



**QUEEN'S  
UNIVERSITY  
BELFAST**

# **AI: predicting and modelling**

## **Seminar 3**

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# ML and AI

- Doing things that human agents cannot do
  - Managing, parsing and 'making sense of' vast information flows
  - Innovative decision-making strategies?
  - Eliminating human bias?
- But not to be hyped
  - Which patterns are identified?
  - What bias remains?



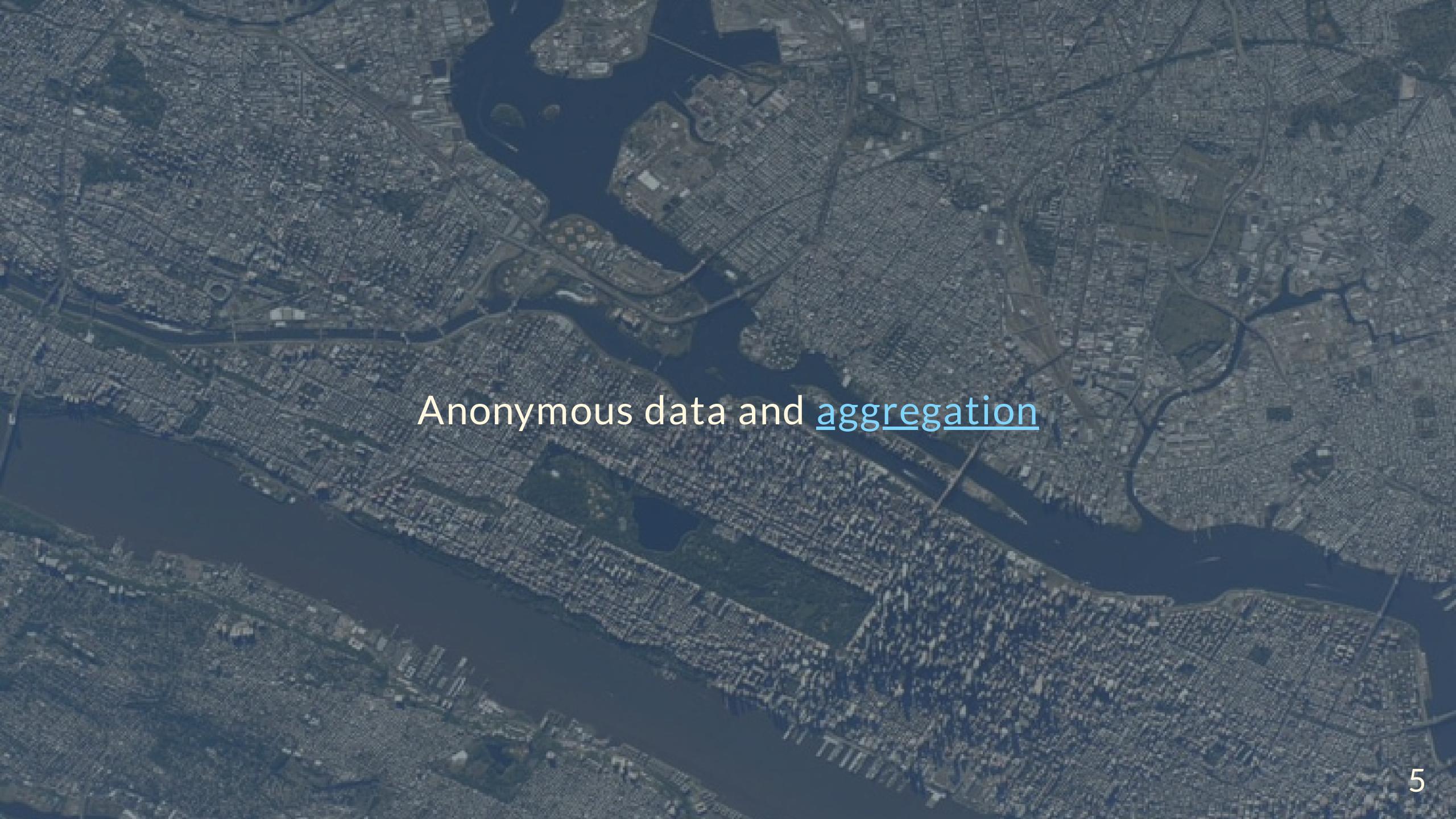
# Back to:

- Data
- Process
- Output

# Data

- The [Kaggle facial recognition dataset](#)
- The [Flickr-Faces-HQ Dataset](#)
- The National Institute of Standards  
[Mugshot Dataset](#)
- [How your childhood photos could help stop child exploitation](#)
- Labelling: see Amazon's [Mechanical Turk](#)  
[\(median wage \\$2/£1.48\)](#)



The background image is an aerial photograph of a large city, likely New York City, showing the Manhattan skyline, the Hudson River, and several bridges. The image has a dark, slightly grainy texture.

Anonymous data and aggregation



# Big data: vectors of exploitation?

- All (human) data must originate *with someone* (and can be manipulated or poisoned)
- All training data must be labelled *by someone*
- Data processing is not theoretical, *but it is constructed*
  - It is not neutral
  - Nor are categories natural
- Environmental impacts of training algorithms on data

# Algorithms: vectors of power?

- Framing problems, *\_what* it means to solve them and *why* are matters of decision-making power
- The parameters of *worthwhile effort* are significant
- Rendering the world *legible* is an act of authority
- How we are sorted is an act of creation rather than an act of discovery

# Outputs: vectors of control?

- Does AI regulate people's lives *in a special way*?
  - If so, how does it do so?
  - And does it matter that it does so?
- That is, is AI different to other kinds of technological control?



# Visa decision-making

“ [To] support transformation and cost-reduction by enabling streaming of all applications according to customer attributes, which will enhance the security of decision-making and support more efficient processing.

”

Independent Chief Inspector of Borders and Immigration, 2017, para. 7.7

“ When managers were challenged on decisions, they “appeared to use the streaming rating to justify [those] decisions” and ‘deviations’ that triggered checks of decisions included “where the decision is not consistent with the streaming tool result” ”

Independent Chief Inspector of Borders and Immigration, 2017, para. 7.11; 9.32)

# The Legal Profession

# Impact on the profession

- Scoring: criminal justice and judicial decision-making
- Searching: e-discovery and pattern recognition
- Automating: case-management

**Table 1.** Use of AI-assisted legal technology by solicitors in the UK

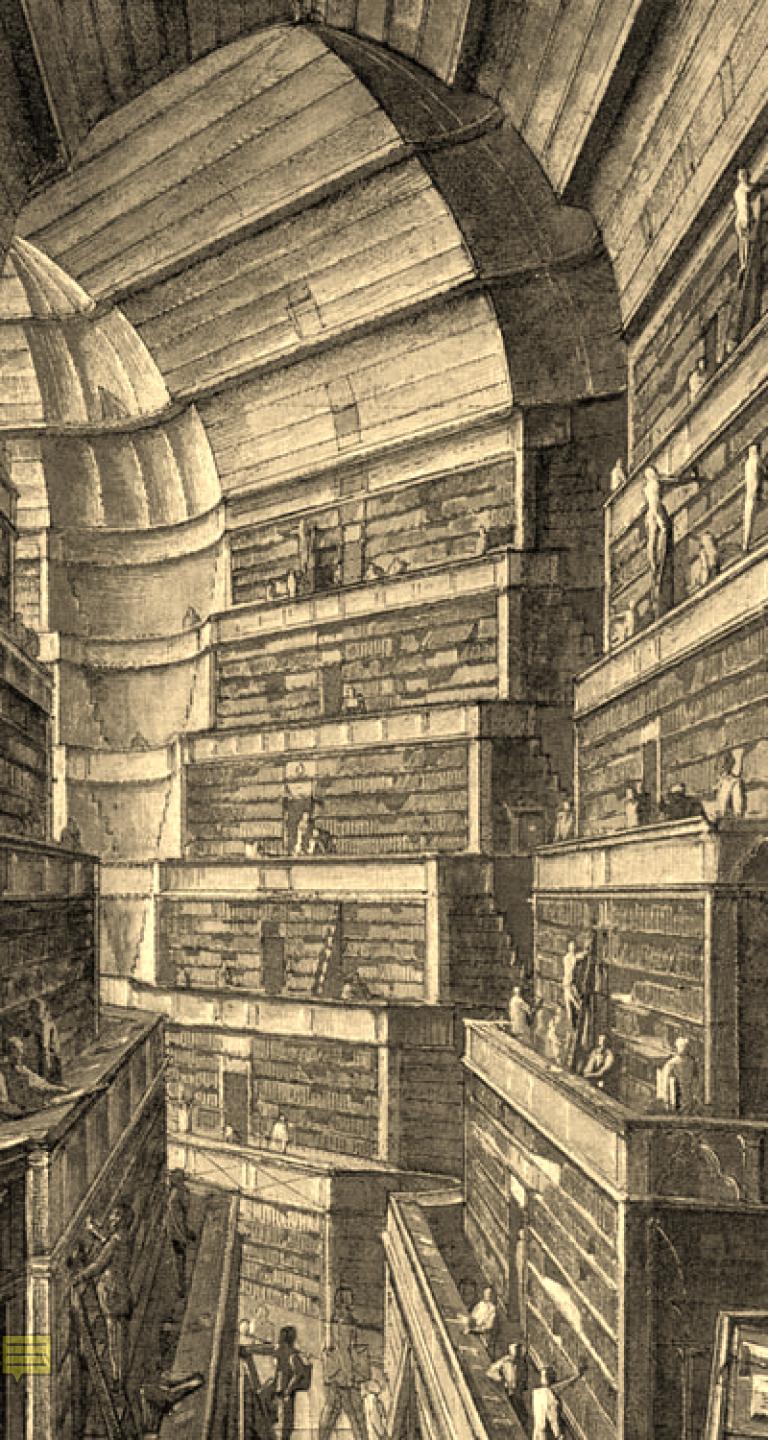
Use-case for AI-assisted legal technology	# using	# not using	% using
eDiscovery / eDisclosure / technology-assisted review	48	301	13.8%
Predictive analytics for litigation	7	342	2.0%
Due diligence	57	292	16.3%
Contract analytics	34	315	9.7%
Regulatory compliance	41	308	11.7%
Legal research	98	251	28.1%
Fee-earner utilisation analytics / predictive billing	29	320	8.3%
Other	25	324	7.2%
Any use-case for AI-assisted legal technology	169	180	48.4%

Armour J, Parnham R and Sako M, 'Unlocking the Potential of AI for English Law' (2021) 28 International Journal of the Legal Profession 65, 69 ([Link](#); [QUB Proxy](#))

# Jobs erased

- Automation and legal professional roles
  - In-house legal departments
- Intermediaries and clerical work
- Contract drafting and efficiencies
- Not just your jobs: your clients' jobs too





# Jobs reshaped

- Search and contract: what skills required to read and explain?
- The emergence of multi-disciplinary teams (implications for career)

# Jobs generated

- Understanding and defending automated authorship
- Lawyers as translators
  - in teams
  - for and of their clients?
- ~~Algorithmic law~~ Algorithmically *inflected* law and regulation





# And beyond...

- A world where prediction displaces observation?
- What processes produces the evidence bases upon which products are founded?
- Rethinking experience? Rethinking accountability and representation?

“ although valuable, contributions that underline that human agents should take full responsibility for the machines do not capture the profound transformative power that AI holds and deploys whenever adopted in a decision-making process, even if only to assist the decision make ”

Gualdi and Cordella, 2021, p. 2304

# The unique regulatory challenge

- When is AI *learning* a process of discovery and when is it a process of control?
- When is AI *data-mining* a process of discovery and when is it a process of control?
- What are the parameters of fairness in technological interactions with people?
  - And when ought law do something about it?

# The proposed AI regulation

- Prohibited innovations
  - Manipulation (eg covert techniques; exploiting vulnerabilities to promote harms)
  - Evaluating trustworthiness
- High-risk systems
  - Safety components or products
  - Biometrics
  - Subject to significant risk management lifecycles
- Limited risks: transparency obligations

# Thank you!