The Ethical Impact of AI

Introduction

Ethics and its implications in artificial intelligence (AI) has been a recent controversial topic because of the factors and possibilities to consider. While AI can provide benefits to society, it can also have unforeseen consequences [8]. To evaluate these consequences, understanding the background of AI and which ethical issues are relevant helps to establish the topic. The objective of this paper is to highlight the main ethical issues surrounding AI which include job loss, breach of safety, manipulation, bias, and a quest for power or military strength.

Case Study Overview

Artificial intelligence refers to a machine-learning system that is able to learn and behave like humans [1]. AI is autonomous, meaning it follows a certain algorithm, or set of rules, to perform its function [2]. Ethics are the moral codes that humans decide and adhere to. In order to implement AI into society, ethics must play a role in the creation of intelligent AI in order to promote the well-being and survival of the human race [1]. As this societal shift occurs, stakeholders will be formed. Stakeholders include consumers, engineers, and companies. The consumers are the people purchasing the AI systems (virtually everyone), the engineers are the people that build the AI, and the companies are the entities that profit and manufacture the AI. Ethical implementation in AI-driven companies is rare and most of the guidelines formed are dismissed. These guidelines only cover the technical aspects of AI and fail to involve the care needed to implement AI systems into society.

Ethical Responsiblities, Concerns, and Issues

The relevant sections of the NSPE Code of Ethics involving AI are as follows: Canons 1 and 6, II.1, II.1.a, II.1.e, II.1.f, II.3, II.5, III.1, III.1.a, III.1.b, III.1.e, III.1.f, III.2, III.2.d, III.2.e, III.3, III.3.a. These sections have a common theme which is preserving human life by being honest, professional, and ethical.

An ethical issue that presents an economical concern is job loss. People find the idea of an AI replacing their job unfavorable which will result in the company (CEOs) making more money and wealth inequality. With employees' livelihoods at stake, the AI movement will dwindle because it directly affects the income and sustainability of the employees. Implementing AI in the workforce also goes against general fairness to people who are susceptible to replacement [1].

An ethical issue that presents a societal concern is breach of safety and manipulation in AI. An example of a safety breach in AI is an autonomous vehicle, a vehicle capable of making decisions based on the driving environment without human intervention. The problem with this type of vehicle is that if an accident does occur that involves humans, the system can't be relied on to always choose, what humans would deem, the ethically correct situation [6,8]. Safety can also be breached if an AI reaches singularity, or surpasses human intelligence. At this point, the AI will be able to constantly update its knowledge and could consider humans obsolete [2]. An example of manipulation would be AI's risks of getting hacked which could lead to theft, murder, spread of propoganda, and leaked personal information[6,8]. The breach of privacy and safety also extends to existing companies such as Google or Facebook that are constantly

collecting personal information using AI to sell the data to advertisers. Companies create individual user data models which consist of the users' sites visited, videos watched, purchases, etc. and sell these models to advertising companies which is a major breach of user privacy [1,3]. Another example of manipulation in AI would be human's reliability on AI. Personal AI assistants such as Siri promote laziness and cause mental deterioration. By reducing cognitive work, AI also reduces our ability to memorize information and relieves us of our autonomy. If Siri suggests a task, our minds become complicit with her suggestion [7]. Being manipulated by AI is also present in the healthcare system. For example, a healthcare AI would evaluate health from a technical perspective and would diagnose the patient, which would increase the likelihood of doctors relying solely on the AI's diagnosis. This could lead to misdiagnoses and a failure to emotionally connect with a patient [4].

AI can also introduce bias which would be classified as a societal concern. For example, if there is an AI that identifies criminals in a data set and it finds that most of the criminals in that data set are black, then it could make the assumption that black men are criminals. This bias or discriminatory perspective can result in the AI affecting people's livelihoods [1,6,8].

Another ethical issue of AI is the quest for technological power or military strength which is a global and environmental concern. Global competition has always centered on brute strength and military capabilities. AI implementation, such as autonomous weapons, would drastically increase the military power but it would also increase the amount of waste produced from their use [2,3,6]. The race towards this technological prestige would mean that the ethical guidelines associated with building this technology would be discarded (e.g. environment

protection), making countries blind to the precautionary recommendations to make humankind thrive [8].

Actions and Impacts

What can be learned from this case study is that humans have a long way to go before further AI implementation is expected. Engineers' responsibilities are to do what is right and serve to aid the prosperity of mankind. To do this, they have to be honest and hardworking. By discussing this case study, the issues can be met with solutions. These solutions include surveillance of all AI models, strict functionality and limitations for predictability, and remote shutdown or overrides [2, 5]. To achieve these solutions, the organizational culture in companies should promote ethical environments and adhere to the NSPE Code of Ethics so that AI's issues can proactively be tackled [4].

Conclusion

In conclusion, AI presents several challenges that will be accompanied by benefits and consequences. Engineers must proceed with caution when creating AI technology.

References

[1] B. Kuipers, "Perspectives on ethics of AI," in *The Oxford Handbook of Ethics of AI*, 1st ed.Anonymous 2020, Available: https://doi.org/10.1093/oxfordhb/9780190067397.013.27. DOI: 10.1093/oxfordhb/9780190067397.013.27.

The source talks about the implications of ethics in human society using examples. It uses the example of a vehicle with AI as being part of society and deems the necessary knowledge of the system should be to avoid a dilemma from ever happening. The source also talks about the invasion of privacy from applications like Google and Facebook. Finally, the source discusses that a society ultimately runs on fairness. By exploring ethical situations in AI and other technology, humans can further their understanding of an impending society where humans and AI coexist.

[2] A. Etzioni and O. Etzioni, "AI assisted ethics," *Ethics Inf Technol,* vol. 18, *(2),* pp. 149-156, 2016. Available: https://search.datacite.org/works/10.1007/s10676-016-9400-6. DOI: 10.1007/s10676-016-9400-6.

The source discusses the concerns with AI and their ability to supersede their programmers. Since AI are able to make their own decisions, they will have to make ethical ones. AI will also need surveillance by another program that can guarantee that they will make ethical decisions.

[3] P. Timmers, "Ethics of AI and Cybersecurity When Sovereignty is at Stake," *Minds and Machines (Dordrecht),* vol. 29, *(4),* pp. 635-645, 2019. Available: https://search.proquest.com/docview/2330606730. DOI: 10.1007/s11023-019-09508-4.

The source describes human and AI's battle for power. It also discusses the dilemma when creating an AI and the ethical issues that will arise regarding cybersecurity. It also overviews the author's policy recommendations and how they would deal with AI.

[4] J. Morley *et al*, "The Debate on the Ethics of AI in Health Care: a Reconstruction and Critical Review," *SSRN Electronic Journal,* . DOI: 10.2139/ssrn.3486518.

The source discusses the implementations of AI in healthcare systems. This would mean AI would have to be responsive in a way humans would approve of. The source also provides a methodological analysis and concludes that it is important to prepare for AI complications.

[5] A. Cohen, *Miri.* 2012Available: http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/*-SIM_5222. DOI: 10.1163/1573-3912_islam_SIM_5222.

The source raises the dilemma of creating AI and their capabilities. The AI would have to react in ways that preserve life and also maintain a moral compass. The source questions how humans will be able to analyze the AI's ethical responses to situations. The source also discusses the ability of AIs surpassing human intelligence and whether they will consider human's ethical analysis of them to be different than what the AIs perceive.

[6] V. C. Müller, "Ethics of artificial intelligence and robotics," in *The Stanford Encyclopedia of Philosophy*, Fall 2020 ed., E. N. Zalta, Ed. 2020, Available: https://plato.stanford.edu/archives/fall2020/entries/ethics-ai/.

The source describes the implementation of ethics and AI technology. The source describes how AI will affect our privacy, coexistence of human and machine, the criminal abilities of AI, and the employment dilemma between human and machine. The source also discusses the possibility of AIs collectively superseding human intelligence and becoming out of control.

[7] J. Danaher, "Toward an Ethics of AI Assistants: an Initial Framework," *Philos. Technol,* vol. 31, *(4),* pp. 629-653, 2018. Available: https://search.datacite.org/works/10.1007/s13347-018-0317-3. DOI: 10.1007/s13347-018-0317-3.

The source describes AI assistants (i.e. Siri) that are prevalent in phones which raises issues that were too dependent on them. The author addresses these complaints and analyzes the ethical aspects of them. By assessing the issues with smart AI, it can yield unexpected results.

[8] T. Hagendorff, "The Ethics of AI Ethics: An Evaluation of Guidelines," *Minds and Machines (Dordrecht),* vol. 30, *(1),* pp. 99-120, 2020. Available:

https://search.datacite.org/works/10.1007/s11023-020-09517-8. DOI: 10.1007/s11023-020-09517-8.

The source analyzes 22 guidelines regarding the ethics of AI that were released recently. The source compares the similarities between the guidelines and the content that was left out of the guidelines. It also suggests that the guidelines aren't as purposeful as they seem and the source improves their poor specifications.