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A Systematic Review on the Regulatory Gaps Created by Artificial Intelligence in the U.S.

As a formal discipline, Artificial Intelligence (AI) is over 60 years old. In this time, breakthroughs in the field have generated technologies that compare to or outperform humans in tasks requiring creativity and complex reasoning. Many of the applications or methods powered by AI have no discernable effect on how existing policies are interpreted or applied (Bennett-Moses 2007). However, AI has the potential to profoundly impact public policy. The progress made in achieving parity between machine processing and human cognition has generated instances where public policies are not adequate to confront the issues faced by society, also known as regulatory gaps.

Limited resources have been dedicated to studying the corpus of this technology's impact on people (Calo 2017).[1] Few academic efforts take a broad, systematic look across multiple sectors of this relationship. The objective of this work is to improve our understanding of how AI influences U.S. public policy. It contributes to the literature by exploring the role of AI in the generation of regulatory gaps. Specifically, it addresses two research questions:

1. What regulatory gaps caused by AI methods and applications can be identified in the U.S.?
2. When looking across all of the gaps identified in the first research question, what trends and insights emerge that can help stakeholders plan for the future?

To answer these questions, I performed a systematic review of six academic literature databases in the hard and social sciences (including law review journals that provided a legal lens to this research) using a protocol that considered approximately 31,000 candidate articles published prior to February of 2018. The gaps identified were catalogued based on: the type of gap (Bennett-Moses's (2007) taxonomy), theme it fell under (adapted from Ryan Calo (2017)), level of government involved (federal, state, and local), temporality (whether it describes an event happening in the present or speculates about one in the future), and if the gap is caused by an application (a technology's purpose) or method (process to accomplish its purpose) of AI.

This work identified 56 regulatory gaps caused by AI methods or applications in the U.S. The analysis of these gaps led to the following findings:

- **The temporality of gaps leans towards those that are not currently experienced by policymakers and are speculated to happen in the future (63%). In other words, for the majority of policy gaps identified in this analysis, policymakers have time to plan for the implications of AI.**
- **Cases of regulatory gaps cluster at the state (63%) and federal (64%) level, indicating that local governments have not yet begun to wrestle with the implications of AI.**
- **When exploring the causes of a gap, attention on AI applications (91%) dominated over methods (13%).**
- **Uncertainty (38%) is the most prevalent type of gap, while the least likely to appear was novelty (13%). The fact that so few gaps were classified as truly new problems suggests that resolving gaps likely requires the adaptation or clarification of extant policies, rather than the creation of new ones.**

[1] Calo (2017) alludes that "notably missing is any systematic review of the ways AI challenges existing legal doctrines".

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References

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