Artificial intelligence, decision-making and the law

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Introduction

- This talk:
  - What is artificial intelligence?
  - Machine learning
  - Public sector applications of machine learning
  - Legal issues on the horizon

What is artificial intelligence?

What is artificial intelligence?

- UK Government Guidance, A guide to using artificial intelligence in the public sector (January 2020):

- *"AI can be defined as the use of digital technology to create systems capable of performing tasks commonly thought to require intelligence."*

- *"AI is constantly evolving, but generally it involves machines using statistics to find patterns in large amounts of data…[it can] perform repetitive tasks without the need for constant human guidance"*

- Public sector applications:
  - Complex modelling
  - Tailored public services
  - Automate repetitive tasks e.g. data entry
  - <u>Decision making</u>

Machine Learning

- A subset of AI
- refers to the development of digital systems that improve their performance on a given task over time through experience
- Sort of like training an animal: the computer doesn't understand why it is doing a task, but in theory it can become better and better at it through repetition
- Particularly useful for training AI to categorise data and spot patterns in large data sets
- Applications for e.g. facial recognition, speech-to-text translation, driverless cars, fraud detection
- Particularly interesting applications for public sector decision-making

Public sector applications of machine learning

1. DVSA and MOT testing

- Each year, 66,000 testers conduct 40 million MOT tests in 23,000 garages
- across the UK
- The Driver and Vehicle Standards Agency (DVSA) developed a machine-learning approach that analyses vast amount of testing data, which it then combines with day-to-day operations to develop a risk score for garages and testers. From this the DVSA is able to direct its enforcement officers' attention to garages or MOT testers who may be either underperforming or committing fraud.
- By identifying areas of concern in advance, the examiners' preparation time for enforcement visits has fallen by 50%

Public sector applications of machine learning

2. Home Office decision-making

The Home Office has created an AI streaming tool that contributes to immigration policy decisions

- The tool allocates people to one of three categories based on a series of risk categories

- Historically this is a task that would be carried out by an immigration caseworker

The Home Office also uses a separate AI tool to check DWP and HMRC data to verify residence within the Settled Status Application process

3. Local authority decision-making

- Some local authorities now use AI risk-based verification processes in relation to Housing Benefit and Council Tax Benefit applications

- There is no fixed verification process for eligibility for these benefits However, since 2012, the DWP has allowed local authorities to use risk-based verification systems to identify fraudulent claims

- In other words AI is being used to determine individual applicants' risk rating

Legal issues

Legal issues: discrimination

- The problem with AI algorithms is that it is very easy for them to discriminate if they are left to make decisions without human oversight e.g. who is a fraud risk for the purposes of awarding benefits
- If AI algorithms are trained using skewed or incomplete information, or designed in a biased way, then the results may be off- which happens fairly often as their designers and testers are often not particularly diverse
- Example: race and facial recognition software
- There is currently a live legal challenge to the Home Office's visa streaming tool under the EA 2010, on the basis that it uses nationality as a risk factor
- The allegation is that this is no different to the unlawful scheme the Home Office used to run, where Roma applications were treated with increased scrutiny because Romas were deemed to be higher risk

Legal issues: discrimination

- It has also been suggested that there are potential discrimination issues with local authorities' use of risk-based verification systems
- The training data and algorithms for these systems is often opaque, so it is possible that discriminatory criteria might be applied or that the algorithm has learnt a biased correlation
- Example: Central Bedfordshire Council's Audit Committee report, 9 April 2018: a random sample of 10 "high risk" applicants were all working women
- One solution may be equality auditing of datasets and algorithm design

Legal issues: accountability in decision-making

- What happens when AI goes seriously wrong?

- The failure of an AI system might be the ultimate responsibility of the councils adopting them, but individual accountability is important both for lessons learned and wider public accountability e.g. public inquiries

- One of the problems with machine learning is it is not always clear why something has gone wrong: because the system is "thinking" in a sophisticated way it becomes harder to analyse after the fact

Legal issues: accountability in decision-making

- House of Lords AI Committee:

  "The number and complexity of stages involved in these deep learning systems is often such that even their developers cannot always be sure which factors led a system to decide one thing over another. We received a great deal of evidence regarding the extent and nature of these so-called 'black box' systems."

- There are also wider issues regarding corporate responsibility, shared responsibility for jointly-operated AI systems, and the use of third-party AI systems. Without clear accountability for AI, important lessons may be lost "like tears in rain"

- Finally, the increasing use of AI may stretch the limits of delegation of public functions under e.g. s.101 of the LGA 1972

Legal issues: GDPR

- Machine learning tools only work effectively by being fed large amounts of data

- In the context of public sector decision making that often means personal data

- In order to rely on AI councils will increasingly need to hold large databases of information which come with the risk of data breaches and erosion of public trust

- See also GDPR Article 22: *"The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her."*
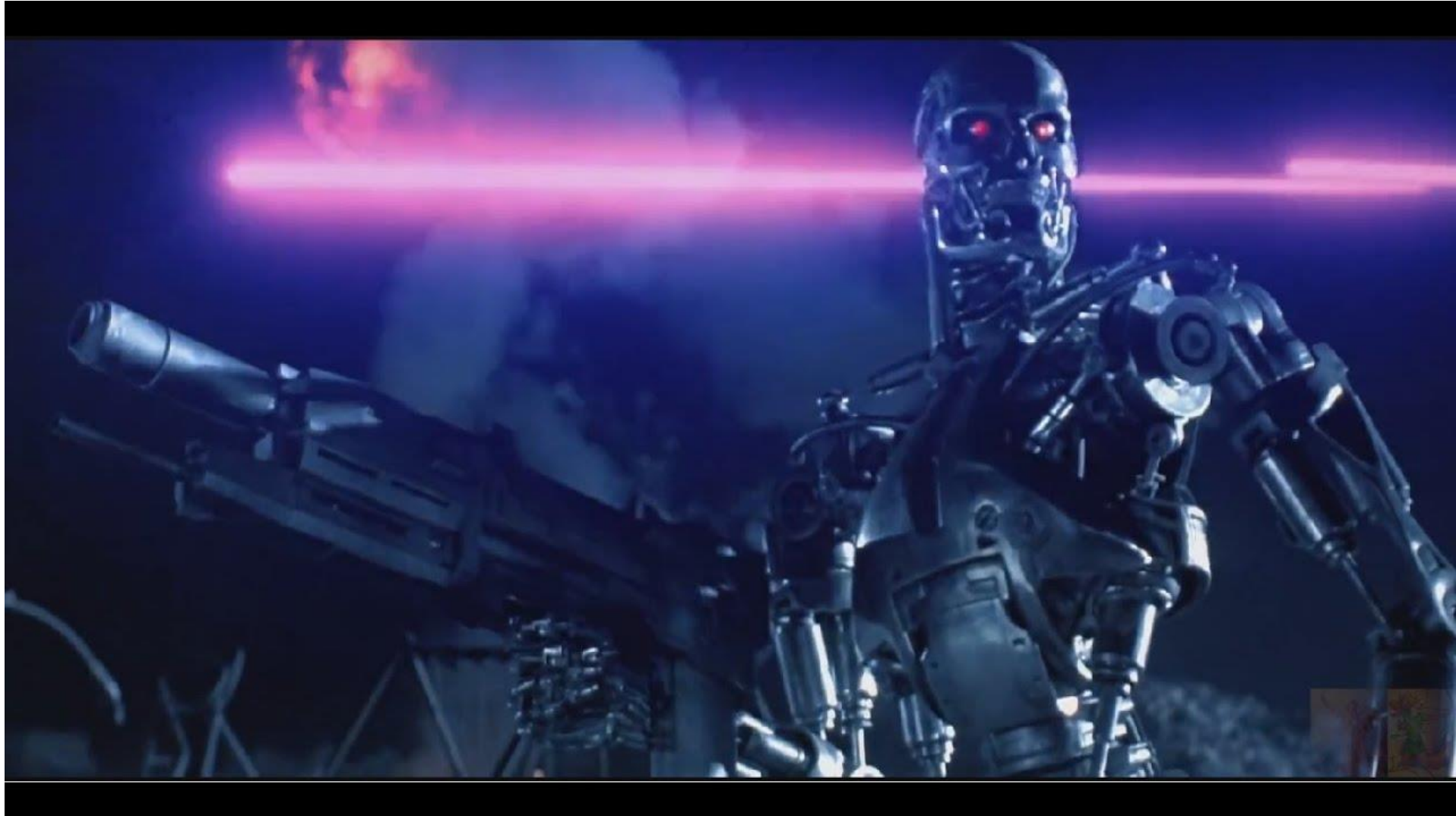
Conclusion: Utopia?

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- AI systems can help ease the burden on local authorities by reducing costs and the need to carry out repetitive tasks
- They can assist with faster decision-making, as with DVSA, and the creation of more sophisticated modelling of risk
- They will be essential to tackling some of the most complex problems we face e.g. pollution and climate change
- AI systems are here to stay and it is important we and the public understand how they work

Conclusion: …or dystopia?

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- However, it is important we understand the limitations of AI systems
- In particular, they are only as in impartial as their creators and the information they are learning from
- A skewed data set will lead to skewed decision-making: the potential for indirect or even direct discrimination is enormous and already being tested in the courts
- There are also legal issues relating to data protection and accountability
- Finally, there presentational issues with an over-reliance on AI: the public may not have a pleasant experience of local government if all their interactions with the council are e.g. with a welfare chatbot. How we design public-facing AI systems to put people at ease is one of the key tasks of the next 10 years: i.e. UX and UI Design

References

- Law Commission, Automated Vehicles Project (ongoing)

https://www.lawcom.gov.uk/project/automated-vehicles/

- UK Government Guidance, A guide to using artificial intelligence in the public sector (January 2020)

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- House of Lords AI Committee:

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Thank you for listening

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