Enhancing Government with Artificial Intelligence Through Effective Lawmaking

Farhan Fathurrahman[1]

[1] Universitas Sebelas Maret, Surakarta, Indonesia
mail.farhanfathur@gmail.com

Abstract. Artificial Intelligence and machine learning are at the forefront of this technological revolution. The ability of AI to process vast amounts of data and learn from it has led to significant breakthroughs in fields as diverse as healthcare, finance, and autonomous systems. Artificial intelligence has already been integrated into government operations, bringing numerous benefits that help drive the functioning of government. However, the implementation of AI also presents challenges that must be carefully addressed to avoid eroding public trust. To ensure that AI serves the public effectively without compromising its advantages, it is crucial to reinforce its use through effective lawmaking that safeguards public interests.

Keywords: Artificial Intelligence, Lawmaking, Government.

1 Introduction

The growth of technology is accelerating at an unprecedented rate, driven by rapid advancements across multiple fields. This pace of change is reshaping every aspect of society, from how we work and communicate to how we manage health and innovate. The exponential increase in technological capabilities has profound implications for the economy, culture, and the global landscape, making it one of the defining features of the modern era.

The growth of telemedicine and wearable health devices, driven by advancements in sensors, mobile technologies, is revolutionizing healthcare by enabling continuous health monitoring, early diagnosis, and remote care, making healthcare more efficient and accessible. With the rollout of 5G networks, significantly increasing data transmission speeds and reduce latency. This is facilitating the proliferation of connected de-vices in the Internet of Things (IoT), driving innovations in smart cities, autonomous vehicles, and real-time applications like virtual and augmented reality.

A significant driver of this rapid growth is the exponential increase in computing power. This trend has enabled the development of increasingly powerful computers, smartphones, and other devices, allowing for more complex and faster processing of data. Furthermore, advancements in specialized processors for artificial intelligence, have accelerated the capabilities of machines to learn, analyze, and simulate, pushing the boundaries of what is technologically possible.

Artificial Intelligence (AI) and machine learning are at the forefront of this technological revolution. The ability of AI to process vast amounts of data and learn

from it has led to significant breakthroughs in fields as diverse as healthcare, finance, and autonomous systems. Deep learning algorithms are now capable of performing tasks that were once thought to be uniquely human, such as recognizing images, translating languages, and even driving cars. The integration of AI with robotics is leading to more sophisticated automation, where machines can perform complex tasks with minimal human intervention, transforming industries and creating new ones.

With the rapid advancement of AI and its user-friendly capabilities, governments are eager to leverage these opportunities to streamline their operations to better serve the public. AI's ability to automate routine tasks and processes, allowing government agencies to operate more efficiently, reducing administrative burdens, speed up operations, and free up resources for more complex tasks. Furthermore, AI can analyze large volumes of data quickly, providing insights that help in making more informed and timely decisions, improving policymaking and resource allocation.

Despite the many benefits of AI, it also presents significant challenges. The speed at which technology is advancing often outpaces the ability of regulatory frameworks to keep up, leading to ethical and legal dilemmas. Issues such as AI bias and data privacy, require careful consideration and timely regulation to ensure technology is used responsibly. Additionally, the societal impact of technology, including job displacement due to automation and the widening digital divide, underscores the need for policies and initiatives that address these challenges, ensuring that the benefits of technological progress are broadly shared and contribute to a more equitable and sustainable future. As reported by ITCR in 2023 Data Breach report, there were 3,205 data compromises in total, affecting 353,027,892 individuals. This figure includes 3,122 data breaches, 25 data expansions, 2 data leaks, and 56 instances of unknown com-promises.[1]

Therefore, while further regulation of artificial intelligence is necessary, some lawmakers continue to struggle with creating laws that adequately address societal needs, particularly in terms of AI protection. Some current public policies fail to adequately address public needs, with some proposals being of higher quality than others. Researchers have found that a lawmaker's relative effectiveness can allow them to produce policies that significantly differ from the median voter's preferences and still achieve legislative success. Gridlock occurs not due to conflicting ideological views but because lawmakers struggle to enhance the efficacy of existing policies without incurring substantial costs. When existing policies are of low quality, it often leads to significant policy changes.[2]

Policy changes also carry several drawbacks, with one of the main concerns being the potential for unintended consequences. Policies can produce unforeseen or harmful effects, particularly when they are poorly designed, have unclear objectives, or lack comprehensive evaluation before implementation. For in-stance, a well-intended policy might inadvertently harm certain groups, especially those who are more vulnerable, due to these oversights.[3]

2   Research Methods

Using a qualitative research method with a narrative perspective and an explanatory design in this research provides a comprehensive approach to exploring how

government can be enhanced with artificial intelligence through effective lawmaking.[4] AI in government and lawmaking can profoundly impact individuals and society, often in ways that are difficult to measure quantitatively. Qualitative research enables a deep exploration of how AI affects citizens, policymakers, and legal systems by gathering insights into their experiences, perceptions, and concerns, which may not be captured by data alone.

A narrative perspective in this context allows researchers to focus on government decisions and lawmaking processes. These focus provide a window into the influence of AI on governance and public services. This perspective helps capture the nuanced, real-world implications of AI on both a personal and institutional level.

The explanatory design complements this by uncover the underlying reasons for observed patterns in AI's use in government and how effective lawmaking can be a liaison between their advantages and disadvantages. It seeks to explain why effective lawmaking can protect people's lives at the same time use AI to its fullest potential in governance contexts. Understanding these causal relationships is critical, especially in addressing concerns related to bias, accountability, and public trust in AI systems used for legal and governmental purposes.

Overall, this approach provides a comprehensive understanding of the interaction between AI, government, and lawmaking, with a deeper investigation of the causes and effects of AI's role in governance. It offers a framework for ensuring that AI is implemented in ways that are not only technically sound but also socially responsible, ethical, and transparent through effective lawmaking.

3   Artificial Intelligence and The Government

3.1   Benefits of utilizing AI for the government

Governments around the world are increasingly leveraging AI to improve services, enhance decision-making, and address complex societal challenges. These AI technologies can assist with essential government functions, such as[5]:

1. Facilitate real-time transactional data to strengthen the government's array of detection tools. Governments need to grasp societal and economic behaviors, trends, and patterns to adjust public policy accordingly. To achieve this, they must identify and address undesirable behaviors by businesses or individuals. Machine learning's expertise in classification and clustering provides the government with enhanced capabilities for detecting and measuring unwanted activities within large data sets.
2. Develop predictive models to support decision-making. Governments can utilize machine learning tools to identify trends and relationships that may indicate areas of concern or reveal sinking institutions or administrative units. The predictive power of machine learning holds significant potential for regulatory agencies and governments, which typically excel less in foresight and forecasting. They can utilize AI tools to forecast aggregate demand in areas such as schools, prisons, or children's care facilities as well. Anticipating future needs is crucial for effective resource planning and optimization, enabling agencies to allocate human resources and manpower where they are most needed.

3. Use simulations to design policy interventions that minimize unintended consequences. Governments need methods to evaluate interventions before they are implemented to understand their potential impacts, particularly for expensive new initiatives, significant changes in resource allocation, or cost-cutting measures intended to conserve public resources.

Beyond the public service sector, artificial intelligence has also made its way into the military sector. To bolster national defense and safeguard sovereignty, AI is being utilized to develop advanced, AI-driven military capabilities. One of the major milestones in AI's military application was the development of autonomous systems, including drones and unmanned vehicles. AI enabled these systems to operate with minimal human intervention, performing tasks such as reconnaissance, surveillance, and combat missions. The ability of AI to analyze real-time data and make autonomous decisions significantly improved the precision and safety of military operations.

AI's role in cybersecurity and intelligence became increasingly important. AI technologies were introduced to enhance threat detection, analyze network traffic, and protect sensitive information from cyberattacks. Additionally, AI's ability to analyze large datasets and identify patterns improved intelligence gathering and situational awareness. These advancements helped military organizations stay ahead of potential threats and manage complex information more effectively.

James Johnson conceptualize military-relevant AI by four core themes[6]:

1. AI does not operate in isolation; instead, it amplifies the destabilizing effects of existing advanced technologies, accelerating the pace of warfare and shortening the decision-making timeframe.
4. AI's influence on stability, deterrence, and escalation will likely be shaped as much by how states perceive its effectiveness as by its actual capabilities. Beyond military force postures, capabilities, and doctrines, AI's impact will also have a significant cognitive aspect, raising the risk of unintended escalation due to misperceptions and misunderstandings.
5. The growing competitiveness and contention in a multipolar nuclear world order will exacerbate the destabilizing effects of AI, thereby heightening the risks of escalation in future conflicts between major military powers.
6. In this challenging geopolitical climate, the perceived strategic advantages of AI-powered weapons are likely to entice states seeking to maintain or gain a technological edge over their rivals.

AI is crucial to government operations because it enhances efficiency and effectiveness across a range of functions. By automating routine administrative tasks and streamlining processes, AI helps reduce the burden on human resources and minimizes errors. This will be especially beneficial for government when dealing with complex and critical challenges, such as those encountered in the military. Providing support for more accurate decision-making and enhanced operational efficiency can expedite tasks and help prevent collateral damage.

3.2   **Mistrust and Potential Challenges**

Despite the numerous advantages, artificial intelligence also presents its own set of challenges. This challenge continues to be a topic of ongoing discussion in various forums. Due to its complexity, the issue remains difficult to resolve, and no consensus has been reached thus far. Numerous opinions and findings highlight the intricate challenges associated with the use of artificial intelligence, which have significant implications for society.

Implementing artificial intelligence in government systems comes with several challenges that must be addressed. These implications can be outlined as follows[7]:

1. Interoperability, the system could be compatible with numerous other government applications. However, the variety of technologies involved might lead to challenges in maintenance and sustainability.
7. Data security and privacy, government service users may not realize that their information is being collected. Additionally, they might have limited understanding of the type of data being collected, how it will be stored and managed, and who will benefit from it.
8. Environmental sustainability, The Internet is estimated to account for 5% of global energy consumption, a figure that has been rising with the increase in internet traffic, cloud services, and the expansion of IoT.
9. Ethical challenges, AI systems possess a degree of autonomy, allowing them to act on their environment without immediate human intervention. While automated decision-making can offer benefits over human decision-making, it also raises concerns when these automatic decisions impact individuals.[8]
10. Accountability issues, certain AI systems have been shown to compromise patient safety and create issues related to accountability.

One of the rising challenges that must be addressed is the decline and potential elimination of jobs traditionally performed by humans, as these roles are increasingly being taken over by machines, particularly those powered by artificial intelligence. The reasons why AI might deviate from previous patterns of technology-driven change include[9]: First, unlike in the past, technological change is occurring at a much faster pace, while labor markets and societal systems are struggling to adapt quickly enough. Second, whereas automation has traditionally focused on mechanizing physical and routine tasks, AI is now advancing to take on more cognitive, nonroutine, and creative tasks. Additionally, tasks based on tacit knowledge and, as early examples suggest, even those requiring socioempathic skills are not beyond AI's reach.

One important factor to consider, is the lack of trust in the processes and results produced by AI. This includes when the AI's ability to make crucial decisions in a manner perceived as fair by humans, to be aware of and aligned with human values relevant to the issues being addressed, and to clearly explain its reasoning and decision-making process. Given that many effective AI techniques depend on vast amounts of data, it is essential to understand how this data is managed by AI systems and their developers.[10] The emergence of a new generation of AI-enhanced advanced conventional weapons will increase the risk of accidental escalation due to the blending of nuclear and strategic non-nuclear weapons as well. Flawed design that could lead to bias, failures, and privacy breaches, creating uncontrolled systems, makes skeptics

fearful. Meanwhile, AI's capabilities to spread misinformation, compromise security, and disrupt civil society can be exploited by malicious individuals.[11] All the uncertainties, concerns, and challenges that emerge from the rapid advancement of artificial intelligence must be addressed promptly before this progress becomes uncontrollable.

4   Effective Lawmaking on AI

The impact of artificial intelligence on daily life and its use in government, particularly within the military, requires urgent attention, and regulations must be established promptly to prevent potential backlash. Maria Mousmouti explained that an effective regulation has to reflect a good causal relationship between the law and its resulting effects. Therefore, effective law must be[12]:

1. Anticipate the primary expected impacts of the legislation and incorporate them into the drafting and formulation process, using impact assessments or other ex ante evaluation methods. One of the method to conduct an assessment is by using HRESIA (Human Rights, Ethical, and Social Impact Assessment). HRESIA has two layers in its implementation.[13] The first layer of the model is grounded in the common values of human rights and related procedural principles. The second layer addresses ethical and social values, which are crucial for tackling non-legal issues related to the adoption of specific AI solutions, their acceptability, and the balance between various human rights and freedoms across multiple contexts and time periods.

    The implementation of HRESIA is essential during the legislative process to ensure that new laws align with ethical and human rights standards. By incorporating HRESIA, lawmakers can evaluate the potential societal and ethical impacts of proposed legislation, which helps in mitigating unintended consequences. This proactive approach is particularly crucial in the fast-evolving field of artificial intelligence (AI), where unchecked development may lead to ethical violations or harm to individuals and communities.

    Moreover, laws governing AI should mandate the application of HRESIA in the development of AI systems themselves. Requiring AI creators to conduct these assessments during the formation of AI products ensures that the technologies released are rigorously evaluated for their human rights and ethical implications. This step is vital in ensuring that AI operates within societal values and does not inadvertently cause harm, thus fostering greater public trust and responsible innovation.

11. Clearly define its objectives and purpose, by retaining the human element in processes or avoiding complete automation, we can prevent the loss of cognitive functions. Additionally, in the national security domain, we should seek out and, if necessary, adopt all available technological advancements.[14] It is equally crucial to maintain human involvement in decision-making processes, rather than relying entirely on automation. Human oversight is essential for addressing AI's limitations, such as inherent biases in algorithms or a lack of contextual awareness. By ensuring human input remains integral to key decisions, laws can help avoid situations where AI functions autonomously without accountability. Striking a balance between

automation and human judgment is vital to preventing errors or unethical outcomes. Keeping humans in the loop ensures that AI complements human abilities instead of replacing critical decision-making, thereby promoting responsible use of technology.

12. Ensure the necessary and appropriate means and enforcement measures are in place to achieve the stated objectives in practice. Effective law enforcement and the imposition of criminal penalties on rule violators must be handled carefully and cautiously to ensure a more orderly implementation of the rules. Defining regulations is not enough; there must also be a clear path for implementing and enforcing those rules in real-world AI applications. Without proper enforcement, even well-drafted AI laws will struggle to influence practice, as companies or developers may bypass the ethical and legal standards meant to guide AI development and use.

13. Evaluate and assess real-life effectiveness consistently and in a timely manner. The rapid advancement of technology necessitates that lawmakers conduct regular and consistent evaluations to ensure that public protection against artificial intelligence keeps pace with current developments.

Effective regulation of Artificial Intelligence (AI) requires a comprehensive approach that anticipates the primary impacts of legislation through tools like HRESIA, By clearly defining the objectives and purpose of AI laws, retaining the human element in processes, and carefully adopting technological advancements, we can ensure responsible use. Ensuring appropriate means and enforcement measures are in place for effective implementation, while consistently evaluating real-life effectiveness, is crucial. This approach ensures that AI regulations evolve with technological advancements, balancing innovation with the protection of public welfare and adherence to societal values.

5   Conclusion

Artificial Intelligence (AI) necessitates regulation to ensure its development and application adhere to ethical standards and safeguard public welfare. As AI technologies increasingly permeate essential sectors such as healthcare, finance, and national security, the potential risks associated with their misuse or unintended consequences become more significant. Without proper oversight, these technologies could lead to unintended biases, privacy breaches, and security vulnerabilities. Effective regulation is crucial to addressing these risks by establishing clear guidelines and standards for AI design, implementation, and operation.

Regulatory frameworks help ensure that AI systems are transparent and accountable, promoting fairness and reducing the likelihood of perpetuating existing biases. By enforcing rules that govern data usage, algorithmic decision-making, and system transparency, regulation can help prevent AI technologies from violating individual privacy rights and maintain public trust. Furthermore, a well-regulated environment fosters ethical AI development, encouraging innovations that align with societal values and human rights.

In a rapidly evolving technological landscape, maintaining robust regulations is essential for balancing the benefits of AI with its potential risks. Regulation provides a

structured approach to managing the complex challenges posed by AI, ensuring that its integration into society enhances rather than undermines public well-being. By prioritizing regulatory measures, we can harness the advantages of AI while minimizing its risks, thus ensuring that technological progress occurs in a responsible and equitable manner.

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