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Title of submission	Artificial intelligence in government: Concepts, standards, and a unified framework
Citation information	Straub, V. J., Morgan, D., Bright, J., and Margetts, H. (2022). Artificial intelligence in government: Concepts, standards, and a unified framework. arXiv preprint arXiv:2210.17218. DOI: https://doi.org/10.48550/arXiv.2210.17218 .
Abstract	Recent advances in artificial intelligence (AI) and machine learning (ML) hold the promise of improving government. Given the advanced capabilities of AI applications, it is critical that these are embedded using standard operational procedures, clear epistemic criteria, and behave in alignment with the normative expectations of society. Scholars in multiple domains have subsequently begun to conceptualize the different forms that AI systems may take, highlighting both their potential benefits and pitfalls. However, the literature remains fragmented, with researchers in social science disciplines like public administration and political science, and the fast-moving fields of AI, ML, and robotics, all developing concepts in relative isolation. Although there are calls to formalize the emerging study of AI in government, a balanced account that captures the full breadth of theoretical perspectives needed to understand the consequences of embedding AI into a public sector context is lacking. Here, we unify efforts across social and technical disciplines by using concept mapping to identify 107 different terms used in the multidisciplinary study of AI. We inductively sort these into three distinct semantic groups, which we label the (a) operational, (b) epistemic, and (c) normative domains. We then build on the results of this mapping exercise by proposing three new multifaceted concepts to study AI-based systems for government (AI-GOV) in an integrated, forward-looking way, which we call (1) operational fitness, (2) epistemic completeness, and (3) normative salience. Finally, we put these concepts to work by using them as dimensions in a conceptual typology of AI-GOV and connecting each with emerging AI technical measurement standards to encourage operationalization, foster cross-disciplinary dialogue, and stimulate debate among those aiming to reshape public administration with AI.
DOI or URL	https://doi.org/10.48550/arXiv.2210.17218 .
Turing affiliated authors	Vincent J. Straub, Deborah Morgan, Jonathan Bright, Helen Margetts
Please attach a PDF of the submission (if applicable)	2210.17218.pdf
	Please tick if this is related to a specific research programme(s) at the Turing
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