

Artificial Intelligence: What it means, why it matters and what policy challenges it poses

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Humans v Machines

- AI is not always aimed at replicating human reasoning and behaviour
- Sometimes 'the human way' is not the 'best' way

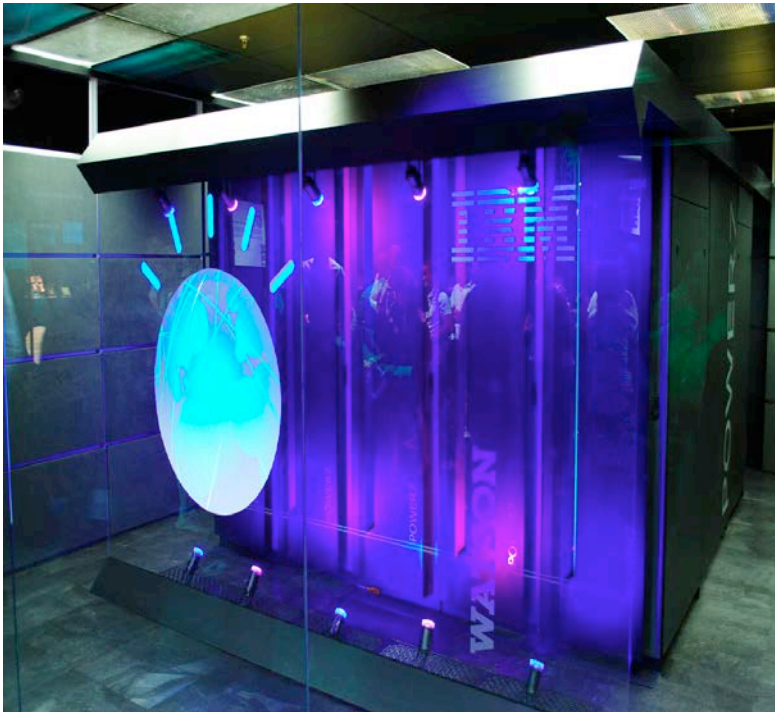


Wikipedia: The
Kasparov Agency



Wikipedia: Kimse

We all know that AI is making the headlines



IBM's Watson



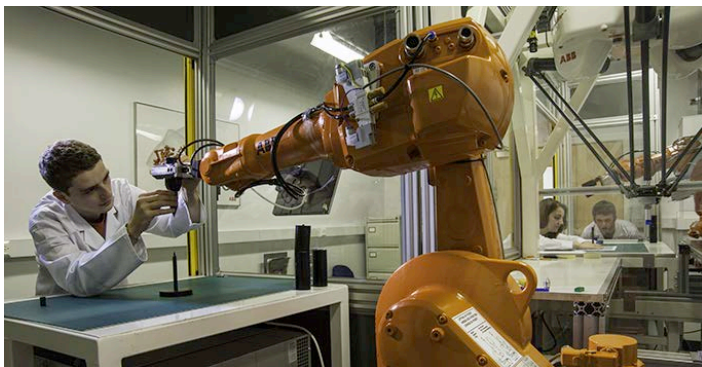
Google DeepMind's AlphaGo

Next step: apply general AI solutions to specific domains

AI tackles problem solving, using a variety of techniques



Wikipedia: Nohau

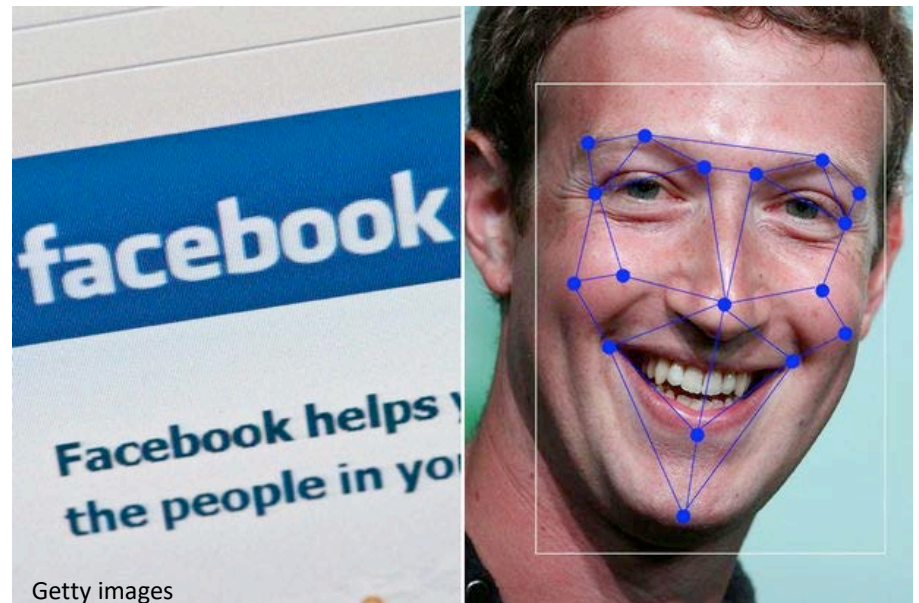
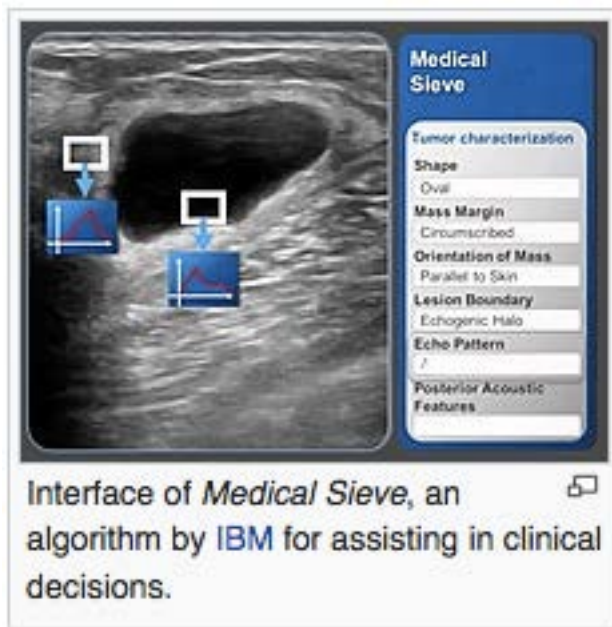


Don't believe the hype?

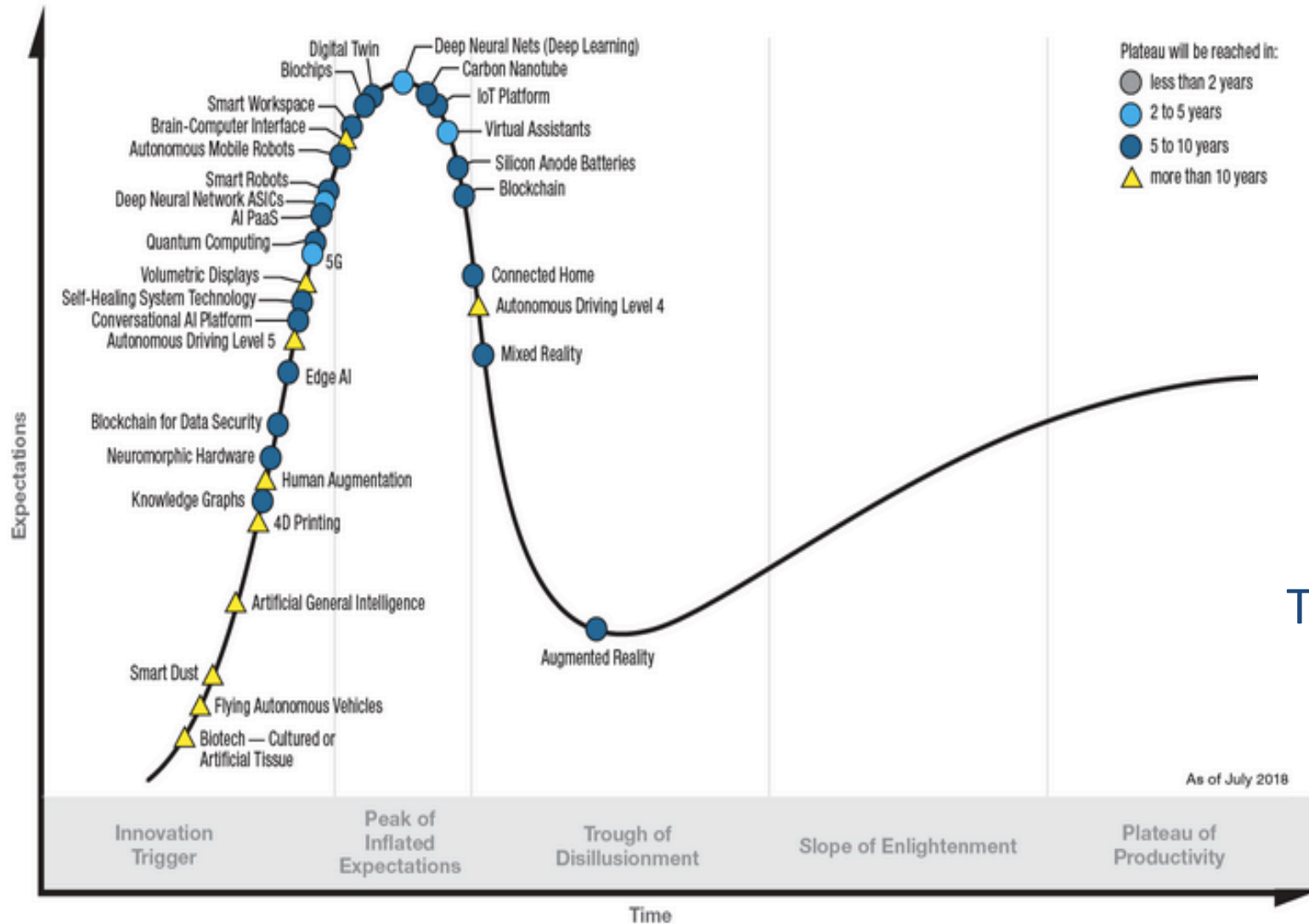


“Without ML [machine learning], Amazon.com couldn't grow its business, improve its customer experience and selection, and optimize its logistic speed and quality.”

<https://aws.amazon.com/machine-learning/what-is-ai/>



Hype Cycle for Emerging Technologies, 2018



Gartner's
2018 Hype
Cycle for
Emerging
Technologies

gartner.com/SmarterWithGartner

Demand for access to AI expertise is surging

- Driven by the advances in AI technology and the ubiquity of data in plethora of domains
 - Computer science and AI degree programmes have also become more popular
- All of which has not gone un-noticed:



HOUSE OF LORDS

Select Committee on Artificial Intelligence

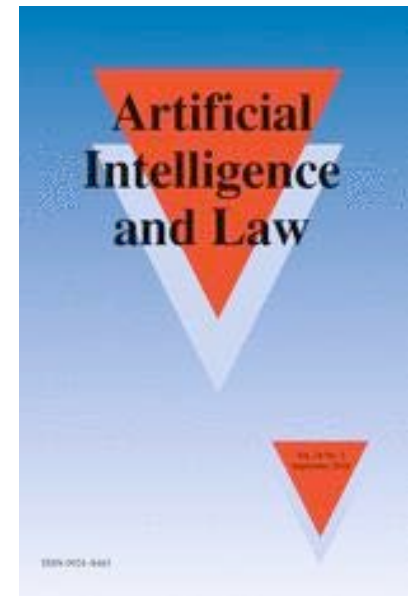
Report of Session 2017–19

**AI in the UK:
ready, willing and
able?**

How do we move academic research into practice?

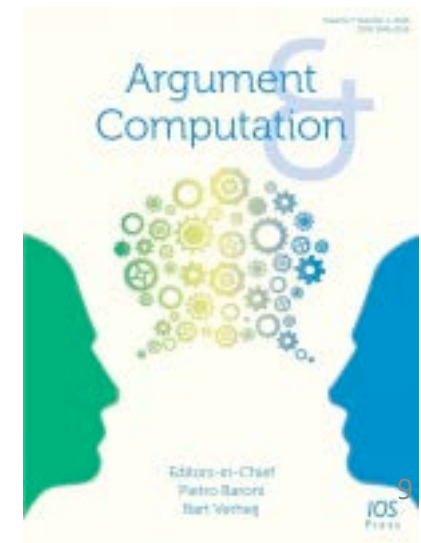
- Requires partnership, which can take a variety of forms: e.g. knowledge transfer projects, proof of concept exercises, PhD projects.
- Example: AI and Law case study
- 2014 research in computer science to develop a methodology for capturing knowledge of a legal domain, which is then used for deciding cases.
 - “Who should win: plaintiff or defendant?”
- Evaluated on well-studied examples from the AI and Law literature
 - Success: 96% accuracy in replicating the decisions of the human judges

Innovate UK



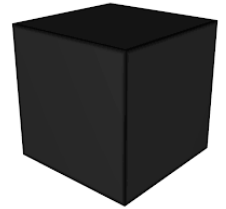
Case Study: AI and Law

- Next step: evaluate on current cases by applying to a new 'real world' domain as part of a collaborative project with law firm Weightmans
- Potential benefits for end users:
 - Capture repetitive tasks for automation
 - Free up lawyers' time for most cognitively challenging tasks
 - Promote consistent decision making
 - Facilitate access to justice
 - Business growth



New technologies, new challenges

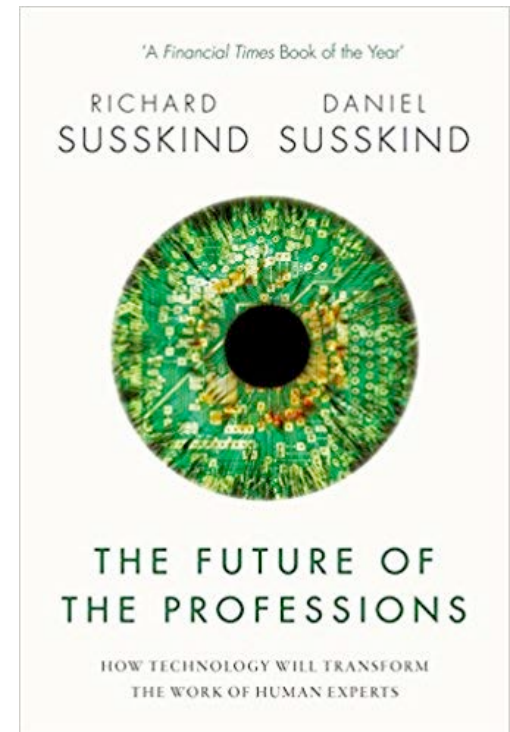
- Many law firms want systems that can provide explicit justifications for automated decisions
 - Black boxes are not acceptable
- Legal implications of the legal AI systems
 - Do predictions satisfy ‘correct’ legal reasoning?
 - Privacy concerns (hello GDPR!)
- Is society ready to allow AI systems to make legal decisions?
 - Reliability of human decision making vs machine decision making
 - UK online courts proposal: “[...] recommendation is that HM Courts & Tribunals Service ... should establish a new, Internet-based court service, known as HM Online Court”



ONLINE DISPUTE
RESOLUTION
FOR LOW VALUE CIVIL CLAIMS
Online Dispute Resolution Advisory Group

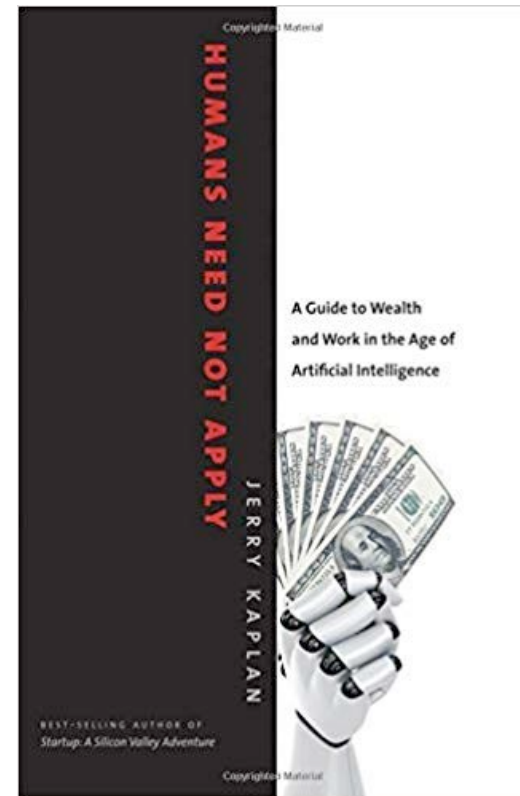
The Future of Jobs

- The jobs market is already changing: recruitment of data scientists, AI consultants, machine learning leads, innovation managers, ...
 - Humans: please apply!
- Inclusivity issues:
 - The need for up-skilling of current workforce
 - The need for graduates to have familiarity with the latest technology being used in their field
 - Regional disparity in the concentration of technology developments



Further Societal Challenges

- What level of regulation do we want for AI technologies?
 - Balancing risk and innovation
- How will the AI gains be distributed?
 - Robot taxes?
- Should we be preparing for mass unemployment, and if so, how?
 - Re-training? Universal basic income?
- How do we ensure that AI technologies meet human ethical requirements?
 - A collaborative approach is needed



Concluding Thoughts: Humans + Machines

- AI is no longer the realm of science fiction – it is the here and now
- But we are just at the start of the journey in adjusting to the new world
- For the Fourth Industrial Revolution to be inclusive, the conversations we are having now need to include ALL stakeholders



Thank you for your attention!

Any questions?