A Comprehensive Study on the Responsible Usage and Development of AISystems Along with its Ethical Challenges Associated on its Deployment

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Abstract: *Artificial intelligence (AI) helps in the process of decision-making after analysing all the interrelated data. AI also serves to develop the performance of all other technologies. This reduces the complications in the task management system. The ethical challenges that hinder the performance of AI are data leakage, destruction of security systems and wrong interpretation of data. To solve the ethical challenges, it is important to increase the performance of AI. Through various literature review, this study has analysed the ethical challenges during the implication of the AI system and its deployment. This study has also represented responsible guidelines for implication and monitoring the AI system for proceeding with any kind of activity. It was found that AI depends on machine learning and data analytical tools. The ethical challenges have been identified to analyse the problems of AI technologies. The use of unbiased data helps to enhance the performance of AI in solving different issues. The methods of data collection and interpretation are based on the quality of data and that is essential to enhance the capability of AI. So, the ethical challenges of AI technology are interrelated with data safety and security, privacy protection, and source of data.*

Keywords: *AI, unbiased sources, machine learning, data protection and neural network system*

Introduction

Over the past ten years, artificial intelligence (AI) systems have become more and more popular because of their enormous potential to create economic value and ease social problems. As a result, there has been a global upsurge in AI usage as well as development in recent years. AI is thought to have the capacity to increase USD Over the past ten years, artificial intelligence (AI) systems have become more and more popular

because of their enormous potential to create economic value and lessen social problems. In 2035, India's GDP will have generated 957 billion, or 15% of total gross value added. The market for AI software is expected to grow from USD 10.1 billion to USD 126 billion by 2025. The technology's high-value proposition is another reason for its quick adoption rate growth.

The government's reform strategy has effectively positioned artificial intelligence (AI) thanks to the National Strategy for Artificial Intelligence (NSAI), which highlights AI's potential to enhance results in industries including healthcare, agriculture, and education. The role AI plays in enabling more inclusive access to government welfare services (such as voice interfaces or chatbots that speak regional languages) and more efficient delivery of specialized services (such as remote diagnosis or precision agriculture advice) suggests entirely new directions for government interventions in these areas.

AI has emerged as one of the most modernised technologies. It helps to proceed with any kind of task. The implication of artificial intelligence (AI) has increased with time as this has so many attractive features. The most attractive features of AI are related to its decision-making capabilities. AI is used to generate output or decisions after examining all the interrelated things with the help of different analytical tools. This study has analysed the ethical challenges during the implication of the AI system and its deployment. On the other hand, this study has also represented responsible guidelines for implication and monitoring the AI system for proceeding with any kind of activity.

AI system's design, development, and implementation must assume responsibility for their actions. To examine the possible direct and indirect effects of AI systems on end users, different stakeholders should carry out risk and impact assessments. They should also establish internal auditing and, if necessary, external auditing procedures also to ensure that the principles are followed. As well as grievance redressal procedures should also be taken in account if any unfavourable effect occurs. AI should be used with sufficient safeguards to assure the safety of important stakeholders. Most importantly it should be deployed reliably as planned. In the event of any unintentional or unanticipated harm, proper grievance redressal, care, and compensation mechanisms should be in place. Risks to all stakeholders should be kept to a minimum. Throughout its existence, the AI system must be observed to ensure that it operates in a way that meets the intended objectives and is dependable. When the conditions are relevant to the judgment, AI systems must treat people equally in different situations.

Privacy and security should be maintained by AI when there is personal or corporate data to be utilized to train the system. AI should follow good human values and refrain from interfering with social harmony in interpersonal relationships. It is important to make sure that the Principles of AI should be revised from time to time in the future. This will help to take into account the most recent discoveries, creative ideas, and technological advancements.

Nonetheless, the field of study on AI ethics is extremely vast and interdisciplinary. One review article cannot possibly address every potential topic in this field. We hope that this article can provide readers interested in AI ethics with enough background information and a broad overview to enable them to undertake future research.

Literature Review

Concept of AI system and its interrelated processes

AI technologies are interrelated with artificial technology which assists human beings in processing any kind of activity. There are several key components of AI which help this technology to perform and maintain all the tasks. Important elements of AI technology are machine learning, neural network systems, deep learning and analysis, natural language processing (NLP), cognitive computing and computer vision [1].

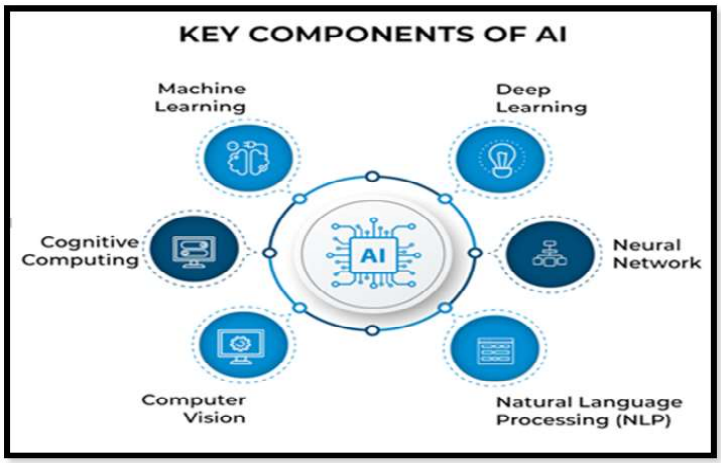

Figure 1: Elements of AI system (Source: 2)

The above-mentioned in figure 1, the important elements of AI technology that help the human being to do different kinds of activities. The implication of machine learning and neural networks is essential as machine learning helps to analyse things by using machine-based languages [2]. On the other hand, neural network systems assist in collecting and analysing interrelated data. Data computing and analysis are the most important tasks in the AI system as this helps to represent the decision [3]. Decision-making is possible by using data analytical tools which are integrated with the bits of help of data analytical tools such as big data analytics. Thus, AI is currently the most important developing technology which can replace the needs of human employees in the future [39].

Ethical challenges that derived during the implication of AI system

The consideration of ethics and disciplined ways to develop the technology is important for decreasing the possibilities of misuse of technologies. The implication of the ethics to protect personal data and privacy is the most important among all ethics. The Data Protection Act of 2018 represents that the protection of data is the responsibility of data analytics and these guidelines need to be maintained during the development of AI technology [4].

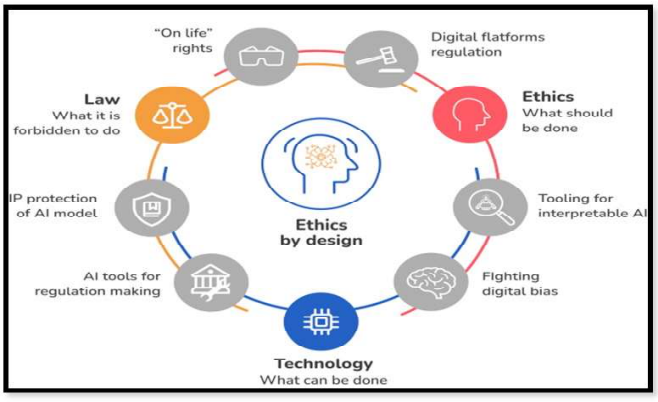

Figure 2: Ethical challenges of AI technology (Source 4)

The ethical challenges of AI technology are shown in figure 2, where it is clearly depicting the relation of law, ethics and technology with the ethics by design. With its helpAI technology is capable of collecting and using data for carrying out further operations. On the other hand, this helps to represent decisions after analysing the data. The technology should be fair and unbiased to protect the data from being transferred to other accounts and systems [5]. The ethical challenges of deployment of AI technology are accountability issues, data protection, privacy concerns, biased results and discrimination. Thus, the ethical challenges should be diminished to represent unbiased results from analysis. The implication of different disciplinary methods is important for the development of AI technology safer than other technology [9]. The determination of biased output is essential for reducing errors in the future [10]. The use of AI is increasing to manage all types of tasks [13]. AI can do more tasks within short periods [16]. A huge amount of data can be processed through the use of AI systems and it has raised privacy concerns in our society [17].

Different fields such as law enforcement, lending and hiring can face discrimination-related difficulties through the use of AI algorithms [18]. AI algorithms have made autonomous decisions which can generate challenges to identify accountability based on damages as well as mishaps [19]. AI algorithms based on transparency can help people understand the process of decision-making and include various perspectives based on the design phase [22].

Ethical AI algorithms can support human rights and focus on privacy as well as accountability [20]. AI algorithms have become more trustworthy in today's society [21]. AI algorithms based on transparency can help people understand the process of decision-making and include various perspectives based on the design phase [22]. Ethics guidelines are important for AI development to represent human rights as well as cultural context [23]. This framework has set a standard as well as guidelines to promote transparency, fairness, and accountability in AI technologies [24].

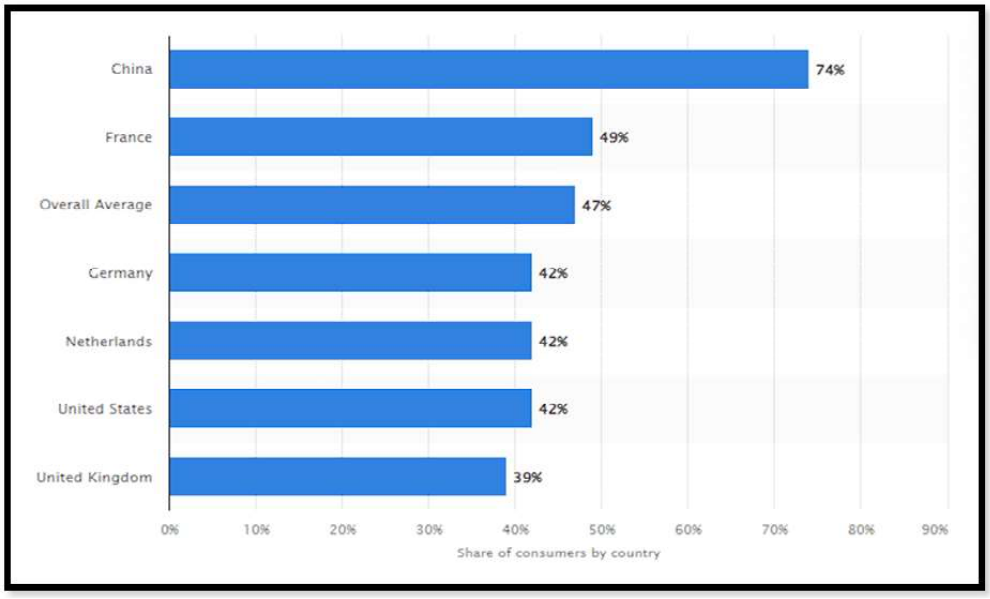

Figure 3: Percentage of people who face ethical issues in using AI in different countries (Source: 40)

The above figure 3 represents the percentage of people of different countries who believe that AI has ethical issues. It is observed that amongst some developed countries like France, Germany, China, Netherlands, United States, United Kingdom etc., maximum people as 74% of the respondents from China support the statement that AI has ethical issues [40].Data protection and ethical decision-making processes can help to build an AI system in the market [25]. Moral decision-making has been found in AI technologies based on some criteria and these criteria were established through the implications of laws [26]. The analysis of the data is also important before using it as input data for solving the error problems [36]. AI algorithms can rectify and detect the bias as well as the errors [27]. Counterfactual analysis is a technique which helps to find out the response of AI algorithms. Fairness is represented as a technique which helps to develop ethical AI-related technologies [28]. The fairness of the system can depend on the various data and their depth [29]. AI researchers can detect bias by analysing AI-related systems [30]. The management of stakeholders is also controlled through the use of AI as well as which helps to manage all activities [37].

Guidelines and framework to develop AI system

There are different useful guidelines for the implication of AI systems and to enhance its results. AI systems should be unbiased and their interrelated systems should be equally distributed among the whole system [6]. On the other hand, the AI systems need to be highly protected to be safe.

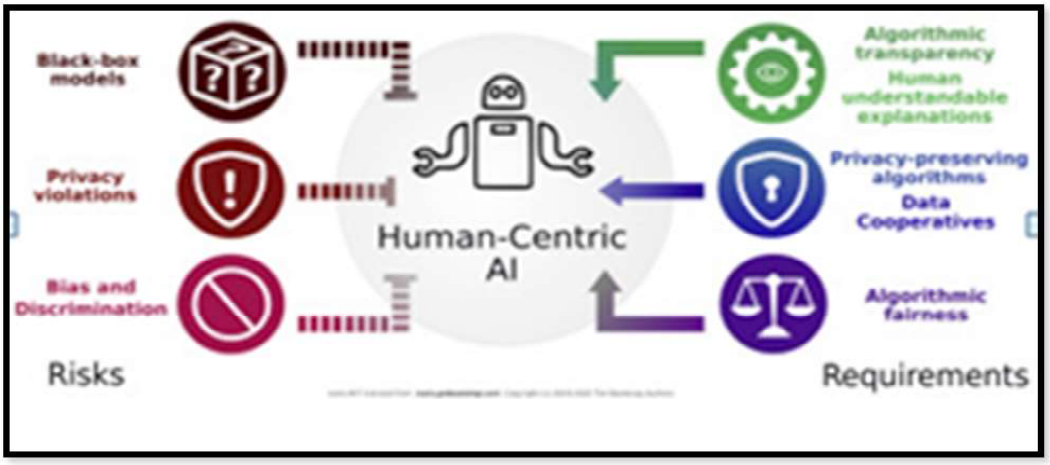

Figure 4: The risk and requirement of human-centric AI (Source: 6)

The reduction of loopholes in the network system is important for reducing the possibility of data leakage [7]. This increases the probability of safety and security of the stirred data. The AI system needs to be controlled in a fruitful way to prevent the AI system from involving with personal data. The problems related to accountability and responsibilities needed to be solved to increase the strength of the AI system [8]. AI algorithms and it requires regulatory factors to emphasise data collection and processing [31]. Responsible AI has represented a group of principles to show the growth of AI algorithms [32]. Setting standards based on expandability and transparency helps people to know the function process of the AI algorithms [33]. Fundamental rights have developed based on various factors such as privacy as well as non-discrimination [34].. The use of AI needs to be in a disciplined and regulative way to prevent its misuse [35]. The use of higher protective technology is essential to protect personal data

from being shared with another server [14]. The implication of limitations of AI technology and data safety tools are equally important for making AI technology more successful in the future [15].

Theoretical framework

Roko's basilisk theory

This theory states that AI needs to be highly protected as this can hamper the people who do not have the idea of it or those people who have failed to contribute to developing AI technology [11]. Data protection of the individual is the most important behind the development of the technology. The implication of data safety tools is important to boost the technology and performance to assist in the other tasks of human beings [12]. This theory has been used in this study as this explains the need for individual data safety in AI technology. The implication of AI-based theory helps to understand the capability of AI to solve critical issues [38].

Aim

The research aims to analyse the most effective ethical challenges that are interrelated with the deployment of AI technology and the most important framework and guidelines for the development of AI systems.

Objectives

1. To analyse the ethical challenges that need to be maintained to implicate and use AI-based technologies
2. To represent the ways to implicate the AI system and the way it can be used in a sustainable way
3. To represent actual framework and guidelines for using AI system
4. To suggest suitable ways to use AI-based technologies to prevent misleading and other unethical issues

Methodology

Literatures related to AI from different databases were gathered on the basis of some categories and their corresponding keywords. Those are some of the important ethical concepts of AI which needs to be understood in order to conduct the research.

AI technology is interrelated with machine learning, deep learning and analysis, computerised vision and automation technology. The implication of different disciplinary methods is important for the development of AI technology safer than other technology.

Table 1: Ethical concepts of artificial intelligence

Category	Keywords
Conceptual	Machine ethics, information technology ethics, AI ethics, virtue ethics and AI usability as friends
Robotics	Roboethics, robots, robotics, Automation, robot ethics
Philosophical and ethical	Autonomy, moral agency, moral status, trust, free will
AI specified ethical things	Artificial morality, artificial agents, artificial moral agents
Regulations	Rights, responsibility, regulations, human rights
Autonomous vehicle	Autonomous vehicle, self-driving cars, driverless cars
AI risks	Super intelligence, existential risk, artificial general intelligence
Human cognition	Consciousness, intelligence, human-robots interaction, machine intelligence
Technology	Value alignment

(Source: 10)

The above table 1 has included the ethical concepts of AI. Some different ways and methods help to reduce the biasedness of AI technology. The identification of potential sources of data and information is important. On the other hand, the determination of biased output is essential for reducing errors in the future. The use of screen models helps in the process of reducing errors in the process of AI technology. The use of AI is increasing to manage all types of tasks. This reduces the possibility of errors and enhances the quality of the task.

Findings and results

After analysing secondary data from different research papers some of the important findings were collected, which are presented in this section. Society can be significantly changed through the use of AI in various fields. AI can do more tasks within short periods. The impact of AI does not only depend on the technological field it can be extended to the societal as well as philosophical domain. Ethical challenges can occur at the time of AI deployment and these concerns are discussed in this section. A huge amount of data can be processed through the use of AI systems and it has raised privacy concerns in our society.

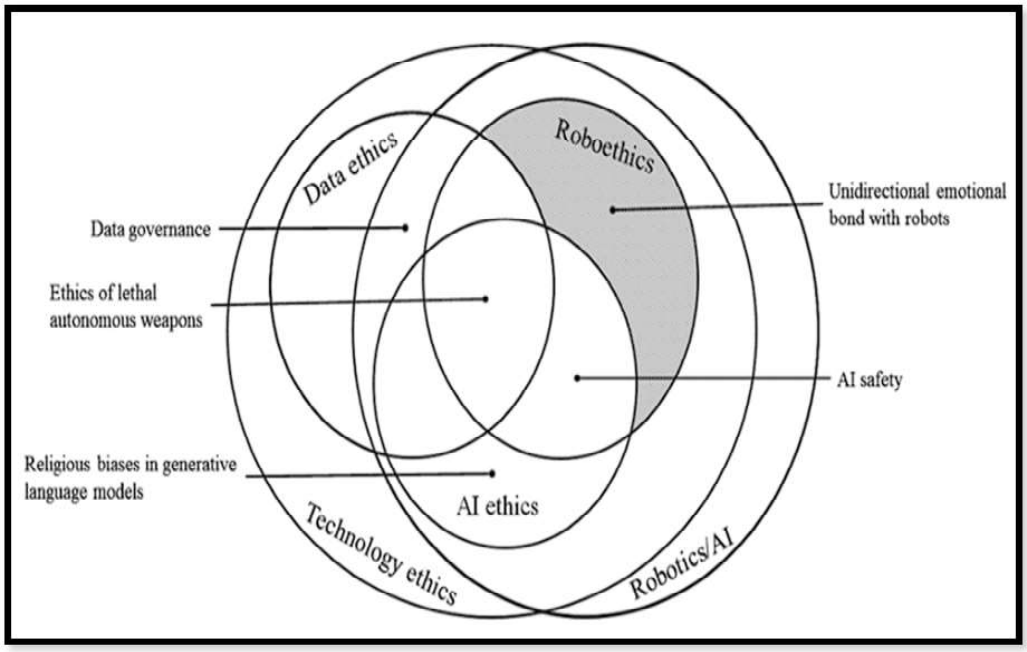

Figure 5: Data ethics and AI safety (Source: 18)

Unauthorized data breaches can occur which causes harmful impacts to individuals. Different fields such as law enforcement, lending and hiring can face discrimination-related difficulties through the use of AI algorithms. Data ethics and AI safety is shown with the help of a Venn diagram in figure 5.Human bias can also create difficulties in various sectors. AI algorithms have made autonomous decisions which can generate challenges to identify accountability based on damages as well as mishaps.

AI design has included ethics and it is necessary for its deployment. Ethical AI algorithms can support human rights and focus on privacy as well as accountability. Ethical AI needs algorithmic ethics and transparency. AI algorithms have become more trustworthy in today's society.

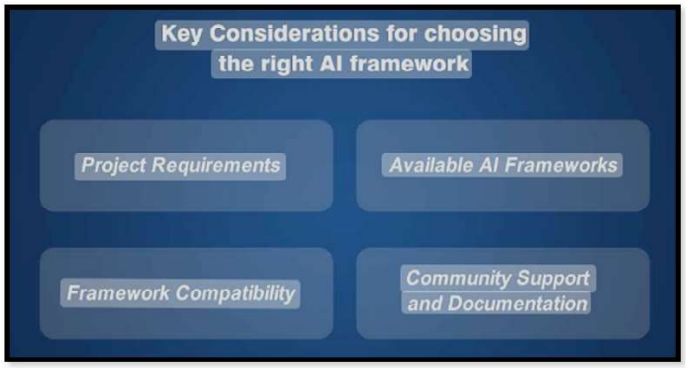

Figure 6: AI framework (Source: 22)

Transparency has been found in the ethical AI framework. AI algorithms based on transparency can help people understand the process of decision-making and include various perspectives based on the design phase. Regulatory framework has been implemented in various countries based on AI and it helps to safeguard the rights of individuals and ensure transparency as well as fairness and accountability.

Some of the important key Considerations for choosing the right AI framework are shown in the figure 6. Project requirements, available AI frameworks, framework compatibility and community support documentation are few of the key considerations for choosing the right AI framework.

To assess the possible direct and indirect effects of AI systems on end users, stakeholders should carry out risk and impact assessments. They should also establish internal and, if necessary, external auditing procedures to ensure that the principles are followed, as well as grievance redressal procedures if an unfavourable effect occurs.

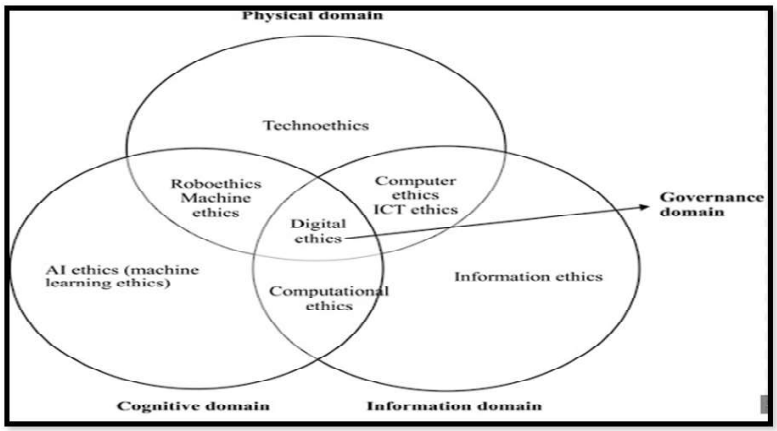

Figure 7: Ethical framework of AI (Source: 23)

Ethics guidelines are important for AI development to represent human rights as well as cultural context. In figure 7 another ethical framework of AI is shown where different domains like physical, governance, cognitive and information are represented. All the domains are interconnected. Ethics in different areas of AI includes Techno ethics, Information ethics, AI ethics (machine learning ethics), information ethics which again includes Roboethics machine

ethics, computer ethics or ICT ethics, computational ethics, digital ethics etc.

AI should be used with sufficient safeguards to assure the safety of important stakeholders, and it should be deployed reliably as planned. In the event of any unintentional or unanticipated harm, proper grievance redressal, care, and compensation mechanisms should be in place. Risks to all stakeholders should be kept to a minimum. Throughout its existence, the AI system must be observed to ensure that it operates in a way that meets the intended objectives and is dependable.

Fitness for purpose is trade-off in multiple dimensions that must be made explicit. Decisionds

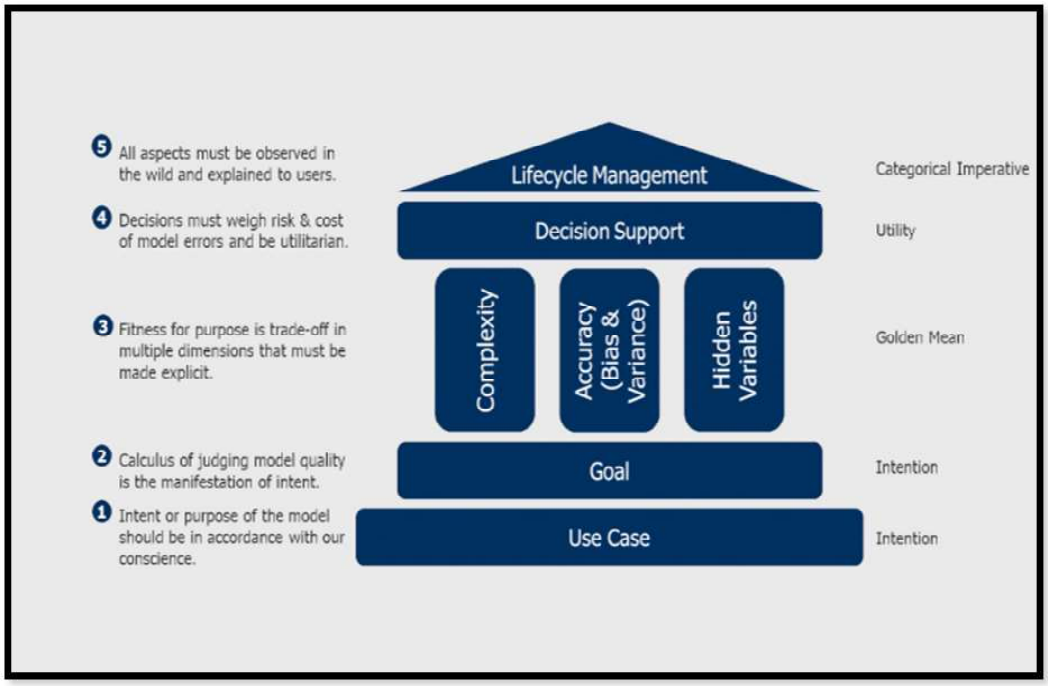

Figure 8: AI ethics framework (Source: 24)

The regulatory framework has a positive impact on the development and deployment of AI-related algorithms. This framework has set a standard as well as guidelines to promote transparency, fairness, and accountability in AI technologies. AI ethics framework is shown in figure 8, where lifecycle management, decision support, goal, use case etc. are shown. Intent or purpose of the model should be in accordance with the human conscience. Calculus of judging model quality is the manifestation of intent. Fitness for purpose is trade-off in multiple dimension that must be made explicit.

There is currently no agreement on AI ethics, and it is unclear what shared norms and principles AI should adhere to. Additionally, when applying AI in various contexts, distinct ethical guidelines might be needed. Currently, our literature review seldom ever finds research or discussion on the ethics of AI in many specialized application domains.

Therefore, it is imperative that the fundamental and shared ethical standards of AI be defined through dialogue and collaboration between many organizations, sectors, and governments

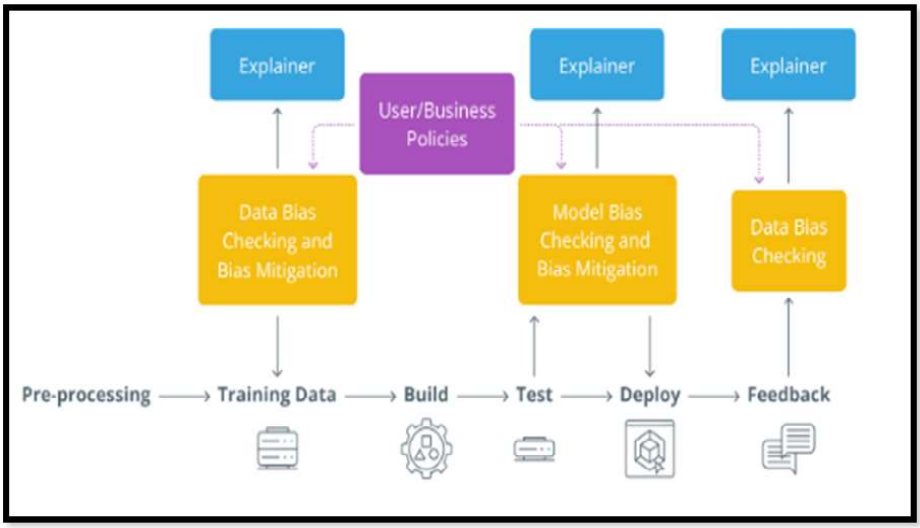

Figure 9: Mitigating bias through the use of AI algorithms (Source: 25)

It helps to mitigate discrimination as well as bias in present society. Data protection and ethical decision-making processes can help to build an AI system in the market. Regulations help to use AI algorithms in various fields. Moral decision-making has been found in AI technologies based on some criteria and these criteria were established through the implications of laws.

Figure 9 is showing the mitigating bias through the use od AI algorithm. Data bias checking and bias mitigation, model bias checking and data bias checking are important for the users.

Regulations can represent ethical standards in AI technologies and help to reduce discrimination in society. On the other hand, the analysis of the data is also important before using it as input data for solving the error problems.

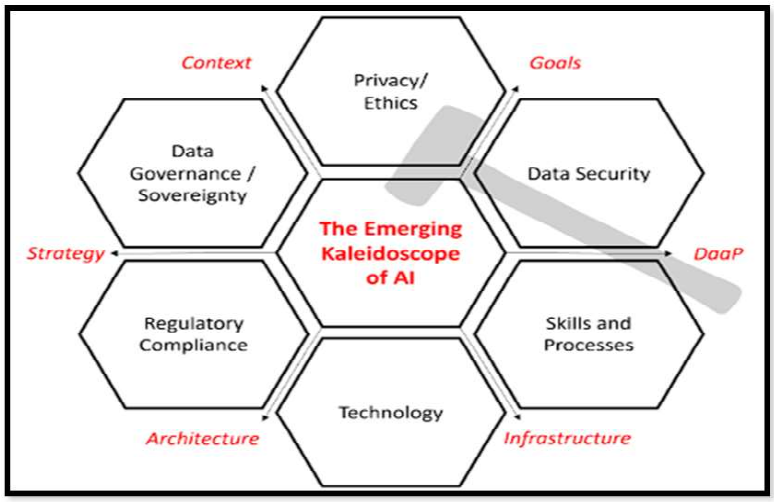

Figure 10: The interrelated things of AI (Source: 31)

The emerging kaleidoscope of AI in figure 10, helps to interrelate the things of AI algorithms and it requires regulatory factors to emphasise data collection and processing. Data management methods help to collect data and implement the data to control the mechanism of AI algorithms.Responsible AI has represented a group towards context, goals, DaaP, infrastructure, architecture, strategy pr to show the growth of AI algorithms. Organizations have used AI algorithms in privacy ethics, data security, skills and processes, technology, regulatory compliance and data governance to minimize the negative impact and increase the performance in the market.

Discussion

Various techniques are taken to gain transparency in AI algorithms and these techniques are included in model interpretation. AI algorithms can rectify and detect the bias as well as the errors. Counterfactual analysis is a technique which helps to find out the response of AI algorithms. Fairness is represented as a technique which helps to develop ethical AI-related technologies. This technique helps to detect discrimination in AI algorithms. The fairness of the system can depend on the various data and their depth. The biased algorithm can show biased data and this bias can show in various forms such as gender, racial, and socioeconomic bias and so on. AI researchers can detect bias by analysing AI-related systems.

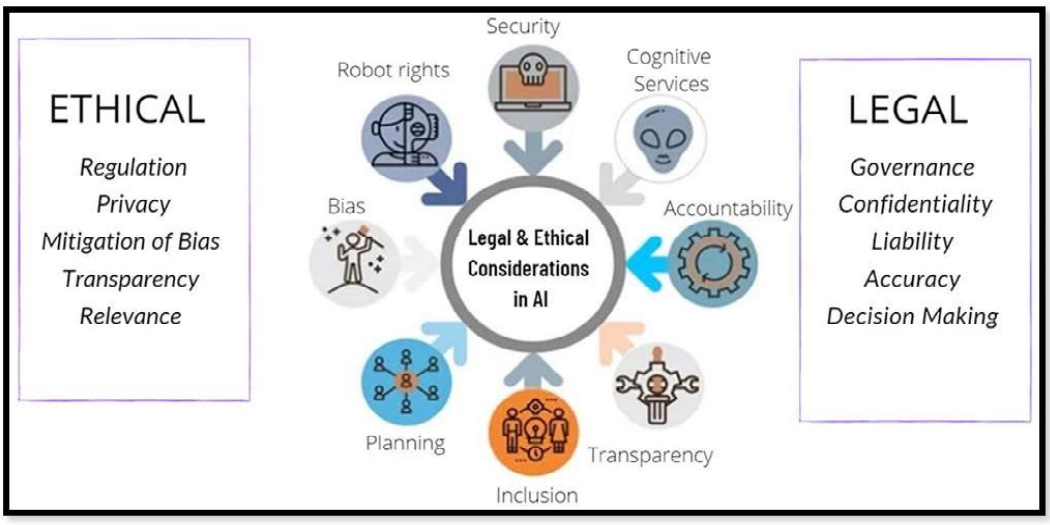

Figure 11: Ethics and legal things of AI (Source: 37)

Ethical AI can build ethical guidelines and AI algorithms have included various stakeholders in the development process of AI technologies. The management of stakeholders is also controlled through the use of AI as well as which helps to manage all activities.Ethical and legal things of AI are shown in figure 11, under which the security, robot rights, cognitive services, accountability, transparency, inclusion, planning and bias are included.

It is preferable to build new machine learning (ML) and other AI technologies in accordance with the ethical guidelines and principles, when it comes to technological techniques for tackling ethical challenges in AI. This will be a crucial first step toward creating ethical AI in the future, even though it is difficult to take into account several ethical standards at once while creating new AI agents. It is clear from the examination of approaches to morality evaluation that efficient evaluation techniques are desperately needed because the planned AI system needs to be tested before being put into service.

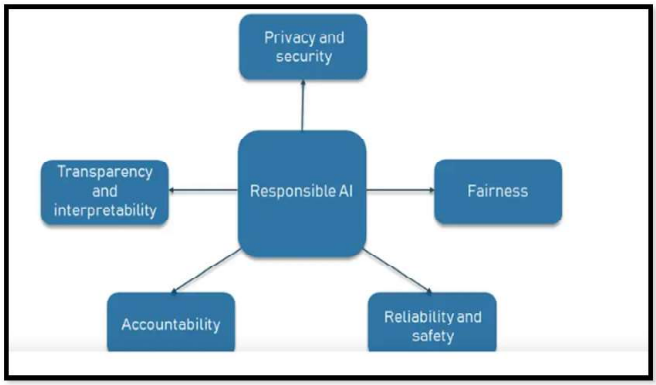

Figure 12: Key principles based on responsible AI (Source: 32)

Responsible AI has various key features such as transparency, fairness, accountability privacy and so on which is shown in figure 12. Fairness helps to make fair decisions in AI algorithms and it requires regulatory factors to emphasise data collection and processing. Data management methods help to collect data and implement the data to control the mechanism of AI algorithms. Responsible AI has represented a group of principles to show the growth of AI algorithms. Organizations have used AI algorithms to minimize the negative impact and increase the performance in the market. Setting standards based on expandability and transparency helps people to know the function process of the AI algorithms. AI design has been generated based on social responsibilities as well as compatibility to represent human rights and it helps to gain the support from the society. Fundamental rights have developed based on various factors such as privacy as well as non-discrimination. Ethical developers help to mitigate biases as well as help to show the ethical development of AI algorithms. The use of AI needs to be in a disciplined and regulative way to prevent its misuse.

AI Ethics Instructions

Students who get this form of instruction may develop a greater awareness of moral issues and learn to value a wider variety of viewpoints. However, educational initiatives need to advance beyond stand-alone ethics courses or drop-in modules. Motivated by the need to foster a professional attitude in individuals within the artificial intelligence industry, there are three components thataid in acquainting themabout developing such issues surrounding AI.

Acquiring knowledge on the significance of participatory design may prove to be crucial takeaway. Some course has the potential to educate a large number of AI developers to consider the moral implications of their algorithm design.Including core data science ideas and data acquisition ethics; employing real-world data sets that force students to consider privacy, justice, and legal concerns while creating AI solutions.

Teaching lessons in contexts; “ethics across the curriculum” is one approach but the basic idea is the importance of ethics, even in “technical” courses.The significance of forming interdisciplinary teams to produce and maybe instruct AI ethical content is a related subject. The problems that are arising with AI are too complex for any one area of knowledge to tackle and cut over disciplinary boundaries. When deciding how to teach students about AI ethics, perspectives from sociologists, policy researchers, attorneys, philosophers, and other experts can be very helpful in addition to scientists and engineers. This will attune studentsto get accustomed to AI’s ethical challenges. They can also urge to have the willingness to engage with those challenges seriously.

Ethical Guidelines and Principles for AI

The ethical concerns those surrounds AI have drawn increasing attention and discussion from a variety of societal sectors and numerous organizations (including those in academia, industry, and government). They have started to talk about and look for potential frameworks, rules, and principles for resolving AI ethics-related challenges. The ideas and criteria offered are helpful guidance for ethically using AI. By examining more than 100 reports, guidelines, and recommendations related to AI ethics published by businesses, organizations, and governments worldwide since 2015.This section aims to provide an up-to-date global landscape of AI ethics guidelines and principles. These principles and recommendations offer high-level direction for resolving ethical concerns related to AI as well as guidance for the design, development, production, and application of AI Ethics Guidelines.

A review of 84 ethical guidelines published by national or international organizations from different nations was done in 2019 by Jobin et al.who provided an outstanding overview and analysis of the existing concepts and guidelines on ethical AI. Jobin et al. discovered broad consensus on five fundamental principles—privacy, accountability, nonmaleficence, justice and fairness, and openness, among many others. Unfortunately, in the last two years, a number of new rules and suggestions for AI ethics have been published, rendering Jobin's article outdated due to the exclusion of numerous significant documents.

We have gathered numerous recently released AI ethical guidelines that are not included in Jobin's review in order to update and enhance the inquiry on ethical AI guidelines and principles. This is based on the table of ethics guidelines for AI provided in Jobin's paper, which only included 84 papers. Eventually, 146 AI ethics recommendations were gathered in all. The Supplementary Materials contains a list of all the guidelines and documents that have been gathered. A count and list of all the guidelines released annually between 2015 and 2021 may be found. It is evident that the bulk of the rules were published between 2016 and 2020, or the last five years.

The year 2018 saw the greatest number of guides published. There is also a list of the total number of AI guidelines released by each nation. Additionally, the guidelines published by various issuers (such as the government, businesses, academic institutions, and other groups) illustrates how governments, businesses, and academic institutions have all expressed serious concerns regarding the ethics of AI.

Additionally, the National Security Agency of India(NSAI) emphasizes the need for a strong ecosystem that supports innovative research to address these societal issues, act as a testing ground for AI technologies, and allow India to strategically assume global leadership by scaling up these solutions internationally.

Based on the core idea that AI systems should be created in a way that upholds fundamental rights, the following guidelines are suggested for the responsible management of AI in India:

1. The Principle of Safety and Reliability: AI should be used with sufficient safeguards to assure the safety of important stakeholders, and it should be deployed reliably as planned. In the event of any unintentional or unanticipated harm, proper grievance redressal, care, and compensation mechanisms should be in place. Risks to all stakeholders should be kept to a minimum. Throughout its existence, the AI system must be observed to ensure that it operates in a way that meets the intended objectives and is dependable.

2. The Equality Principle: AI systems must treat people equally in situations when the conditions are relevant to the judgment.

3. The Inclusivity and Non-discrimination Principle states that AI systems shouldn't exclude a qualified applicant based just on who they are. In terms of schooling, work, access to public areas, and other issues, it shouldn't reinforce the detrimental historical and social divisions based

on religion, race, caste, sex, descent, place of birth, or residency. It should also make an effort to prevent unjust exclusion from services or benefits. An adequate grievance redressal process should be created in such a waythat it is both affordable and available to all individuals, regardless of their background, in the event of an adverse decision.

4. Privacy and security should be upheld by AI when it comes to personal or corporate data that is utilized to train the system. Only those who have been granted authorization and adequate protections should be able to access it.

5. Principle of Transparency: To guarantee that the deployment is just, truthful, unbiased, and ensures accountability, the architecture and operation of the AI system should be documented and made available for external inspection and audit, to a practical extent.

6. Principle of Accountability: Everyone who works on the AI system's design, development, and implementation must assume responsibility for their actions. To assess the possible direct and indirect effects of AI systems on end users, stakeholders should carry out risk and impact assessments. They should also establish internal and, if necessary, external auditing procedures to ensure that the principles are followed, as well as grievance redressal procedures if an unfavourable effect occurs.

7. The protection and upholding of positive human values principle: AI should uphold good human values and refrain from interfering with social harmony in interpersonal relationships. It is crucial to make sure that these Principles are revised in the future to take into account the most recent discoveries, creative ideas, and technological advancements. It is important to examine a mechanism for the same and a framework for enforcing these Principles. Some iterations will also investigate particular policy measures for Responsible AI.

7. Challenges and future perspectives

Since AI ethics is still a developing topic, there are still a lot of issues that need to be resolved. In this section, we address certain ethical issues related to AI and provide our outlook for the future. This section aims to facilitate the advancement of research in the subject of AI ethics by offering some potential research questions, difficulties and prospective research directions.

A. Difficulties with AI Ethics: Principles and Guidelines as discussed, numerous organizations, businesses, and governments have put out a great deal of guidelines, each of which has its own set of guiding principles. But guidelines have been accepted and used separately by different governments, businesses, or organizations. Put differently, varying organizations, businesses from various industries, and even different businesses within the same industry, hold varying views regarding AI ethics. There is agreement on AI ethics, and it is unclear what shared norms and principles AI should adhere to. Additionally, when applying AI in various contexts, distinct ethical guidelines might be needed. Currently, our literature review seldom ever finds research or discussion on the ethics of AI in many specialized application domains. Therefore, it is imperative that the fundamental and shared ethical standards of AI be defined through dialogue and collaboration between many organizations, sectors, and governments.

Subsequently, every field can enhance these fundamental and shared ideas to make them broadly applicable within that particular field. The first step in creating an AI system that satisfies these criteria is to make clear the moral standards and values that the system must uphold.

B. Difficulties in Applying AI Ethics: There are several obstacles to overcome in the use of ethics in AI. This examines the difficulties that arise in applying various ethical theories in real-world situations.

C. Challenges of Virtue Ethics in Practice: In accordance with virtue ethics, an agent's behaviour is morally just if the agent embodies a virtue, that is, behaves and thinks in a way that upholds moral principles. It is impossible to determine the morality of an AI system or agent

just by looking at one or more actions that appear to indicate goodness; instead, the motivations behind these actions must be made evident. But the reasons for AI systems' behaviour are typically opaque, unknown to humans, and challenging to decipher.

That is the biggest obstacle to virtue ethics implementation. Furthermore, it is challenging to determine which virtue qualities or attributes an AI system would align with when we implement the ethical design based on virtue ethics. It is nevertheless difficult to define and quantify virtue, even when the virtue attributes have been properly chosen.

D. Practical Difficulties with Deontological Ethics: According to deontologists, a deed is morally just if it complies with certain moral laws, obligations, and standards.Deontological ethics' rule-based structure makes it seem appropriate for practice, yet there are difficulties in putting it into reality. Moral guidelines ought to be applied to ethical design. There may occasionally be inconsistencies between the regulations. While this issue may be resolved by ranking or evaluating the ethical norms, it is frequently challenging to ascertain which ethical principles are most important in that order.

E.The Difficulties with Consequentialism Ethics in Practice: An action's morality is determined exclusively by its consequences, according to consequentialist ethics.Consequentialist ethics implementation involves two primary obstacles. First one can be challenging to ascertain the effects of a choice or action. Because current AI models, particularly artificial neural networks, lack transparency or interpretability, the potential outcomes of the system's activities are typically unclear in advance.The second difficulty has to do with calculating the effects. Since the goal of consequentialist ethics is to maximize utility, defining and calculating utility is a crucial issue.

F. Difficulties in Coordinating Various Ethical Guidelines: Even in the same setting, ethical norms vary because of cultural, religious, and organizational variances. In addition to being needless, the proposal for a unified ethical standard is also challenging to implement.

As a result, it is crucial yet extremely difficult to coordinate ethical norms from various nations and organizations. Difficulties in Creating Technological Solutions to Reduce AI's Ethical Concerns Currently, popular research areas in AI communities include enhancing explainability, fairness, privacy protection, security, robustness, and other competencies linked to requirements of ethical AI. Unfortunately, the majority of current research is conducted from a narrow perspective of ethical standards. Multiple ethical requirements or concepts are still not integrated into present scientific activities. Building ethical AI systems that can satisfy numerous ethical standards requires the integration of many ethical dimensions that allow synergistic balances between multiple diverse ethical principles.However, because many ethical requirements clash or are incompatible, integrating several ethical dimensions into an AI system through technological means is highly difficult.

G. Difficulties in Assessing AI Ethics:By its very nature, ethics is a qualitative idea that depends on a wide range of difficult-to-quantify characteristics, such as those linked to race or culture. As a result, it is exceedingly difficult, if not impossible, to define ethics exactly. Because of this, there will always be some subjectivity in the assessment of AI ethics, depending on the individuals making the assessment. This presents difficulties for AI ethical research and applications.

Some future perspectives are highlighted which could be helpful for the study.

It should be noted that people never employ a single ethical theory while applying AI; instead, they will alternate between theories based on the circumstances or environment they find themselves in. This is because, contrary to what economic theory believe, humans are not perfectly rational agents. It is also because rigorous adherence to any moral theory can have unfavourable effects. This means that

representations of several ethical theories and the capacity to select one over the other should be given to AI systems. This technique to multi theory is called here. AI systems using a multi theory approach can apply various theories interchangeably based on the circumstances. Furthermore, as an ethical AI system must be approved by its users, the combination of normative ethical theories and domain-specific ethics that are acknowledged by domain experts is worthy of implementation.

It is preferable to build new machine learning (ML) and other AI technologies in accordance with the ethical guidelines and principles discussed when it comes to technological techniques for tackling ethical challenges in AI. This will be a crucial first step toward creating ethical AI in the future, even though it is difficult to take into account several ethical standards at once while creating new AI agents. It is clear from the examination of approaches to morality evaluation that efficient evaluation techniques are desperately needed because the planned AI system needs to be tested to get better service. It is now difficult to recommend a method for broad assessment. As a result, in some fields of study, academics have often tackled the issues related to evaluating moral competence. When it comes to the ethical testing of AI systems, domain-specific requirements, such as large datasets, seem to be required for some crucial application sectors, such as healthcare and driverless cars. Lastly, we suggest fusing evolutionary ethics with normative ethics in the development of moral AI systems since both nature and nurture contribute to the formation of moral behaviours.

While the evolutionary ethics approach can gain new moral competence through ongoing learning and evolution, normative ethics is similar to intrinsic moral capacities. This could be a good path for developing moral AI systems in the future. It is obvious that trying to address ethical issues in AI and to create ethical AI systems that are able to behave ethically is a difficult and complex endeavour based on our analysis of AI ethics and the many complexities and obstacles highlighted in this article. But the success of moral AI systems will determine if AI can play a bigger part in our society in the future.

Conclusion

This research has found that the ethical challenges of AI technology are interrelated with data safety and security, privacy protection, and source of data. All the data-related things are based on the server accountability and performance. The implication of AI technology helps human beings to complete tasks faster. On the other hand, AI helps to make independent machines for completing different kinds of tasks. The ethical challenges are crucial; as this causes to hamper the reputation of AI technology. There needs to be a higher security status to ensure the privacy of the users.

This article offers a thorough overview of AI ethics by summarizing and analysing the ethical risks and issues raised by AI. The approaches taken to address ethical issues in AI are highlighted. And the ethical principles of AI, and the techniques used to assess the ethics (or morality) of AI are also taken into consideration. By the ethical guidelines and principles issued by various organizations future research directions and obstacles in the use of AI ethics are also highlighted. Government leaders, users, engineers, philosophers, and AI scientists must collaborate to advance in the field of AI ethics.

Future Research

The main concept discussed in this study is the ways through which the ethical challenges of AI technology are reduced. The use of higher protective technology is essential to protect personal data from being shared with another server. There needs to be a disciplinary way to limit AI involvement as chatbots are permitted to serve customers for solving primary problems. The implication of limitations of AI technology and data safety tools are equally important for making AI technology more successful in the future. Thus, such research help to know the problems that may cause data leakage and create the possibility of biased outcomes.

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