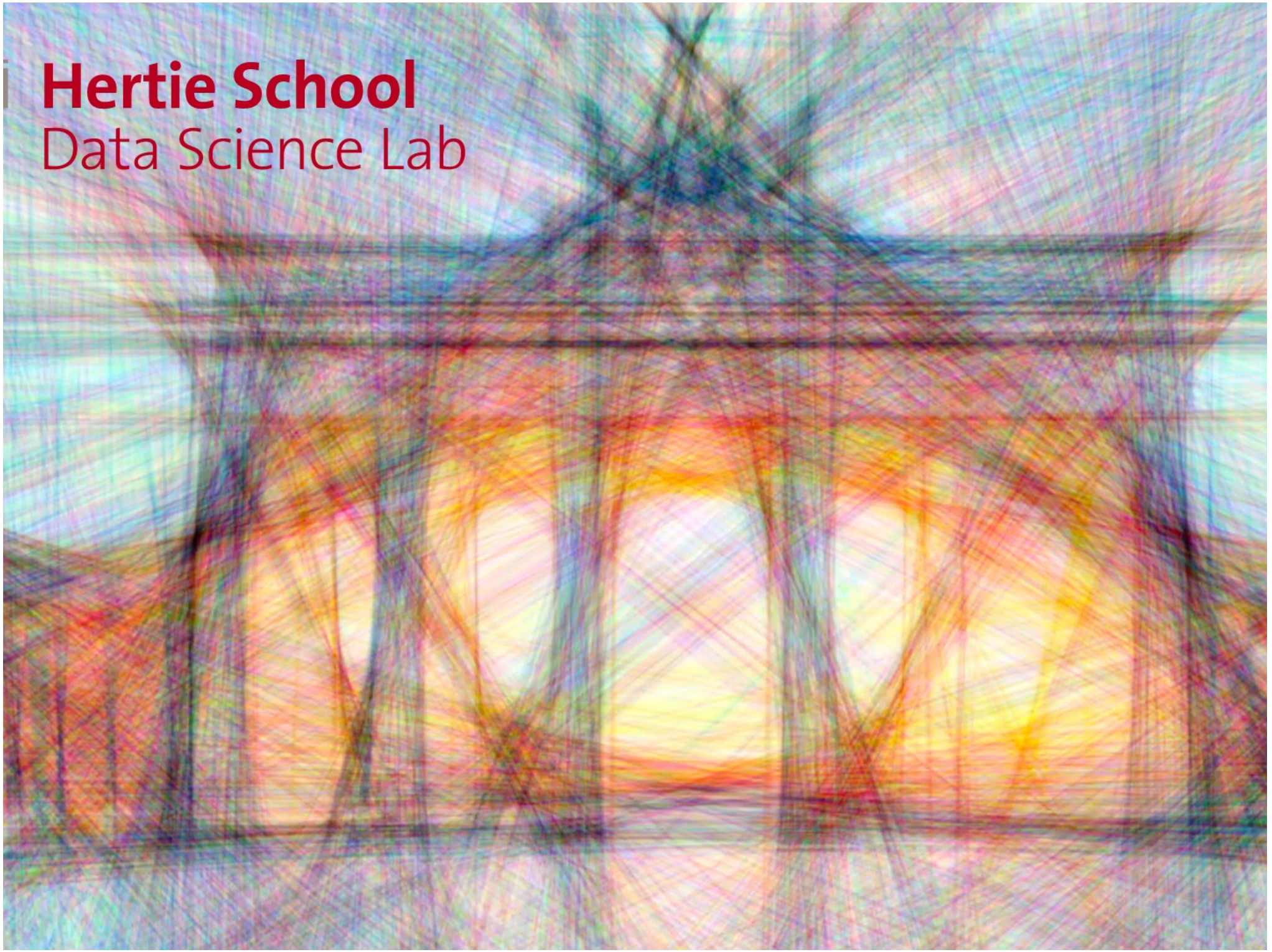

Hertie School
Data Science Lab

AI, Government, Trust

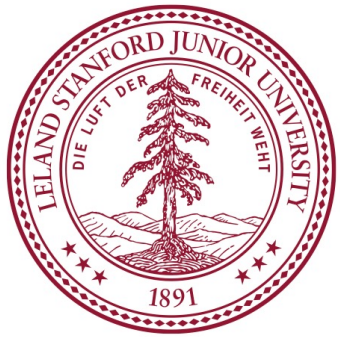
Slava Jankin

Data Science Lab

Hertie School

AI for the public sector: Trustworthiness of AI applications

AI and Data science to enable better governance



Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies

REPORT SUBMITTED TO THE ADMINISTRATIVE CONFERENCE OF THE UNITED STATES

TABLE 2. TOP TEN AGENCIES AND SUBAGENCIES BY NUMBER OF USE CASES

Agency Name	Number of Use Cases
Office of Justice Programs	12
Securities and Exchange Commission	10
National Aeronautics and Space Administration	9
Food and Drug Administration	8
United States Geological Survey	8
United States Postal Service	8
Social Security Administration	7
United States Patent and Trademark Office	6
Bureau of Labor Statistics	5
Customs and Border Protection	4

FIGURE 1. AI USE CASES BY POLICY AREA

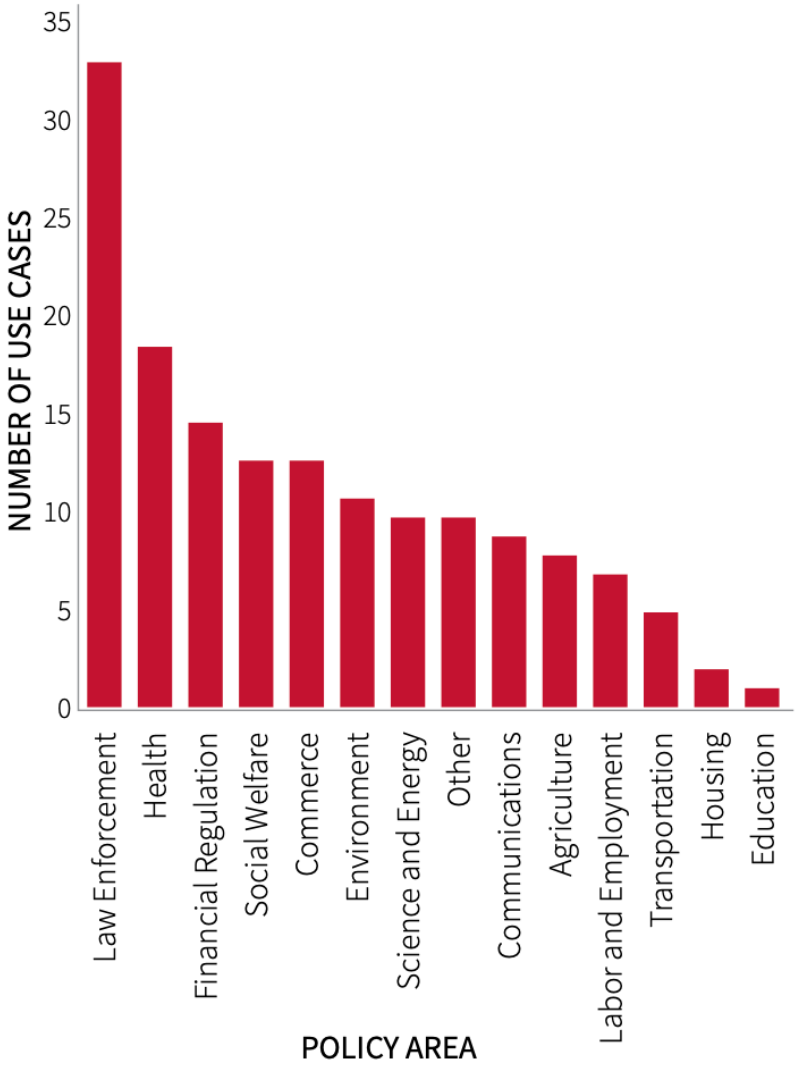


FIGURE 2. AI USE CASES BY GOVERNANCE TASK

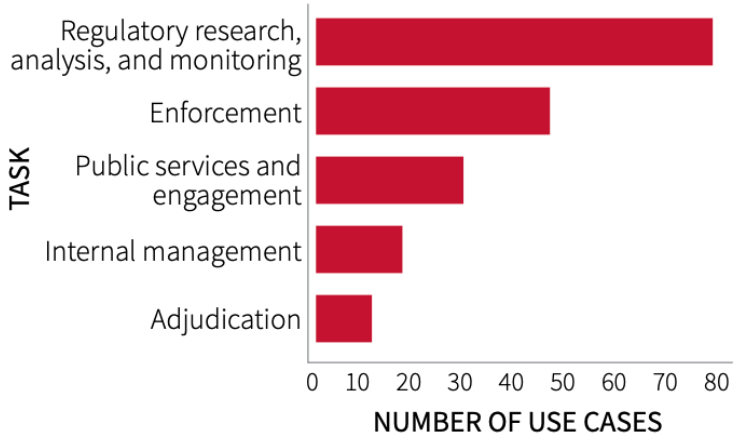


TABLE 1. ALGORITHMIC GOVERNANCE TOOLS BY USE CATEGORIES

Use Type	Description	Examples
Enforcement	Tasks that identify or prioritize targets of agency enforcement action	• Securities and Exchange Commission, Centers for Medicare and Medicaid Services, and Internal Revenue Service predictive enforcement tools • Customs and Border Protection and Transportation Security Administration facial recognition systems • Food Safety and Inspection Service prediction to inform food safety site testing
Regulatory research, analysis, and monitoring	Tasks that collect or analyze information that shapes agency policymaking	• Consumer Financial Protection Bureau analysis of consumer complaints • Bureau of Labor Statistics coding of worker injury narratives • Food and Drug Administration analysis of adverse drug events
Adjudication	Tasks that support formal or informal agency adjudication of benefits or rights	• Social Security Administration system for correcting adjudicatory errors • U.S. Patent and Trademark Office tools for adjudicating patent and trademark applications
Public services and engagement	Tasks that support the direct provision of services to the public or facilitate communication with the public for regulatory or other purposes	• U.S. Postal Service autonomous vehicles project and handwriting recognition tool • Department of Housing and Urban Development and U.S. Citizenship and Immigration Services chatbots • Agency analysis of submitted rulemaking comments
Internal management	Tasks that support agency management of resources, including employee management, procurement, and maintenance of technology systems	• Department of Health and Human Services tool to assist procurement decision-making • General Services Administration tool to ensure legal compliance of federal solicitations • Department of Homeland Security tool to counter cyberattacks on agency systems

FIGURE 5. AI USE CASES BY MACHINE LEARNING METHOD

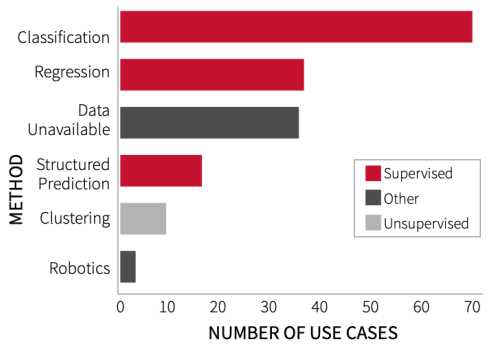


FIGURE 6. AI USE CASES BY DATA TYPE

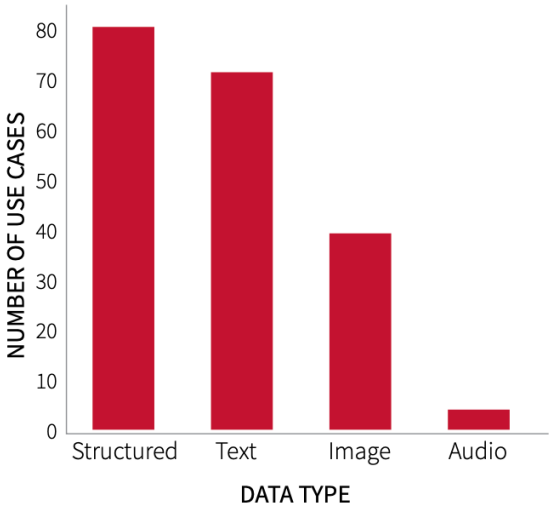


FIGURE 4. AI USE CASES BY DEVELOPER TYPE

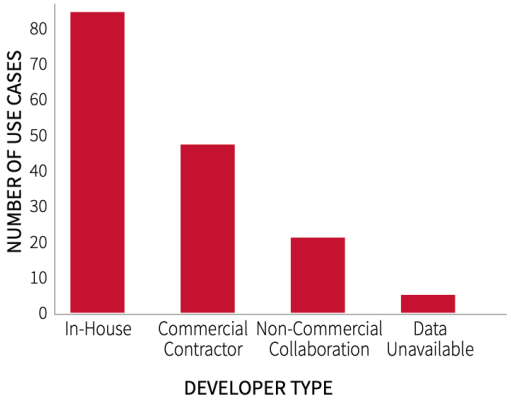


FIGURE 7. AI USE CASES BY LEVEL OF SOPHISTICATION

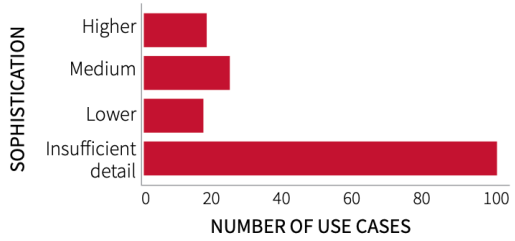
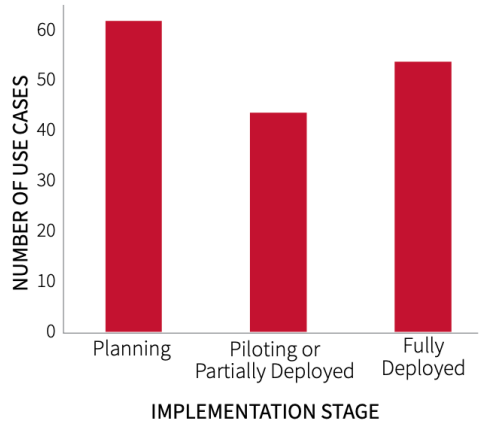


FIGURE 3. AI USE CASES BY IMPLEMENTATION STAGE



Why AI in Govt?

- Enable public sector to be more:
  - efficient,
  - responsive,
  - predictive, and
  - fair.

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Councils use 377,000 people's data in efforts to predict child abuse

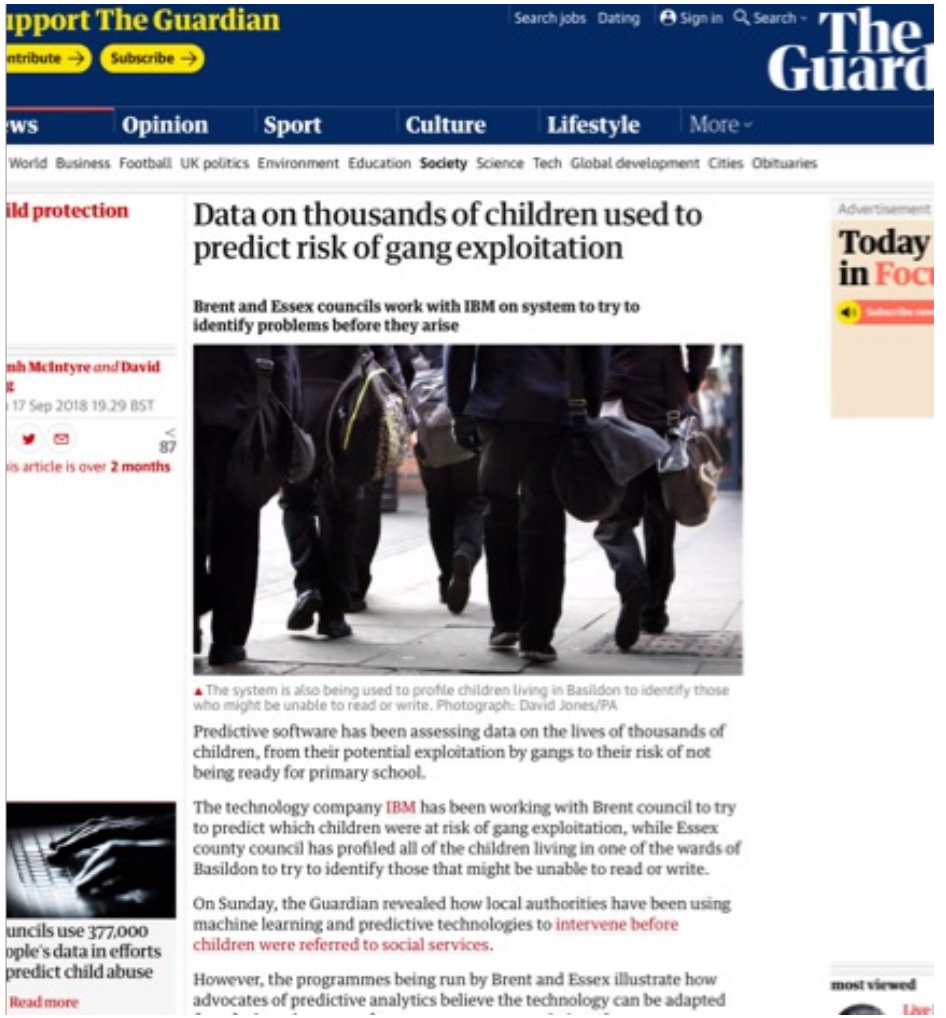
Exclusive: Use of algorithms to identify families for attention raises stereotyping and privacy fears

▲ At least five councils have developed or implemented a predictive analytics system to safeguard children. Photograph: Alamy Stock Photo

Vast quantities of data on hundreds of thousands of people is being used to construct computer models in an effort to predict child abuse and intervene before it can happen, the Guardian has learned.

Amid mounting financial pressure, local councils are developing "predictive analytics" systems to algorithmically identify families for attention from child services, allowing them to focus resources more effectively.

But while the new algorithmic profiling could be one way of helping social



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uncils use 377,000 ople's data in efforts predict child abuse

Read more

Data on thousands of children used to predict risk of gang exploitation

Brent and Essex councils work with IBM on system to try to identify problems before they arise

▲ The system is also being used to profile children living in Basildon to identify those who might be unable to read or write. Photograph: David Jones/PA

Predictive software has been assessing data on the lives of thousands of children, from their potential exploitation by gangs to their risk of not being ready for primary school.

The technology company IBM has been working with Brent council to try to predict which children were at risk of gang exploitation, while Essex county council has profiled all of the children living in one of the wards of Basildon to try to identify those that might be unable to read or write.

On Sunday, the Guardian revealed how local authorities have been using machine learning and predictive technologies to intervene before children were referred to social services.

However, the programmes being run by Brent and Essex illustrate how advocates of predictive analytics believe the technology can be adapted

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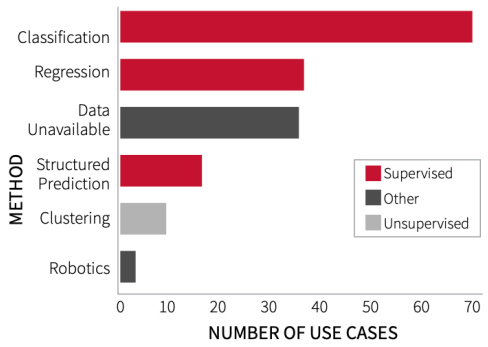
Trust your peers…

- “Some departments expressed concern about the safety of their data if they share it with others, especially if they cannot confirm the security arrangements in other organisations. While understandable and right, this can discourage opportunities to use data to its full potential.”

National Audit Office (2019) “Challenges in using data across government.”

Why the application of data science and AI in administration requires in-house capacities?

FIGURE 5. AI USE CASES BY MACHINE LEARNING METHOD



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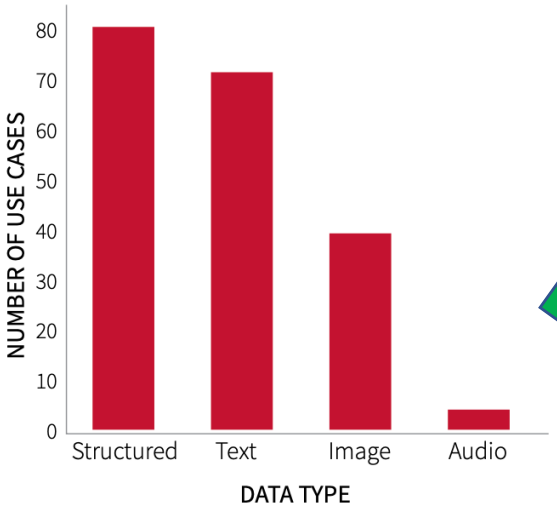

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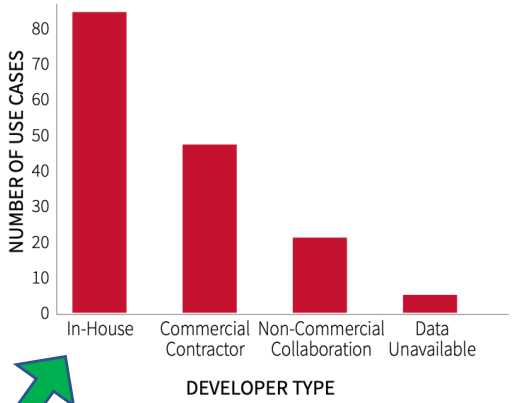

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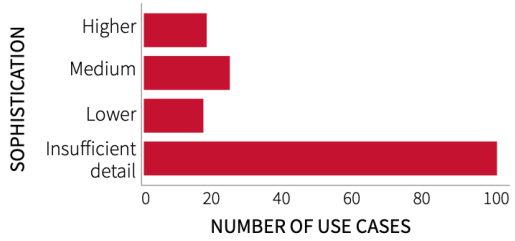

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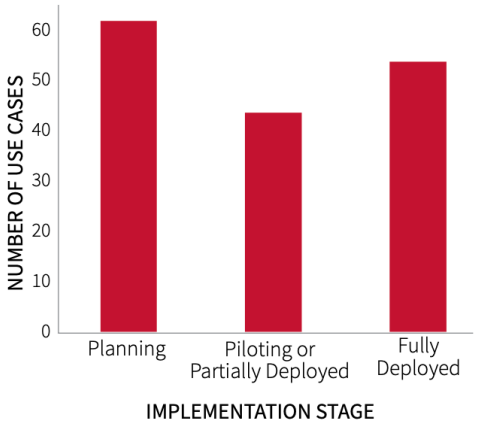

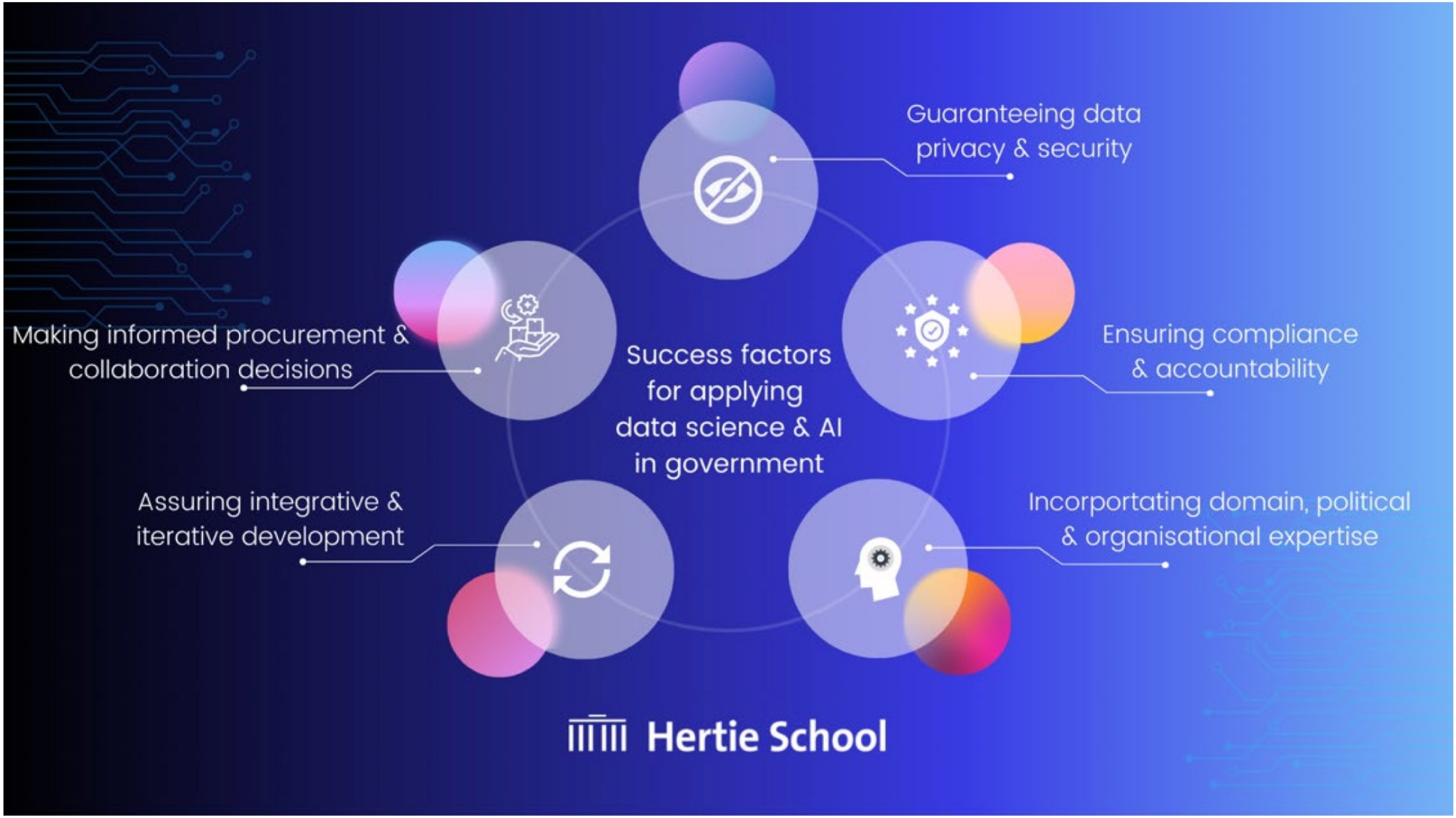
Guaranteeing data privacy & security
Making informed procurement & collaboration decisions
Success factors for applying data science & AI in government
Ensuring compliance & accountability
Assuring integrative & iterative development
Incorportating domain, political & organisational expertise
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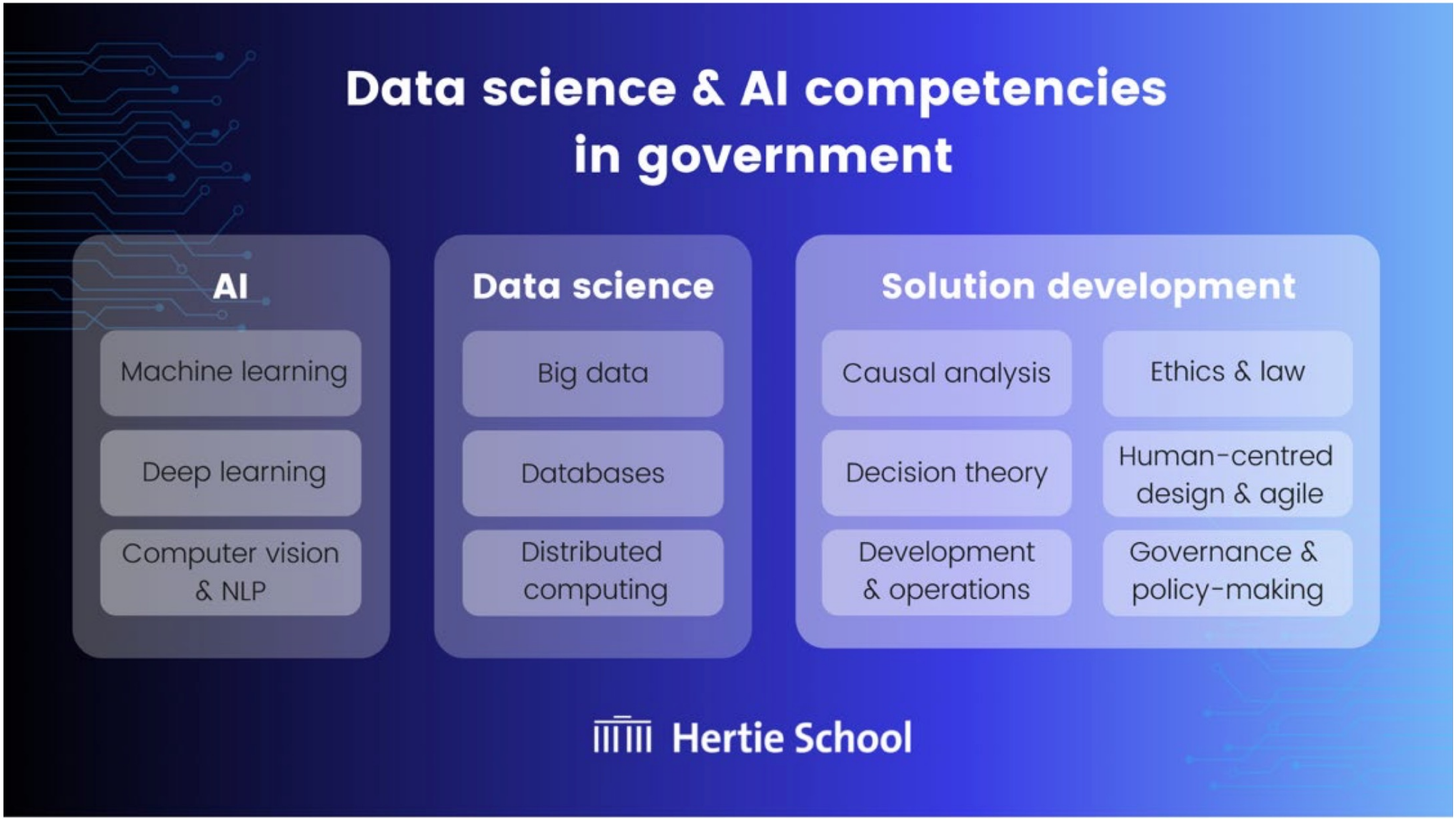
Building in-house capacity: also building trust


Data science & AI competencies in government
AI
Machine learning
Deep learning
Computer vision & NLP
Data science
Big data
Databases
Distributed computing
Solution development
Causal analysis
Ethics & law
Decision theory
Human-centred design & agile
Development & operations
Governance & policy-making
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How to build data science & AI capacities in government

Recruitment

Adapt recruitment practices & improve job attractivity

Expertise

Establish communities of practice & centres of excellence

Cooperation

Collaborate with external experts & research institutions

Network

Strengthen interdisciplinary & intersectoral networks

Contest

Hold government-sponsored competitions & hackathons

Growth

Centralise capacities but continue to expand the base

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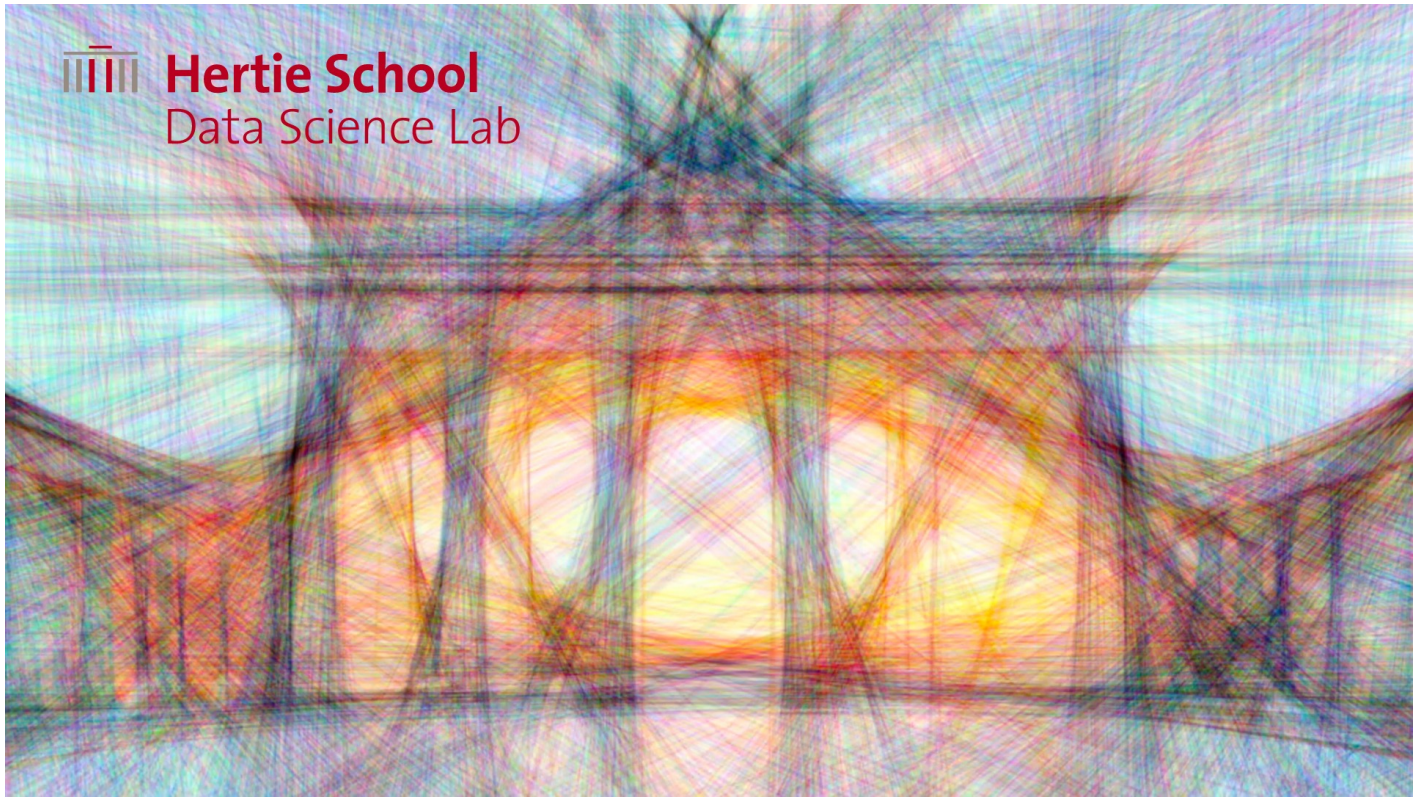

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