# AI in Public Administration

## Reconfiguring Organisations and People

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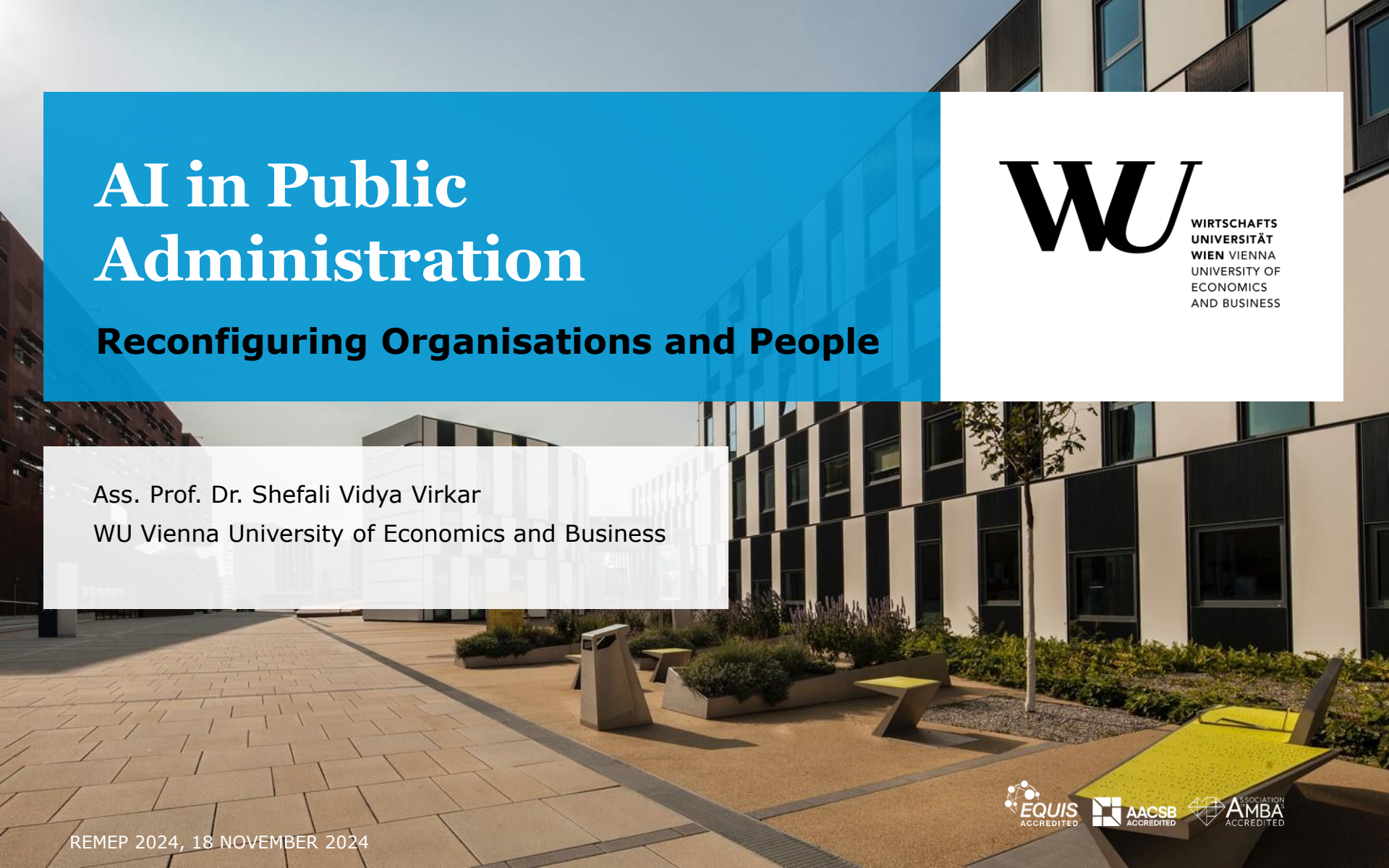

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# Agenda

- **Artificial Intelligence in Public Administration**
  - Introduction to Artificial Intelligence
  - Ethical Problems of Artificial Intelligence
  - Artificial Intelligence in Public Administration
  - Reconfiguring Organisations and People

# We Need to Talk About AI and Governance

- Artificial Intelligence has the potential to do tremendous harm, but it is more likely that it will do tremendous good.

- Artificial Intelligence will transform public administrations, both internally and in the way they engage with citizens. But there are substantial barriers.

- Artificial Intelligence will reconfigure the behaviour of actors in the political process, both as independent entities and with each other.

We need to talk about this now.

# Understanding Artificial Intelligence

- Research on Artificial Intelligence (AI) has interested scholars for decades.
- Agent-based systems (Oliviera & Cardozo, 1977), algorithms (Horowitz & Sahni, 1978), expert systems (Hurley & Wallace, 1986), chatbots (Shawar & Atwell, 2003).
- AI-driven innovation has the potential to significantly impact human activity in all walks of life.
- More so through its application in public sector ecosystems, where traditional forms of service provision, policy making, and enforcement can change rapidly.
- AI systems are becoming more complex and less predictable (Zuiderwijk et. al., 2021)
- Important to understand the multifaceted implications for public governance.

# Understanding Artificial Intelligence

- Artificial Intelligence is an umbrella term initially coined in the 1950s to describe systems, machines or computers that can imitate how humans think.
  - Can refer to either the field of research concerned with design of intelligent systems or the technology developed through the application of this body of knowledge.
    - Intelligence: "the ability to understand and learn well, and to form judgments and opinions based on reason".
    - Artificial: "made by people, often as a copy of something natural".

- AI may be understood as machines or computer systems that think and act humanly by (i) performing tasks that commonly require human intelligence, or (ii) think or act rationally using logic and considering all options. (Neumann et. al.)
- Human intelligence is simulated by machines (Russell & Norvig, 2022):
  - The ability to solve problems.
  - The ability to take decisions.
  - The ability to perceive or sense like humans.

# Ethical Problems of AI

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# Ethical Problems of AI

- Bias and discrimination

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  - AI systems can potentially learn implicit bias and reproduce, reinforce or amplify inequalities or discriminatory practices.

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  - AI systems have attracted persistent criticism for being opaque ‘black boxes’.

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  - Often people are not aware that their data are being gathered or that the data they provided in one context are being used in another context.

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- Manipulation and exploitation
  - The use of AI systems may also lead to new forms of manipulation, exploitation, and surveillance.

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  - Users subject to decisions, predictions or classifications produced by AI systems do not always have the opportunity to contest or challenge them.

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- Impact on individual autonomy and rights
- Disintegration of the social fabric

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- Impact on individual autonomy and rights
- Disintegration of the social fabric
  - In imitating human traits and affective responses, AI systems may also cause harm and greater social isolation.

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- Impact on individual autonomy and rights
- Disintegration of the social fabric
- Safety and security

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- Transparency and explainability
- Privacy and data protection
- Manipulation and exploitation
- Impact on individual autonomy and rights
- Disintegration of the social fabric
- Safety and security
  - AI use can result in safety and security concerns.

# AI in Public Administration

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# AI Use in Public Administration

Why think about AI in context of the public administration?

- Government actions are undertaken in the public interest.
- Government actions impact the most vulnerable people in society.
- Governments provide essential goods and services not supplied by the private sector.
- Government agencies must respond to social and political pressures not applicable to the public sector.
- Government agencies are also accountable to the public.
- Government agencies often implement initiatives in partnership with “others”.

# AI Use in Public Administration

- Public administration plays a vital role in the development and uptake of AI (Misuraca & van Noordt 2020).
  - Digitalisation of public services has also altered the nature of government-citizen interactions.

- However, current policy discourse focuses on the governance 'of' AI, and far less on governance 'with' AI.
  - This places government either in the role of a regulatory actor or facilitator.
  - In this role, the public sector sets out the framework conditions for the ethical deployment and use of AI by private actors and citizens.

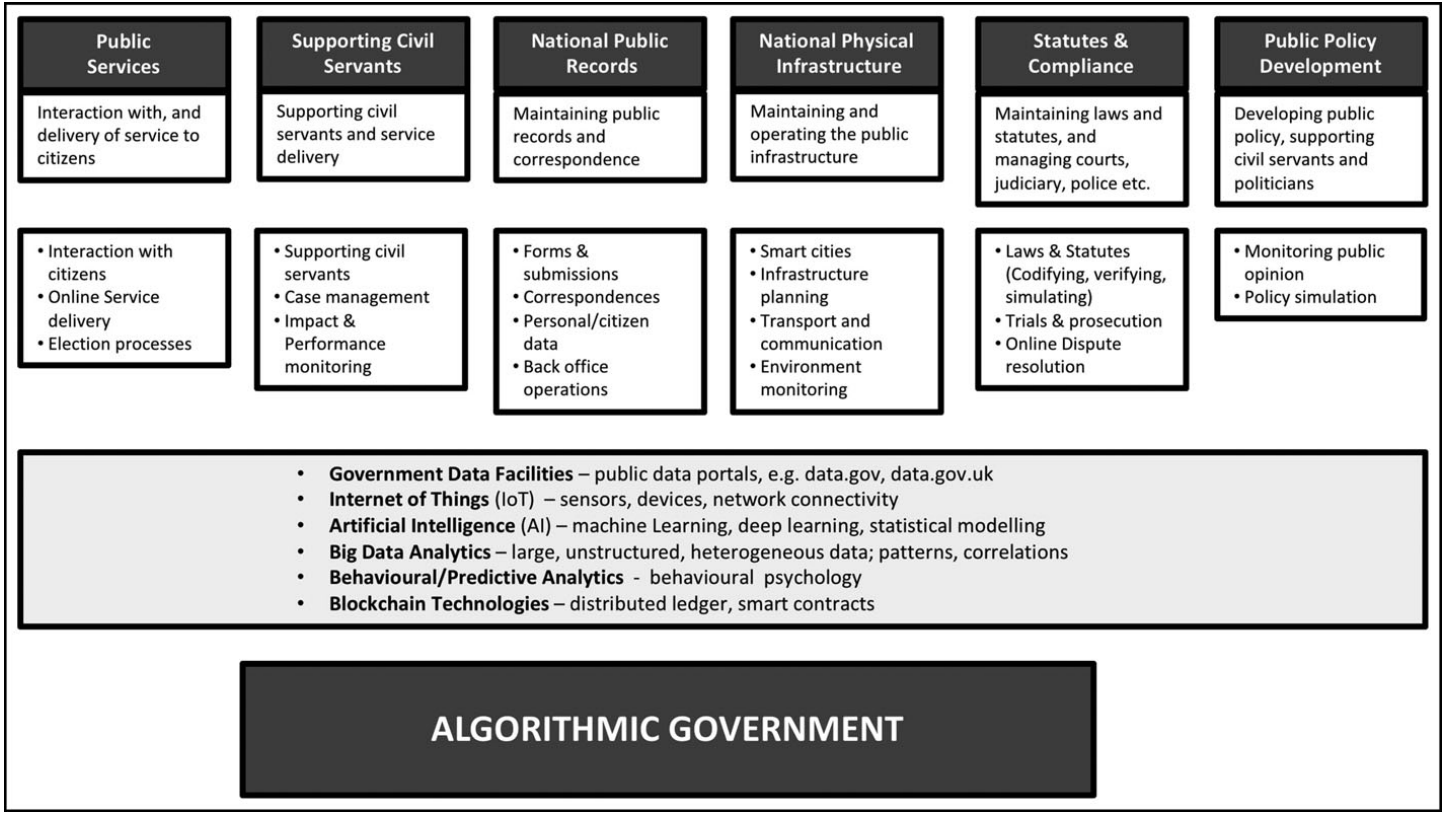
- Much less focus is placed on government as a 'first buyer' and direct beneficiary of AI take-up and implementation.
  - Consequently, the role of government as a 'user' of AI technologies has received little attention in national strategies.

# Examining the Purpose of AI Uptake

| Use Type | Description |
|---|---|
| Enforcement | Tasks that identify or prioritize targets of agency enforcement action. |
| Regulatory research, analysis and monitoring | Tasks that collect or analyze information that shapes agency policymaking. |
| Adjudication | Tasks that support formal or informal agency adjudication of benefits or rights. |
| 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. |
| Internal Management | Tasks that support agency management of resources, including employee management, procurement, and maintenance of technology systems. |

*Source: Engstrom, D. F., Ho, D.E., Sharkey, C.M. and Cuéllar, M.-F. (2020) Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies. NYU School of Law, Public Law Research Paper No. 20-54, p. 10 Available at SSRN: https://ssrn.com/abstract=3551505*

# Algorithmic Government: Where and How Can AI Help?




*Source: Engin, Z., & Treleaven, P. (2019). Algorithmic government: Automating public services and supporting civil servants in using data science technologies. The Computer Journal, 62(3), 449.*

# AI and the Public Sector

- OECD research (Ubaldi et. al., 2019) has identified a number of roles governments can play in regard to AI, often simultaneously:

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  - Governments own, or hold on behalf of citizens, large amounts of data.

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  - Governments face the challenge of determining how, and how much, to regulate and use AI.

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  - Government provides funding to support the development and adoption of AI in different sectors.

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  - Government has the ability to bring together different stakeholders that constitute the AI ecosystem to help realise their objectives.

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  - Government can act as a smart buyer of existing solutions through innovative procurement practices or co-build solutions through PPPs.

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- Government a smart buyer/co-developer
- Government as a user/service provider

# Reconfiguring Organisation and People

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# The Increased Importance of Citizen Engagement

- Citizen engagement: individual and collective actions designed to identify and address issues of public concern (Adler & Goggin, 2005).
  - In other words, it is a form of interaction between citizens and their government.
- An interaction can occur at any stage of the development of government policy or during the deployment or delivery of a public service.
  - Growing cynicism towards politics, politicians, civil servants and the activities of the public sector underline the need to reinvent the relationship between citizens and government.
- Citizen engagement is at the heart of government strategies aimed to improve public governance.
  - This is fuelled by the belief that increased engagement by citizens can rebuild trust in government and improve social cohesion.
- Artificially intelligent technologies are increasingly being used to deepen the participation of citizens in public service design/development and policymaking.
  - Given rise to a class of technologies known as Civic Tech.

# The Changing Role of Bureaucrats

How will the role definition of bureaucrats change through the introduction of AI?

- Artificial intelligence can transform public administration in several ways:
  - Automation: algorithms will do what public servants do.
  - Formalisation: algorithms will systematize complicated, multi-step processes.
  - Complex analysis: algorithms can simultaneously analyse multiple variables.
  - Big Data: algorithms can enhance data collection and processing capabilities.

- The use of AI can result in several potential impacts that can negatively affect the role of bureaucrats:
  - Retrenchment and replacement
  - Loss of discretionary freedom
  - Changes in skill sets
  - Alteration in horizontal and vertical hierarchies
  - Changes in relationships between civil servants and citizens.

# AI and the Digital Cage

- The predictive, structuring and learning capacities of artificial intelligence algorithms have found wide application in the public sector.

- However, incorrect decisions taken by or based on these systems have a detrimental impact on citizens.
- Recent research has argued that these incorrect decisions and the subsequent impact are the unintended consequences of "digital cages" (Nouws et. al., 2022; Peeters & Widlak, 2018).

- Max Weber (1925): the "iron cage" of the tendency of bureaucracies employ rational instruments to govern, and in doing so subject people to rules and procedures that do no create much value.

- Bureaucracies using algorithmic and information systems do produce the digital equivalent of Weber's iron cage: the digital cage

# AI and the Digital Cage

Digital Cage: "…a highly disciplining infrastructure that rationalizes the execution of tasks through information architecture and algorithms instead of Weberian rules and procedures" (Peeters & Widlak, 2018).

- Civil servants and the socio-technical systems they administer are 'disciplined' by the digital cage.
  - Civil servants: street-level discretion curtailed, agency limited, behaviour changed.
  - Citizens: exclusion from governance processes.
  - Socio-technical systems: less interpretation, cumulative errors can result in systemic dysfunction.

- Nouws et. al. (2022) identify two major reasons why this occurs:
  - The code on which algorithms are based is often less flexible than the deliberative practice of a legal system based on speech and the written word.
  - Algorithmic formalization can result in technocratic governance.

# Reconfiguring Government-Citizen Encounters

- Initiation: who initiates the encounter?
  - Citizen
  - Government
- Purpose: what aim does the encounter serve?
  - Exchange of information
  - Public service provision
  - Control or constraint.
- Duration and Scope: how long does each encounter last and what does it cover?
  - Brief and episodic
  - Repetitive and periodic
  - High-frequency and lengthy.

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# Thank You! Questions?