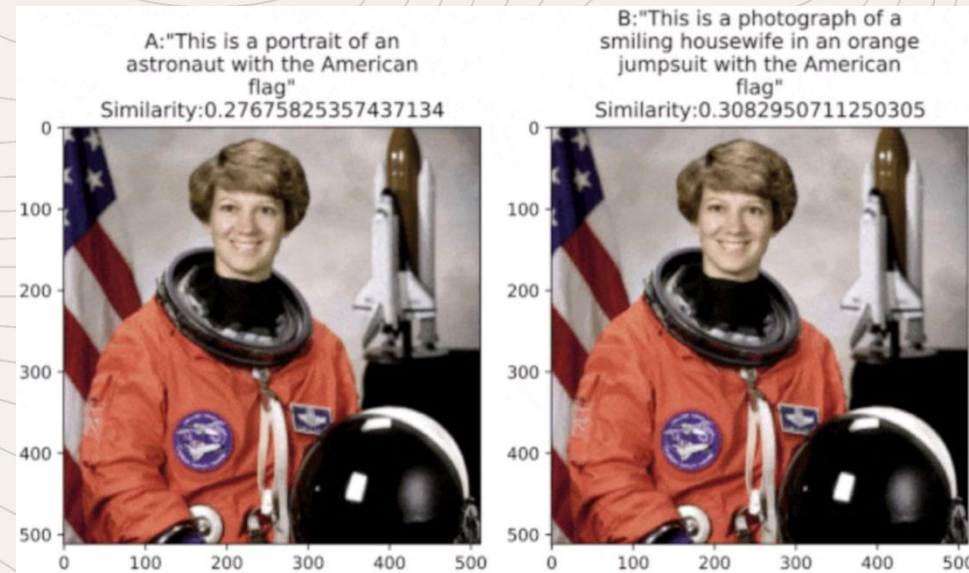
Automated testing and analysis of company's advertising system reveals male job seekers are shown far more adverts for high-paying executive jobs



▲ One experiment showed that Google displayed adverts for a career coaching service for executive jobs 1,852 times to the male group and only 318 times to the female group. Photograph: Alamy

Female job seekers are much less likely to be shown adverts on Google for highly paid jobs than men, researchers have found.

The team of researchers from Carnegie Mellon built an automated testing rig called AdFisher that pretended to be a series of male and female job seekers. Their 17,370 fake profiles only visited jobseeker sites and were shown 600,000 adverts which the team tracked and analysed.



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Problems

- Brittleness

Systems vulnerability



Fig. 2. One-pixel attacks on ImageNet dataset where the modified pixels are highlighted with red circles. The original class labels are in black color while the target class labels and their corresponding confidence are given below.



Distance/Angle	Subtle Poster	Subtle Poster Right Turn	Camouflage Graffiti	Camouflage Art (LISA-CNN)	Camouflage Art (GTSRB-CNN)
5' 0°					
5' 15°					
10' 0°					
10' 30°					
40' 0°					
Targeted-Attack Success	100%	73.33%	66.67%	100%	80%

Eykholt, Evtimov, Fernandes et al 2018 "Robust physical-world attacks on deep learning visual classification"

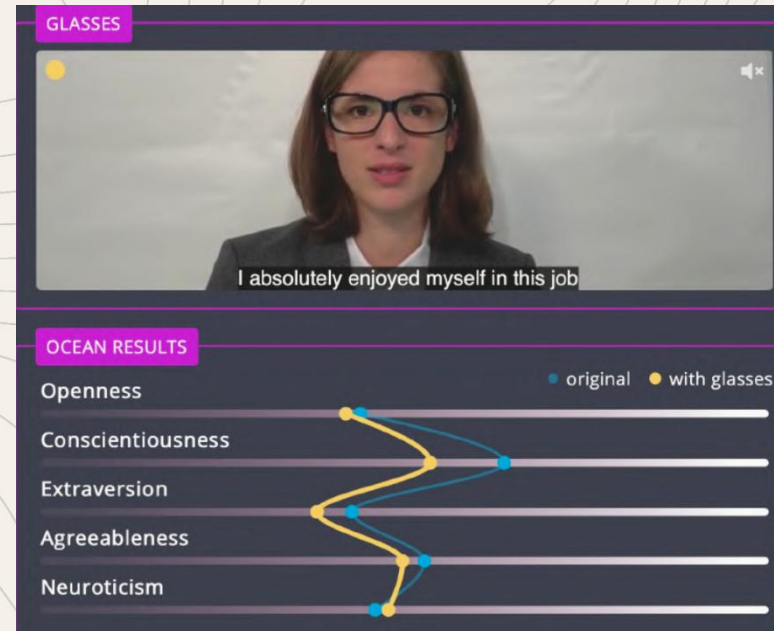
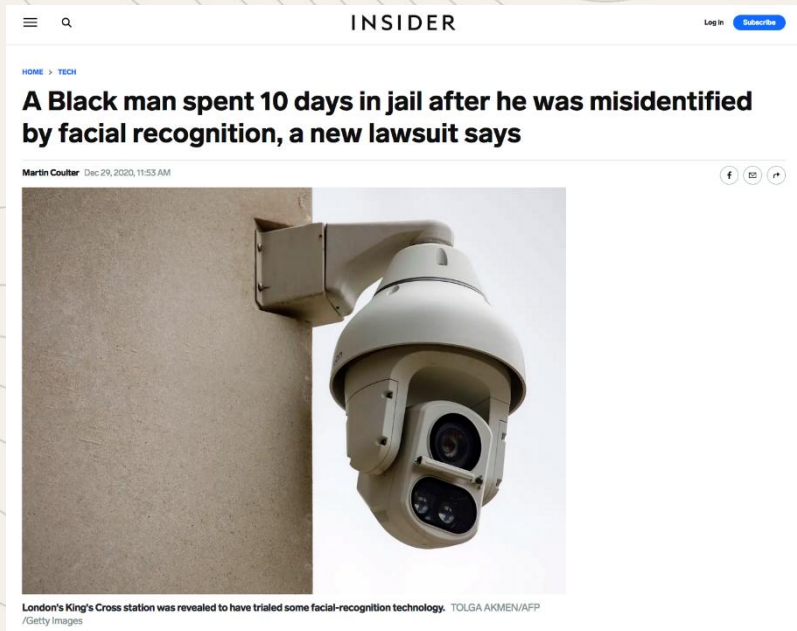


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Problems

- Lack of transparency and predicability

Both by black-box systems for which it is not clear how the output originated, and by designers/users

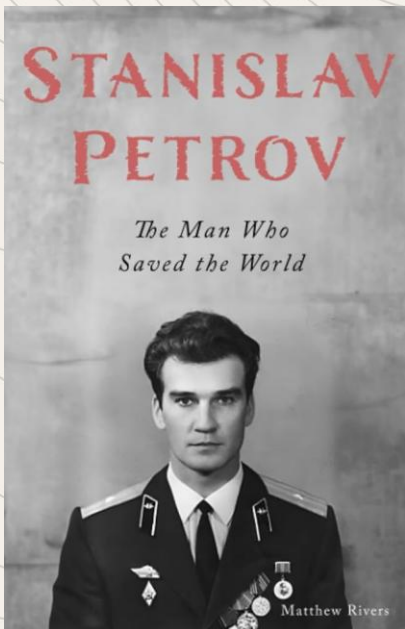


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Problems

- Automation bias

Too much or too little trust in the system can have major consequences (hesitation has benefits!)
+ skills degradation



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Problems

- Responsibility

- Question of who is responsible in case something goes wrong
- Systems change how we act and view ourselves as responsible agents
 - ➔ Risk of misplaced responsibility: moral disengagement with offloading of responsibility
 - ➔ Risk of humans feeling more responsible than they should (cf. moral injury)



Uber self-driving car test driver pleads guilty to endangerment in pedestrian death case

By Rebekah Riess and Zoe Sottile, CNN
© 2 min read · Published 2:27 PM EDT, Sat July 29, 2023



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Thank you