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American Journal of Technology
ISSN 2958 - 4094 (Online)
Vol.2, Issue 1, pp 37 – 44, 2023

The Ethics of Artificial Intelligence: Examining the Ethical Considerations Surrounding the Development and Use of AI

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Article's History

Submitted: 13rd February 2023
Accepted: 19th April 2023
Published: 26th April 2023

Abstract

Aim: AI systems can be complex and opaque, making it challenging to understand how they make decisions. This raises concerns about fairness and accountability, as individuals may not understand the factors that influence the decisions made by AI systems. The aim of this study was to examine the ethical considerations surrounding the development and use of AI.

Methods: The study adopted a desktop research design. Relevant books reference and journal articles for the study were identified using Google Scholar. The inclusion criteria entailed materials that were related to the ethics of artificial intelligence.

Results: The study found out that bias, privacy, accountability and transparency are the main ethical concerns that surround the development and use of AI technology. Additionally, the studies emphasized the need for collaboration between stakeholders, including policymakers, researchers, and local communities, to ensure that ethical guidelines are developed and implemented. In African countries, the studies highlighted the need for a nuanced understanding of the cultural, political, and economic context of the region when considering ethical AI.

Conclusion: Issues related to bias, data privacy, and the impact of AI on the labor market were identified as important ethical considerations in the region.

Recommendation: The study recommend development and implementation of ethical guidelines for AI. Policymakers, developers, and researchers should work together to develop and implement ethical guidelines for AI systems. These guidelines should address issues related to bias, transparency, accountability, and privacy, and should be grounded in a commitment to promoting human well-being and social good.

Keywords: *AI, bias, privacy, transparency, accountability, ethical issues*

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INTRODUCTION

Artificial Intelligence (AI) is increasingly becoming an essential part of human lives, with applications in various fields such as healthcare, finance, and transportation. According to Lichtenthaler (2019), AI refers to the development of computer systems that can perform tasks that typically require human intelligence such as visual perception, speech recognition, decision-making, and language translation. Artificial Intelligence (AI) has become a popular and rapidly advancing field of computer science, with the potential to transform many aspects of human life. The increasing reliance on AI systems has raised ethical concerns that need to be addressed. The development and deployment of AI systems need to be guided by ethical principles to ensure that they are used for the betterment of society.

As stated by Challen et al. (2019), one of the significant ethical issues surrounding AI is bias. AI systems can be biased in many ways such as racial, gender, and cultural biases. For instance, AI algorithms used in hiring processes may exhibit gender bias, resulting in fewer women being hired for certain jobs. Similarly, facial recognition systems may exhibit racial biases, resulting in the misidentification of individuals from certain racial groups. The ethical concerns around bias in AI are two-fold: first, biased AI systems can perpetuate and amplify existing societal biases and discrimination, and second, the use of biased AI systems can lead to unfair treatment of individuals. For example, facial recognition systems have been shown to have higher error rates for individuals with darker skin tones than for those with lighter skin tones (Krishnapriya et al., 2020).

As Jobin, Ienca and Vayena (2019) states, another significant ethical consideration surrounding AI is privacy. Privacy issues in AI refer to concerns related to the collection, storage, and use of personal information by AI systems. AI systems have the ability to collect and analyze vast amounts of personal data, and if this data is not handled appropriately, it can lead to significant privacy concerns (Jobin et al., 2019). AI systems often collect vast amounts of data from individuals, which can be used to make decisions about them. This raises concerns about how this data is collected, stored, and used. Additionally, the use of AI in surveillance systems can infringe on individual privacy rights (Palaiogeorgou et al., 2021). One of the main privacy concerns related to AI is the potential for personal information to be used for unintended purposes. For example, personal information collected by an AI system for one purpose, such as targeted advertising, may be used for other purposes, such as identity theft. Additionally, AI systems may collect data on individuals without their knowledge or consent, which can lead to privacy violations.

Another privacy concern related to AI is the potential for data breaches (Murdoch, 2021). If personal data is not adequately protected, it can be accessed by unauthorized individuals, leading to identity theft and other forms of fraud. This is particularly concerning given the sensitive nature of the data collected by many AI systems, such as health data and financial information. The use of AI systems in surveillance also raises significant privacy concerns. According to Murdoch (2021), AI systems are increasingly being used for facial recognition and other forms of biometric identification, which can be used to track individuals and monitor their behavior without their knowledge or consent. This can lead to significant violations of privacy and civil liberties.

The use of AI systems raises significant concerns about accountability. Accountability issues in AI refer to the responsibility and liability associated with the actions and decisions made by AI systems (Tóth et al., 2022). One of the main challenges related to accountability in AI is the lack of transparency in the decision-making process. AI systems often rely on complex algorithms and

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machine learning models that can be difficult to understand, even by the developers who created them. Additionally, as AI systems become more autonomous, it becomes increasingly challenging to hold individuals or organizations accountable for their actions. AI systems are increasingly being used to make decisions that have significant impacts on individuals and society as a whole, such as decisions related to healthcare, finance, and law enforcement (Dwivedi et al., 2021). However, the complex and opaque nature of AI systems can make it difficult to identify who is responsible for the actions and decisions made by these systems. AI systems can have unforeseen impacts on individuals and society, and if these impacts are negative, it can be difficult to identify who is responsible and to hold them accountable for the harm caused (Kim, Park & Suh, 2020).

According to Bertino, Kundu, and Sura (2019), transparency is another critical ethical consideration in AI. Transparency in AI refers to the ability of an AI system to explain its decisions and actions. This is important because it allows people to understand why the system made a particular decision and to evaluate the fairness and reliability of the system. One of the biggest transparency issues in AI is the lack of transparency in the algorithms that are used to make decisions (Bertino et al., 2019). Many machine learning algorithms are complex and difficult to understand, even for experts in the field. This can make it difficult to determine how the system is making decisions, which can lead to concerns about bias and discrimination.

Another transparency issue in AI is the lack of transparency in the data that is used to train the system (Schmidt, Biessmann, & Teubner, 2020). Machine learning algorithms rely on large amounts of data to learn how to make decisions. However, if the data is biased or incomplete, it can result in a biased and inaccurate AI system. If an AI system makes a decision that harms someone, it's important to be able to determine who is responsible for that decision. However, in many cases, it can be difficult to trace the decision-making process back to the individual or team that developed the system (Schmidt et al., 2020). AI systems can be complex and opaque, making it challenging to understand how they make decisions. This raises concerns about fairness and accountability, as individuals may not understand the factors that influence the decisions made by AI systems.

LITERATURE REVIEW

Buolamwini and Gebru's (2018) conducted a study which found that facial recognition systems had difficulty recognizing darker-skinned faces and female faces, and that the error rates for identifying darker-skinned individuals were up to 35% higher than for lighter-skinned individuals. The study analyzed the performance of three commercial gender classification systems, and found that they all had higher error rates for darker-skinned faces and female faces, indicating that these systems are less accurate for certain populations. The study highlights the importance of addressing issues of bias in AI, and of developing more inclusive and accurate systems that work for all people, regardless of their skin color or gender. The study showed that the datasets used to train the AI systems were not diverse enough, resulting in biased systems. To address this issue, the authors recommended the use of diverse datasets and the involvement of diverse stakeholders in the development and testing of AI systems.

Bostrom (2016) conducted a study on superintelligence focusing on paths, dangers, and strategies of AI. This study raises important concerns about the potential dangers of creating superintelligent AI, which could have catastrophic consequences if it is not aligned with human values. Bostrom (2016) argues that it is important to prioritize safety and ethical considerations in the development

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of AI, and suggests several strategies for doing so. One limitation of Bostrom's study is that it focuses primarily on the risks of creating superintelligent AI, and does not provide a comprehensive framework for addressing the ethical considerations raised by AI more broadly. Additionally, some have criticized Bostrom's arguments as being overly pessimistic and speculative.

Floridi (2019) conducted a study which provides a comprehensive theory of information that can be applied to a wide range of fields, including AI. He argues that understanding the logic of information is essential for developing ethical and effective AI, and that AI should be designed to align with human values and interests. While Floridi's study provides a useful theoretical framework for understanding information and its role in AI, it does not provide specific guidance on how to implement ethical considerations in the design of AI systems.

Calo (2015) conducted a study on robotics and the lessons of cyberlaw. Calo's article argues that the legal framework for cybersecurity can be applied to robotics and AI, and that laws and regulations should be developed to address the unique risks and challenges posed by autonomous systems. Calo (2015) suggests that regulatory frameworks should prioritize transparency, accountability, and public participation. While Calo's article provides useful insights into the legal and regulatory challenges of AI, it does not provide specific guidance on how to address the ethical considerations raised by AI.

Mittelstadt et al. (2016) conducted a research on ethics of algorithms. Mittelstadt et al's article provides an overview of the various ethical issues raised by algorithms, including bias, discrimination, and privacy. She argues that people need to develop ethical guidelines and frameworks for the use of algorithms, and that interdisciplinary collaboration is necessary to do so. One limitation of this article is that it focuses primarily on the ethical implications of algorithms, and does not provide guidance on how to address these issues in the design and development of AI systems. Additionally, there is still much work to be done to develop comprehensive ethical guidelines for the use of algorithms.

Müller (2021) did a study on the ethics of artificial intelligence. This study provides a comprehensive overview of the ethical issues raised by AI, including privacy, fairness, accountability, and transparency. He argues that developing ethical AI requires addressing these issues and developing ethical principles and guidelines. Müller (2011) also emphasizes the need for interdisciplinary collaboration and public engagement to ensure that AI serves the common good. The article does not present original research findings, but instead synthesizes existing research and debates on the ethical implications of AI. However, it highlights several gaps in current research and practice, such as the need for better methods for detecting and mitigating bias in AI systems, the importance of addressing the impact of AI on social and political institutions, and the need for more robust ethical frameworks for AI development and deployment.

Kiemde and Kora (2022) conducted a study on AI ethics in South Africa with an overview of the ethical considerations in AI research, development and deployment in South Africa. This paper provides an overview of the ethical considerations related to AI research, development, and deployment in South Africa, including issues related to bias, data privacy, and the impact of AI on the labor market. Kiemde et al. (2022) argue that AI ethics in Africa requires a nuanced understanding of the cultural, political, and economic context of the region, and call for greater engagement with local stakeholders in the development of ethical guidelines. One limitation of

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ISSN 2958 - 4094 (Online)
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this paper is that it focuses primarily on the challenges of implementing ethical AI in South Africa, and does not provide concrete recommendations for addressing these challenges. Additionally, more research is needed on the specific ethical concerns related to AI in different African countries and contexts.

Truby (2020) conducted a study to analyze the artificial intelligence, ethics and sustainable development in Nigeria. This paper explores the potential for AI to contribute to sustainable development in Nigeria, while also raising ethical concerns related to the use of AI in the country. The authors argue that ethical AI requires a human-centered approach that prioritizes the needs and values of local communities. One limitation of this paper is that it focuses primarily on the potential benefits of AI for sustainable development in Nigeria, and does not provide detailed guidance on how to address the ethical concerns raised by AI in the region. Additionally, there is still much work to be done to understand the specific ethical challenges related to AI in different African contexts.

Goffi (2023) conducted a study on ethics, AI and regulation in Egypt. This paper examines the challenges of regulating AI in Egypt, including issues related to data privacy, bias, and the potential impact of AI on employment. The author argues that ethical considerations should be embedded in AI regulation in Egypt, and that this requires greater collaboration between policymakers, researchers, and local communities. One limitation of this paper is that it focuses primarily on the challenges of regulating AI in Egypt, and does not provide concrete recommendations for addressing these challenges. Additionally, there is still much work to be done to understand the specific ethical considerations related to AI in different African countries and contexts.

Adams (2021) conducted a study on artificial intelligence and ethics in Rwanda. This paper provides an overview of the ethical considerations related to AI in Rwanda, including issues related to bias, transparency, and accountability. The authors argue that ethical AI in Rwanda requires a holistic approach that considers the social, cultural, and economic context of the region. One limitation of this paper is that it focuses primarily on the challenges of implementing ethical AI in Rwanda, and does not provide concrete recommendations for addressing these challenges. Additionally, more research is needed on the specific ethical concerns related to AI in different African countries and contexts.

SUMMARY OF FINDINGS

One of the key themes that emerged from the studies is the need for ethical considerations to be embedded in the design and implementation of AI systems. This means that developers and policymakers need to be proactive in identifying and addressing potential ethical concerns, such as bias, transparency, and accountability.

Another important theme is the need for collaboration and engagement across different stakeholders. There are already a wide range of guidelines and frameworks related to AI ethics, but there is also a need for greater coordination and alignment between different initiatives. Additionally, the studies emphasize the importance of engaging with diverse perspectives and communities in the development of ethical guidelines, to ensure that AI is designed and deployed in a way that is consistent with societal values and expectations.

The studies highlight the importance of transparency and explainability in AI systems. This is particularly important for ensuring that users are able to understand how decisions are being made,

American Journal of Technology
ISSN 2958 - 4094 (Online)
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and for identifying and addressing potential biases or errors in the technology. The study also raises important questions about the role of accountability in AI systems, and the need for mechanisms to ensure that developers and users are held responsible for the consequences of their actions.

The studies related to the ethics of AI in African countries highlight some specific challenges and considerations that are relevant in this context. There exist evidence that there are significant differences in the adoption and implementation of AI across different African countries, which can impact on issues related to transparency, accountability, and data privacy. The study also highlights the need for local communities to be engaged in the development and deployment of AI, to ensure that the technology is aligned with local values and expectations.

In summary, the studies related to the ethics of artificial intelligence highlight the need for ongoing dialogue and collaboration across different stakeholders, including developers, policymakers, researchers, and local communities. Ethical considerations need to be embedded in the design and implementation of AI systems, with a particular focus on issues related to transparency, accountability, bias, and privacy. While there are already a range of guidelines and frameworks related to AI ethics, there is a need for greater coordination and alignment between different initiatives, and for engagement with diverse perspectives and communities. Ultimately, the development and deployment of AI should be guided by a commitment to promoting human well-being and social good, and should be grounded in the values and expectations of the societies in which it is used.

CONCLUSION

After reviewing the various studies related to the ethics of artificial intelligence, it is clear that this is an important and complex issue that requires careful consideration. The development and deployment of AI has the potential to bring about significant benefits for individuals and society as a whole, but it also presents a range of ethical challenges and concerns. The studies discussed the ethical considerations surrounding the development and use of AI in developed and African countries. In developed countries, the studies showed that ethical considerations related to AI include bias, transparency, privacy, and accountability. Additionally, the studies emphasized the need for collaboration between stakeholders, including policymakers, researchers, and local communities, to ensure that ethical guidelines are developed and implemented.

In African countries, the studies highlighted the need for a nuanced understanding of the cultural, political, and economic context of the region when considering ethical AI. Issues related to bias, data privacy, and the impact of AI on the labor market were identified as important ethical considerations in the region. The studies emphasized the need for a human-centered approach that prioritizes the needs and values of local communities, as well as greater engagement with local stakeholders in the development of ethical guidelines.

Overall, the studies showed that ethical considerations related to AI are complex and context-specific, and require collaboration between stakeholders to ensure that ethical guidelines are developed and implemented effectively. Additionally, the studies identified research gaps related to the specific ethical concerns related to AI in different countries and contexts, as well as concrete recommendations for addressing the challenges of implementing ethical AI.

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RECOMMENDATIONS

Policymakers, developers, and researchers should work together to develop and implement ethical guidelines for AI systems. These guidelines should address issues related to bias, transparency, accountability, and privacy, and should be grounded in a commitment to promoting human well-being and social good.

There is a need for greater collaboration and engagement across different stakeholders, including policymakers, developers, researchers, and local communities. This can help to ensure that ethical guidelines are developed and implemented effectively, and that AI is aligned with local values and expectations.

Developers should prioritize transparency and explainability in AI systems, to ensure that users are able to understand how decisions are being made and to identify and address potential biases or errors in the technology.

There is a need for mechanisms to ensure that developers and users are held accountable for the consequences of their actions in relation to AI systems. This can include measures such as auditing and certification of AI systems, and the development of legal frameworks that hold individuals and organizations responsible for the outcomes of AI systems.

Policymakers, developers, and researchers should pay particular attention to the specific challenges and considerations related to the development and deployment of AI in African countries. This can include issues related to data privacy, transparency, and accountability, as well as the need to engage with local communities and ensure that AI is aligned with local values and expectations.

Funding Sources

The author received no financial support for the research, authorship, and publication of this article.

Conflict of Interest

The author declares no conflict of interest.

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