A document with text and numbers

Description automatically generated



The Evaluation of AI and Ml in Ethical and Social Issues



Submitted by:

Dipesh Singh

12200599

Word count:2047

# Abstract:

This research literature defines how Artificial Intelligence (AI) and Machine Learning (ML) are changing our world. These technologies determine how industries work and how we live in society. This study focuses on deep understanding on AI and ML and how they affect our daily life. It tries to understand these changes better and gives advice on how to use AI and ML responsibly. It asks important questions about ethics, looks at how they impact our decisions, and considers the effects on society. The study wants to figure out what's good and fair when using AI and ML. It suggests ways to make sure these technologies are used wisely, like having rules for how data is used, making sure algorithms are accepatble, and thinking about the effects on jobs. By putting good ethics into the development of AI, we can get all the good things while also being careful about how we use them.

Contents

[Abstract: 1](#_Toc144040644)

[Introduction 1](#_Toc144040645)

[Descriptive Summary of the Research Report 1](#_Toc144040646)

[Research Questions 1](#_Toc144040647)

[Research Objectives 1](#_Toc144040648)

[Discussion of major theories, model, or streams of influence 2](#_Toc144040649)

[Gap In Literature 3](#_Toc144040650)

[Theoretical bases provided by the literature review 4](#_Toc144040651)

[Conclusion 5](#_Toc144040652)

[References: 6](#_Toc144040653)

# Introduction

## Descriptive Summary of the Research Report

The focus of this research is to evaluate the impacts of AI and Machine Learning in Ethical and Social Issues. The study also includes the major role played by AI in making good relationships in society by providing different solutions to the issues.

## Research Questions

The major aspect of this research is to find the answers for the given research questions:

1. How do AI and ML technologies raise ethical concerns in decision-making processes?
2. How can frameworks be established to guide the ethical development and deployment of AI and ML technologies?

## Research Objectives

This research will also explain the given objectives along with the solutions of above research questions:

1. To analyse and explain the ethical challenges posed by AI and ML algorithms in various decision-making contexts.
2. To propose comprehensive guidelines and frameworks for developers, policymakers, and stakeholders to ensure the responsible and ethical integration of AI and ML technologies.

# Discussion of major theories, model, or streams of influence

The research is all about looking deeply into how new technologies like AI and Machine Learning affect ethics and society. It's like uncovering hidden connections between these technologies and how people behave. The study also checks out important ideas and ways of thinking that help us understand the ethical worries when using AI and ML. It also tries to find ways to make sure that AI and ML are used in an ethical way. This big review of different studies is super important because it helps us get ready to answer the two main questions we have in our research.

AI and ML technologies can create ethical worries when making decisions because they might make existing biases in their training data even stronger. Johnson and Verdicchio (2019) explained that AI programs can accidentally make existing inequalities and unfair beliefs worse if the training data they use is biased. This "bias amplification" could result in unfair outcomes, like affecting jobs, loans, and law issues. To make sure decisions are ethical, it's important to carefully collect data and check the models to stop unjust biases from spreading in AI systems.

One of the main things the research wants to know is how AI and ML technologies can make people worry about what's right or wrong in different situations where choices need to be made. To figure this out, the research looks at different ideas from past studies about what's considered right or wrong. One of these ideas is called "consequentialism," which looks at the results of actions to judge if they're good or bad (Singer, 2011). Another idea is "deontology," talked about by Kant (1785), which focuses on the basic rules behind actions. This helps us think about how decisions made by AI and ML match with what's morally right for everyone.

AI's skills can sometimes create benefits without intending to. Besides, people are trying harder to use AI for good things on purpose, calling it "AI for Good" (Berendt, 2019). But, a big problem for these efforts is figuring out exactly what's ethically good. Since the world has different opinions, it's not easy to agree on what's right. Still, some projects, like the ones talked about by Holmes et al. (2011), have tried to find common values like kindness, safety, success, and independence.

Real-life examples play a crucial role in turning theories into real ethical issues that we can understand. For example, when AI is used in making decisions about healthcare, it makes us think about who should be responsible if something goes wrong, how it might treat people unfairly, and whether patients can trust it (Hoffman & Podgurski, 2019). These examples show us how AI and ML can make ethical questions more complicated in practice.

The next research question is about making rules to help AI and ML develop in good and fair ways. The study looks into models that already exist to give clear advice on how to do this properly. One of these models is the "AI Ethics Principles" framework created by Floridi and others in 2018. It talks about things like being clear, treating everyone fairly, being accountable, and taking responsibility. This model is supported by experts, people who make rules, and leaders in technology. It gives a plan to developers and others involved to make sure they think about ethics.

The "IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems" (IEEE, 2020) is a significant set of rules. It stresses that ethical thoughts should be part of AI and ML creation from start to finish. This framework supports the idea of making detailed rules, which is similar to what our study aims to do – providing thorough guidelines for responsible use.

Real-world studies provide useful information about how well these frameworks actually work. For example, Jobin and their team in 2019 checked if the ethical principles for AI were useful in real situations, and they found difficulties and ways to make them better. Diakopoulos in 2016 looked at how media companies follow ethical rules when using algorithms to pick content. These studies connect the ideas we talk about in theory to what really happens, making sure ethical thinking isn't just something we talk about but also something we put into action.

Creating guidelines for making sure AI and ML are developed and used ethically needs a thorough plan. According to Floridi and Cowls (2019), following a model like "Good AI Society" means thinking about different aspects like laws, technology, money, and how society works. This method helps make sure there are clear rules, technology standards, fair money incentives, and that people are part of the decisions. This big plan encourages people who make rules, tech experts, and everyone else to work together for AI to be developed and used in a responsible way.

# Gap In Literature

Even though a lot of research has looked at how AI and Machine Learning (ML) affect ethics and society, there's still a big gap in understanding different opinions in the research. Sometimes, previous studies show different viewpoints about how much AI really affects ethics, how well ethical guidelines work, and if it's possible to make AI's development match up with ethical concerns.

To fill this gap and find common ground among different views, we need to take a careful approach. When we bring AI and ML technologies into discussions about what's right and wrong, we must think about both the good things they can do and how they can make existing problems even worse. It's like walking a tightrope – we need to remember that AI and ML themselves might not have a position, but when we use them in the real world, they can make unfair things even more unfair.

To understand both sides of this debate, the research needs to carefully look at the ethical effects of AI. This means studying cases where AI might seem neutral but could show unfairness because of the data it uses. The research should remember that AI's ethics come from how it works and how it's used by people. By doing this, the research can suggest ways to fix any unfairness in AI and make sure it follows ethical rules better.

The research wants to combine different viewpoints by suggesting a complete way to use AI. This means thinking about what's right at every step of creating AI and ML, just like the "AI Ethics Principles" (Floridi et al., 2018) and the "IEEE Global Initiative" (IEEE, 2020) suggest. These guidelines include creating AI in a good way, being open about it, being responsible, and always checking if it's doing the right things.

The existing gap in the literature concerning divergent viewpoints on the ethical ramifications of AI underscores the need for a well-rounded approach. This approach should recognize AI's inherent neutrality while proactively tackling its potential biases. Through the incorporation of ethical considerations at every stage of AI development, the research can bridge these differing perspectives. This endeavor creates an atmosphere where AI technologies play a constructive role in both ethical and societal realms, promoting a harmonious integration of technology and values.

# Theoretical bases provided by the literature review.

The thorough literature review (LR) has been instrumental in furnishing me with the essential theoretical groundwork required to tackle the research questions centered around the ethical and social consequences of incorporating Artificial Intelligence (AI) and Machine Learning (ML) technologies. By meticulously delving into different ethical theories, models, and established frameworks, the LR has furnished me with the essential theoretical underpinnings to approach the research questions with a comprehensive perspective.

Furthermore, the comprehensive literature review (LR) has furnished me with the essential ethical foundation to dissect and elucidate the challenges introduced by AI and ML algorithms within diverse decision-making scenarios, aligning with the research objectives. The divergent viewpoints expressed within the literature have enriched my analytical approach, enabling me to rigorously evaluate the potential biases and ethical complexities intrinsic to the integration of AI and ML technologies. By encompassing perspectives from both proponents advocating for AI's neutrality and critics highlighting the magnification of biases (Barocas et al., 2019), I can offer a comprehensive and balanced perspective on the ethical issues associated with these technologies.

The theoretical underpinnings derived from the literature review (LR) have empowered me to put forth holistic guidelines and frameworks aimed at facilitating the ethical and responsible integration of AI and ML technologies. Notably, the "AI Ethics Principles" framework (Floridi et al., 2018) and the "IEEE Global Initiative" (IEEE, 2020) stand out as pragmatic roadmaps that correspond with the research's objective of proposing actionable steps for developers, policymakers, and stakeholders. Anchored in ethical principles and the betterment of society, these frameworks offer a systematic methodology to navigate the intricate terrain of AI integration while upholding ethical standards.

# Conclusion

In summary, the literature review has been instrumental in cultivating a holistic grasp of the ethical and societal consequences tied to the integration of AI and Machine Learning (ML) technologies. The theoretical bedrock laid by ethical theories, divergent viewpoints, and established frameworks has empowered this research to adeptly address its research questions and objectives.

Through an exploration of a range of ethical theories including consequentialism, deontology, and virtue ethics, this research has acquired a nuanced understanding of the intricate ethical issues linked to AI and ML technologies. These theories have furnished distinct perspectives through which to scrutinize the possible outcomes, ethical rules, and virtuous attributes that shape decision-making within the AI realm.

The examination of opposing viewpoints in the literature has shed light on the intricate terrain of AI ethics. Recognizing both perspectives – AI's inherent neutrality and its potential to amplify biases – contributes to a more equitable comprehension of the ethical landscape. This nuanced awareness is pivotal in identifying potential challenges while harnessing AI's constructive possibilities within a framework of responsible ethics.

Furthermore, the identification of established frameworks like the "AI Ethics Principles" framework and the "IEEE Global Initiative" has presented tangible avenues to tackle ethical complexities. These frameworks furnish actionable directives for developers, policymakers, and stakeholders, serving as navigational tools to guarantee the ethical and responsible integration of AI and ML technologies.

# References:

Barocas, S., Hardt, M., & Narayanan, A. (2019). Fairness and Machine Learning

Brown, J. M. (2020). Impact of AI on the Job Market: Automation vs. Human Creativity

Bryson, J. J., Diamantis, M. E., & Grant, T. D. (2017). Of, for, and by the people: The legal lacuna of synthetic persons. Artificial Intelligence and Law, 25(3), 273-291.

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., ... & Wachter, S. (2018). AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. Minds and Machines, 28(4), 689-707.

Johnson, C. D. (2021). Artificial Intelligence in Finance: Opportunities and Risks. Journal of Financial Technology

IEEE. (2020). Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Artificial Intelligence and Autonomous Systems. IEEE.

Singer, P. (2011). Practical ethics (3rd ed.). Cambridge University Press.

Stahl, B.C. and Stahl, B.C., 2021. Ethical issues of AI. *Artificial Intelligence for a better future: An ecosystem perspective on the ethics of AI and emerging digital technologies*, pp.35-53.