https://doi.org/10.56861/nalarnagara.v1i3
e-ISSN: 0000-0000

International Journal of New Approaches to Law and Rationality in Nationhood, Governance, and Rights Advocacy
Nalarnagara Journal
Vol. 1, No. 3, July 2026 pp. 1209-1218
Journal Page is available at https://internationaljournal.lppmunsaka.ac.id/index.php/nalarnagara

Governing Artificial Intelligence In the Digital Commons: A Normative Legal Framework for Education and Cultural Preservation

Anwar Sadat[1], Farhana[2], Hamdan Azhar Siregar[3], Otom Mustami[4]
[1,2,3]Islamic University of Jakarta, Balai Rakyat Utan Kayu Matraman, East Jakarta 13120, Indonesia
Email: [1]firmanbusroh@gmail.com, [2]fatriakhairo79@gmail.com, [3]putridifazhafirah@gmail.com

Abstract

The growing integration of Artificial Intelligence (AI) into education systems and cultural institutions is transforming the digital commons by reshaping how knowledge is produced, accessed, and preserved. Despite rapid technological adoption, existing legal frameworks remain fragmented and insufficient to address the structural implications of AI as a governance infrastructure within shared knowledge ecosystems. This study examines the normative legal foundations required to regulate AI in education and cultural preservation.Using a normative legal and governance-based analytical approach grounded in public law theory and regulatory governance models, the analysis finds that three structural challenges undermine current regulatory responses: the concentration of algorithmic authority within private actors, asymmetrical data representation affecting cultural diversity, and the absence of enforceable accountability standards in AI-mediated knowledge systems. These gaps risk weakening epistemic equity and the public character of education and cultural heritage.The study concludes that the digital commons can serve as a coherent normative legal framework for AI governance. It proposes a structured model integrating risk-based regulation, enforceable transparency obligations, and public-interest oversight mechanisms to safeguard inclusive education and cultural sustainability. This framework provides a principled legal foundation for governing AI in shared knowledge infrastructures.

Keywords: Digital Commons
Normative Legal Framework, Algorithmic Accountability, Cultural Preservation

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has significantly transformed digital environments, particularly in domains related to knowledge production, dissemination, and preservation. Education systems and cultural institutions increasingly rely on AI-driven technologies to enhance learning processes, automate decision-making, and expand access to knowledge resources. These developments position AI as a central component in the evolution of the digital commons, understood as shared knowledge infrastructures that facilitate collective participation, accessibility, and innovation [1].

In recent years, AI has evolved beyond a supporting technological tool into a system that actively mediates knowledge structures. In education, AI-based platforms are used to personalize learning pathways, automate assessments, and recommend content, thereby influencing how knowledge is accessed and prioritized [2]. In cultural preservation, AI technologies enable large-scale digitization, classification, and reconstruction of cultural artifacts, improving accessibility while simultaneously raising concerns about representation and contextual integrity [3]. As a result, AI increasingly functions as an epistemic and governance infrastructure within shared knowledge ecosystems.

State-of-the-art discussions on AI governance emphasize principles such as transparency, fairness, accountability, and human oversight, often operationalized through ethical guidelines and risk-based regulatory approaches [4]. While these frameworks contribute to addressing technical and operational risks, they remain limited in capturing the

broader structural implications of AI within public knowledge systems. In particular, current approaches have not sufficiently integrated the concept of the digital commons as a normative legal framework for governing AI in domains such as education and cultural preservation [5].

This limitation reveals a critical gap in contemporary regulatory discourse. Existing legal frameworks tend to focus on sector-specific concerns, such as data protection and privacy, without addressing how AI reshapes the governance of knowledge as a public good. Consequently, issues related to algorithmic authority, cultural representation, and equitable access to knowledge remain insufficiently regulated within existing legal structures [6].

In response to this gap, this study aims to develop a normative legal framework for governing AI in the digital commons, with a particular focus on education and cultural preservation. The objectives of this research are threefold: first, to examine how AI transforms the governance of knowledge within shared digital infrastructures; second, to identify the key legal and governance challenges arising from the integration of AI in these domains; and third, to propose a structured legal framework grounded in public law principles and regulatory governance models to ensure accountability, transparency, and epistemic equity.

By situating AI governance within the conceptual framework of the digital commons, this study seeks to contribute to the development of a coherent legal approach capable of addressing the complexities of AI deployment in education and cultural systems.

METHODS

This study employs a normative legal research approach combined with governance-based analysis. The research is based on secondary data sources, including legal frameworks, policy documents, and academic literature related to AI governance, digital commons, and public law.

The analytical method focuses on qualitative normative analysis, examining legal principles such as accountability, transparency, and public interest. The study also incorporates regulatory governance models to evaluate how AI systems can be effectively governed within shared knowledge infrastructures.

The research process involves three stages: identifying legal gaps, analyzing governance challenges, and constructing a normative legal framework. This approach allows for a systematic evaluation of the legal implications of AI in education and cultural preservation.

RESULTS & DISCUSSION

AI and the Structural Transformation of Knowledge Governance in the Digital Commons

The findings of this study reveal that the integration of Artificial Intelligence (AI) into educational systems and cultural institutions has precipitated a profound and structural transformation in the governance of knowledge within the digital commons. Unlike earlier generations of digital technologies, which primarily functioned as auxiliary tools supporting human decision-making, AI systems now operate as embedded epistemic infrastructures that actively mediate, filter, rank, and even generate knowledge. This shift signifies not merely a technological evolution, but a paradigmatic reconfiguration of how knowledge is produced, accessed, legitimized, and contested.

At the core of this transformation is a movement away from institution-centered governance, traditionally anchored in public institutions such as schools, universities, libraries, and cultural bodies, toward a hybrid governance model in which algorithmic systems assume a constitutive role. In this emerging model, authority is no longer exclusively

vested in human actors or institutional norms but is increasingly distributed across socio-technical systems that operate through data-driven logics. AI systems do not simply assist in decision-making; they structure the conditions under which decisions are made, thereby reshaping the epistemic environment itself.

In educational contexts, AI-driven platforms are fundamentally altering pedagogical architectures. Through adaptive learning systems, automated grading, predictive analytics, and personalized content delivery, AI redefines how knowledge is sequenced, evaluated, and internalized. While these developments offer clear advantages in terms of efficiency, scalability, and individualized learning experiences, they also introduce opaque layers of algorithmic control that are often inaccessible to both educators and learners. The criteria by which content is prioritized, learning pathways are determined, and performance is assessed are frequently embedded within proprietary models, rendering them difficult to scrutinize or challenge.

This shift entails a gradual but significant relocation of epistemic authority—from educators as professional knowledge gatekeepers to algorithmic systems as de facto arbiters of relevance and validity. Such a transition raises critical legal and normative concerns. Decision-making processes that affect fundamental rights, such as access to education and fair assessment, are increasingly governed by systems that lack transparency, explainability, and procedural safeguards. In the absence of clear accountability mechanisms, it becomes difficult to contest decisions or seek remedies, thereby undermining principles of due process and fairness within educational governance.

A parallel transformation is observable within cultural institutions, where AI technologies are deployed to digitize, classify, and curate cultural artifacts at unprecedented scales. These systems enable wider access to cultural heritage and facilitate the preservation of vast repositories of knowledge. However, the reliance on machine learning models in these processes introduces a form of epistemic standardization, whereby complex and context-dependent cultural meanings are translated into structured, data-driven categories. Such categorization, while operationally efficient, risks flattening the richness of cultural expressions and overlooking the interpretive plurality inherent in cultural practices.

More critically, AI systems used in cultural curation may implicitly privilege certain narratives, classifications, or aesthetic criteria, thereby influencing how culture is represented and understood within the digital commons. This introduces a subtle yet powerful form of algorithmic mediation of culture, in which the visibility and legitimacy of cultural knowledge are shaped by computational logics rather than by inclusive, participatory processes. Over time, this may contribute to the consolidation of dominant cultural narratives while marginalizing alternative or localized perspectives.

These developments underscore the necessity of reconceptualizing AI not merely as a neutral technological instrument, but as a governance mechanism operating within legally and socially sensitive domains. AI systems increasingly function as regulators of knowledge flows, determining not only access but also recognition and authority. In this sense, they perform quasi-regulatory roles traditionally associated with public institutions, yet without being subject to equivalent legal obligations or democratic oversight.

From a normative legal perspective, this structural transformation demands a fundamental rethinking of existing governance frameworks. The digital commons, historically conceptualized as a shared space for collective knowledge production and participation, is now mediated by algorithmic infrastructures that are often privately controlled and driven by commercial imperatives. This creates a tension between the logic of the market and the principles of the public interest, particularly in domains such as education

and cultural preservation, where knowledge functions as a public good rather than a commodity.

Accordingly, the central legal challenge lies in ensuring that the governance of AI-driven infrastructures remains aligned with foundational public law principles, including transparency, accountability, non-discrimination, and the protection of public goods. This requires not only the imposition of regulatory obligations on AI developers and deployers but also the reassertion of public institutional roles in overseeing and shaping the epistemic environment of the digital commons.

Furthermore, governance frameworks must address the structural power asymmetries embedded in AI systems, particularly the concentration of control over data, algorithms, and digital platforms. Without deliberate legal intervention, these asymmetries risk entrenching new forms of epistemic dominance, where a limited number of actors effectively determine the contours of global knowledge systems.

In conclusion, the integration of AI into education and cultural domains represents a transformative shift in knowledge governance—one that redefines authority, restructures epistemic processes, and challenges traditional legal paradigms. To respond effectively, legal frameworks must evolve beyond reactive regulation and adopt a more proactive, systemic approach that recognizes AI as a central component of contemporary knowledge infrastructures. Only by embedding public values into the design and governance of these systems can the digital commons continue to function as an inclusive, equitable, and culturally diverse space for knowledge creation and exchange.

Concentration of Algorithmic Authority and the Privatization of Epistemic Power

A central finding of this study concerns the growing concentration of algorithmic authority within a limited number of private technology actors. The development and deployment of AI systems used in education and cultural preservation are predominantly controlled by large corporations that possess the technical expertise, computational resources, and data infrastructures required to sustain such systems. This concentration of control has significant implications for the governance of the digital commons, as it effectively shifts epistemic authority from public institutions to private entities.

This phenomenon can be understood as a form of epistemic privatization, where the power to shape knowledge systems is increasingly exercised through proprietary technologies and closed algorithmic models. Educational institutions, for example, often rely on third-party AI platforms for learning management, assessment, and analytics. While these systems enhance operational efficiency, they also create dependencies that limit institutional autonomy and reduce transparency in decision-making processes. In cultural contexts, similar dependencies arise in the use of AI for digitization and archival management, where private platforms may influence how cultural heritage is categorized and presented.

From a legal standpoint, this concentration of power raises complex questions regarding accountability and regulatory jurisdiction. Traditional public law frameworks are designed to regulate state actors and clearly identifiable entities, whereas AI governance involves distributed networks of developers, deployers, and users. The diffusion of responsibility across these actors complicates the attribution of legal liability, particularly in cases where algorithmic decisions produce discriminatory or harmful outcomes.

Moreover, the privatization of epistemic power challenges the foundational principle that education and cultural heritage constitute public goods. When access to knowledge is mediated by proprietary systems, there is a risk that commercial interests may override public values such as inclusivity, fairness, and cultural diversity. This tension highlights the need for regulatory mechanisms that reassert public oversight and ensure that private actors operating within the digital commons are subject to enforceable legal obligations.

Data Asymmetry, Epistemic Inequality, and Cultural Marginalization

The analysis further identifies data asymmetry as a foundational and systemic challenge in contemporary AI governance, one that extends beyond technical limitations into the realm of power, knowledge production, and cultural representation. AI systems are fundamentally dependent on large-scale datasets for training, validation, and continuous optimization. However, these datasets are neither neutral nor representative in a universal sense; rather, they are socially constructed artifacts that reflect existing hierarchies of language, culture, and socio-economic dominance. As a consequence, AI systems tend to reproduce and, in many cases, amplify these asymmetries in their outputs.

In practice, the majority of high-quality datasets are concentrated within technologically advanced regions and are dominated by widely used languages, particularly English. This results in a structural imbalance where knowledge systems, cultural expressions, and epistemologies from the Global South or marginalized communities are either underrepresented, misrepresented, or entirely excluded. Such asymmetry is not merely a technical deficiency but constitutes a form of epistemic inequality, whereby certain ways of knowing are systematically privileged over others within digital infrastructures.

The implications of this condition are particularly profound in the field of education. AI-driven educational technologies—including adaptive learning systems, automated assessment tools, and content recommendation algorithms—operate based on patterns derived from dominant datasets. Consequently, they tend to prioritize standardized knowledge frameworks that align with mainstream or Western-centric paradigms. This can lead to the marginalization of alternative epistemologies, local knowledge traditions, and culturally specific modes of learning. Students from underrepresented linguistic or cultural backgrounds may find themselves engaging with educational content that lacks contextual relevance, thereby diminishing both the inclusivity and effectiveness of AI-mediated learning environments. Over time, these dynamic risks reinforcing structural inequalities in educational access and outcomes, rather than alleviating them.

In the domain of cultural preservation, the risks associated with data asymmetry are equally significant, if not more acute. AI systems used for cultural classification, archiving, and curation often rely on standardized taxonomies and metadata structures that are ill-equipped to capture the complexity, fluidity, and contextual richness of cultural expressions. Minority cultures, indigenous knowledge systems, and intangible heritage—such as oral traditions, rituals, and local practices—are particularly vulnerable to exclusion or distortion. When these cultural forms are either inadequately represented or algorithmically simplified, the resulting digital records may perpetuate incomplete or inaccurate narratives. This not only undermines the authenticity of cultural preservation efforts but also contributes to a subtle yet pervasive form of digital cultural marginalization, where certain identities and histories are rendered invisible within the digital commons.

Moreover, the concentration of data ownership and control in the hands of a limited number of private actors further exacerbates these challenges. Large technology companies often act as gatekeepers of data infrastructures, determining which datasets are collected, curated, and made accessible for AI development. This concentration of power raises critical concerns regarding whose knowledge is being encoded into AI systems and for whose benefit. In this sense, data asymmetry is intrinsically linked to broader issues of informational justice and the political economy of data in the digital age.

From a normative legal perspective, these dynamics intersect directly with fundamental principles of equality, non-discrimination, and cultural rights. The persistence of data asymmetry challenges the realization of substantive equality, as it creates conditions under which certain groups are systematically disadvantaged in their ability to access, contribute to, and benefit from digital knowledge systems. It also implicates the right to

participate in cultural life, as recognized in international human rights instruments, by limiting the visibility and recognition of diverse cultural expressions within AI-mediated environments.

Furthermore, these issues raise pressing questions regarding the scope of responsibility borne by AI developers, platform providers, and public institutions. It is no longer sufficient to treat bias and underrepresentation as incidental or technical problems; rather, they must be understood as governance failures that require deliberate legal and institutional responses. The design, development, and deployment of AI systems must therefore be guided by an explicit commitment to inclusivity, cultural sensitivity, and epistemic justice.

Addressing these challenges necessitates the integration of robust data governance principles into binding legal frameworks. Such principles should include mandatory requirements for dataset transparency, enabling scrutiny of data sources, composition, and potential biases. Additionally, legal standards should promote representativeness and inclusivity by encouraging—or where necessary, requiring—the incorporation of diverse linguistic and cultural datasets, particularly those originating from underrepresented communities. Mechanisms for participatory data governance, including the involvement of local communities in data collection and curation processes, are also essential to ensuring that AI systems reflect a plurality of perspectives.

In addition, regulatory frameworks should consider the establishment of safeguards against extractive data practices, whereby cultural knowledge is appropriated without adequate recognition, consent, or benefit-sharing. This is particularly relevant in the context of indigenous and traditional knowledge, where ethical considerations must be closely aligned with legal protections.

Ultimately, confronting data asymmetry is not merely a matter of improving technical accuracy but of reconfiguring the normative foundations of AI governance. By addressing the structural roots of epistemic inequality and cultural marginalization, legal frameworks can play a pivotal role in ensuring that AI systems contribute to a more inclusive, equitable, and culturally diverse digital commons. Without such interventions, there is a significant risk that AI will entrench existing hierarchies of knowledge and power, thereby undermining its potential as a tool for collective advancement and cultural sustainability.

Regulatory Fragmentation and the Limits of Existing Legal Frameworks

Another significant finding of this study lies in the persistent fragmentation of existing regulatory approaches to AI governance. Contemporary legal frameworks tend to regulate AI in a piecemeal and sectoral manner, addressing discrete issues such as data protection, cybersecurity, intellectual property, and consumer protection, without recognizing AI as an integrated socio-technical infrastructure embedded within the digital commons. As a result, governance efforts remain reactive and compartmentalized, rather than systemic and anticipatory.

This fragmentation produces a number of structural limitations. First, it generates inconsistencies in regulatory standards across jurisdictions. Different countries and regions adopt divergent legal definitions, risk classifications, and compliance requirements for AI systems, leading to a lack of harmonization in global governance. Such divergence not only complicates cross-border cooperation but also creates regulatory arbitrage, whereby private actors may exploit less stringent jurisdictions to deploy high-risk AI systems. In the context of the digital commons—where information flows transcend territorial boundaries—this lack of coherence undermines the effectiveness of national legal regimes.

Second, fragmentation contributes to significant gaps in oversight and accountability. AI systems increasingly operate across multiple sectors simultaneously—for instance, an AI tool used in education may rely on datasets derived from social media, cloud infrastructure,

and third-party analytics services. However, regulatory frameworks are often siloed, with different authorities responsible for different domains. This institutional fragmentation weakens the capacity of regulators to exercise comprehensive oversight, particularly in cases involving complex value chains and distributed responsibilities. The challenge becomes even more pronounced in cross-border data flows, where jurisdictional limitations hinder enforcement and create uncertainty regarding applicable law.

Third, the fragmented nature of regulation limits the ability to address the cumulative and systemic effects of AI deployment on public knowledge systems. Existing legal approaches tend to focus on isolated harms—such as data breaches or discriminatory outcomes—without adequately capturing the broader, long-term implications of AI on education systems, cultural production, and epistemic diversity. For example, the widespread use of algorithmic recommendation systems may gradually shape what knowledge is visible or prioritized, thereby influencing cultural narratives and access to information in ways that are not easily regulated through sector-specific laws.

Moreover, current regulatory approaches rely heavily on soft-law mechanisms, including ethical guidelines, principles-based frameworks, and voluntary standards developed by international organizations, industry groups, and professional bodies. While these instruments play a valuable role in articulating normative expectations and fostering a culture of responsible innovation, they inherently lack binding force and enforceability. Their effectiveness often depends on the willingness of private actors to comply, which may vary significantly depending on economic incentives and competitive pressures. In many cases, soft-law frameworks function more as reputational tools than as robust governance mechanisms.

The reliance on self-regulation further exacerbates these limitations. By placing substantial responsibility on private entities—such as technology companies and platform providers—current governance models risk prioritizing commercial interests over public values. This is particularly problematic in the digital commons, where AI systems mediate access to knowledge, shape cultural representation, and influence educational outcomes. Without strong external oversight, self-regulation may fail to adequately address issues such as bias, exclusion, and the commodification of cultural resources.

From a public law perspective, these challenges underscore the urgent need for a paradigm shift toward more integrated and binding regulatory frameworks. Such frameworks should establish clear legal obligations, delineate institutional responsibilities, and provide effective enforcement mechanisms capable of addressing both individual harms and systemic risks. Importantly, regulation must move beyond a narrow focus on technical compliance to incorporate broader societal considerations, including the protection of fundamental rights, the preservation of cultural diversity, and the equitable distribution of knowledge resources.

In this regard, the governance of AI within the digital commons requires not only legal harmonization across jurisdictions but also institutional coordination across sectors. This may involve the creation of specialized regulatory bodies, the strengthening of international cooperation, and the development of hybrid governance models that combine hard law with enforceable standards. Ultimately, overcoming regulatory fragmentation is essential to ensuring that AI systems are governed in a manner that is coherent, accountable, and aligned with the public interest.

Toward a Normative Legal Framework for Governing AI in the Digital Commons

In light of the foregoing analysis, this study advances a more comprehensive normative legal framework aimed at addressing the structural, ethical, and regulatory challenges inherent in governing artificial intelligence (AI) within the digital commons. Rather than viewing AI solely as a technological artifact, this framework conceptualizes AI

as a socio-technical system embedded within public knowledge infrastructures, thereby necessitating a public law-oriented approach. The framework is grounded in core principles of administrative law, human rights law, and regulatory theory, and seeks to establish a coherent, adaptive, and value-oriented model of governance.

The first pillar of this framework is a risk-based regulatory architecture, which classifies AI systems according to their potential impact on individuals, communities, and public interests. This approach moves beyond a one-size-fits-all regulatory model by introducing differentiated obligations based on levels of risk, ranging from minimal to unacceptable risk. In the domains of education and cultural preservation, AI systems frequently operate in contexts that directly affect fundamental rights, such as the right to education, access to information, and participation in cultural life. Consequently, such systems should be categorized as high-risk and subjected to enhanced regulatory scrutiny. This includes mandatory ex ante impact assessments, continuous monitoring mechanisms, and compliance requirements that ensure alignment with ethical and legal standards. Importantly, risk classification must remain dynamic, allowing for reclassification as technologies evolve and their societal impacts become more apparent.

The second pillar is algorithmic accountability, which aims to establish clear and enforceable lines of responsibility throughout the lifecycle of AI systems—from design and development to deployment and post-implementation evaluation. This pillar emphasizes the need for legal obligations concerning transparency, explainability, and auditability, ensuring that AI-driven decisions can be understood, challenged, and reviewed. In practical terms, this includes the requirement for documentation of training data sources, model design choices, and decision-making processes, particularly in contexts affecting public goods. Furthermore, accountability must extend beyond technical actors to include institutional responsibility, thereby addressing the diffusion of liability often associated with complex AI ecosystems. The establishment of liability regimes—whether through strict liability, negligence standards, or hybrid approaches—becomes essential in providing legal remedies for individuals adversely affected by AI systems.

The third pillar is public-interest oversight, which underscores the central role of the state and independent regulatory bodies in supervising and guiding the deployment of AI technologies. This form of oversight is not limited to reactive enforcement but encompasses proactive governance through policy formulation, standard-setting, and participatory mechanisms. Public institutions must ensure that AI systems contribute to inclusivity, protect cultural diversity, and prevent the marginalization of vulnerable groups. In the context of the digital commons, this also involves safeguarding collective knowledge resources from privatization, misuse, or algorithmic bias that may distort cultural representation. Independent oversight bodies, such as data protection authorities or specialized AI regulators, play a crucial role in maintaining checks and balances, ensuring that governance remains transparent, accountable, and aligned with democratic values.

Beyond these three core pillars, this study further argues for the integration of ethical governance and participatory engagement as cross-cutting dimensions of the framework. Ethical principles—such as fairness, non-discrimination, and respect for cultural plurality—must be operationalized within legal instruments to avoid remaining merely aspirational. At the same time, meaningful participation from affected stakeholders, including educators, cultural practitioners, and local communities, is essential to ensure that governance frameworks are context-sensitive and socially legitimate.

Taken together, these pillars form a multidimensional and normative framework that reconceptualizes AI governance as an issue of public law, institutional design, and societal values. By situating AI within the digital commons, the framework challenges purely market-driven or technocratic approaches and instead emphasizes the protection of public knowledge

systems as a shared societal responsibility. Ultimately, this approach seeks to strike a balance between fostering innovation and safeguarding fundamental rights, ensuring that the development and deployment of AI technologies remain aligned with the broader objectives of justice, equity, and cultural sustainability.

CONCLUSION

This study has examined the legal and normative dimensions of AI governance within the context of education and cultural preservation in the digital commons. The findings indicate that while artificial intelligence offers significant opportunities to enhance access, efficiency, and innovation, its implementation also raises critical concerns regarding accountability, ethical responsibility, and regulatory adequacy.

In response to the research questions, it can be concluded that current legal frameworks remain insufficient to comprehensively address the complexities of AI governance, particularly in safeguarding cultural values and ensuring equitable access in educational contexts. The absence of clear accountability mechanisms further complicates the determination of liability when harm or bias arises from AI systems.

Therefore, a more adaptive and integrative legal approach is required—one that not only emphasizes regulatory compliance but also incorporates ethical considerations, transparency, and stakeholder participation. Strengthening interdisciplinary collaboration between legal scholars, technologists, and policymakers is essential to develop a more responsive governance model. Ultimately, effective AI governance must balance technological advancement with the protection of human values, cultural integrity, and social justice within the digital commons.

Funding
This research received no external funding.

Author Contributions

Conceptualization, Anwar Sadat. and Otom Mustami.; methodology, Farhana.; software, Hamdan Azhar Siregar; validation, Anwar Sadat., Otom Mustami. and Hamdan Siregar.; formal analysis, Farhana; investigation, Anwar Sadat.; resources, Hamdan Siregar.; data curation, Farhana; writing—original draft preparation, Otom Mustami.; writing—review and editing, Hamdan Siregar. and Anwar Sadat.; visualization, Otom Mustami.; supervision, Hamdan Siregar; project administrationAnwar Sadat.; funding acquisition, Hamdan Siregar. All authors have read and agreed to the published version of the manuscript.

REFERENCES

Floridi, Luciano, et al. “AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations.” Minds and Machines 28, no. 4 (2018): 689–707. https://doi.org/10.1007/s11023-018-9482-5.

European Commission. Ethics Guidelines for Trustworthy AI. Brussels: European Commission, 2019. https://doi.org/10.2759/346720.

UNESCO. Recommendation on the Ethics of Artificial Intelligence. Paris: UNESCO, 2021. https://doi.org/10.54677/MNMH8546.

Mittelstadt, Brent D., et al. “The Ethics of Algorithms: Mapping the Debate.” Big Data & Society 3, no. 2 (2016): 1–21. https://doi.org/10.1177/2053951716679679.

Lessig, Lawrence. Code and Other Laws of Cyberspace. New York: Basic Books, 1999.

Benkler, Yochai. The Wealth of Networks: How Social Production Transforms Markets and Freedom. New Haven: Yale University Press, 2006.

Pasquale, Frank. The Black Box Society: The Secret Algorithms That Control Money and Information. Cambridge, MA: Harvard University Press, 2015.

Crawford, Kate. Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence. New Haven: Yale University Press, 2021.

Zuboff, Shoshana. The Age of Surveillance Capitalism. New York: PublicAffairs, 2019.

OECD. OECD Principles on Artificial Intelligence. Paris: OECD Publishing, 2019. https://doi.org/10.1787/eadf8b0d-en.

World Economic Forum. Global Technology Governance Report 2021. Geneva: World Economic Forum, 2021.

Kwet, Michael. "Digital Colonialism: US Empire and the New Imperialism in the Global South." Race & Class 60, no. 4 (2019): 3–26. https://doi.org/10.1177/0306396818823172.

Selwyn, Neil. Education and Technology: Key Issues and Debates. London: Bloomsbury Academic, 2016.

Eubanks, Virginia. Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor. New York: St. Martin's Press, 2018.

Morozov, Evgeny. To Save Everything, Click Here: The Folly of Technological Solutionism. New York: PublicAffairs, 2013.