Concepts and Technologies of AI

[AI & Ethics of AI]

Abstract

This report gives a brief overview of ethics in AI. It explains Ethics in Artificial Intelligence (AI), and its importance. This report describes how ethics play an important role to develop user-friendly AI. It covers the current development of new artificially intelligent technology such as Self-driving automobiles, nuclear power, a microchip in the brain, and the metaverse. Artificial intelligence that performs and acts ethically is known as ethical AI. To design acceptable ethical principles, norms, guidelines, laws, and regulations for AI, it is necessary to first recognize and analyze the ethical and moral challenges that AI may raise. AI has the ability to significantly disrupt our way of life and social norms. The window of opportunity to understand the consequences of these technologies and to detect their harmful consequences. In order to manage this new AI revolution, humanity must be proactive rather than reactive.

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1. Introduction

Artificial intelligence is the intelligence displayed by machines that can perform tasks with the requirements of human intelligence. Artificial intelligence ethics is a collection of moral beliefs and practices aimed at directing the development and application of artificial intelligence technologies. Businesses are beginning to create AI ethical codes as AI has become increasingly incorporated into products and services. The goal of the AI code of ethics is to provide direction to developers when making ethical decisions about AI.

Stephen Hawking, a well-known astronomer, and Nick Bostrom, a well-known philosopher, have both warned about the danger of a technological singularity if intelligent robots turn against their creators, i.e. humans. As a result, according to Nick Bostrom, creating AI that is needed is crucial. Artificial intelligence is a technology developed by humans with the goal of recreating, augmenting, or replacing human intelligence. These systems typically rely on massive volumes of data from a variety of sources to deliver insights. Poorly designed programs that rely on erroneous, insufficient, or biased data can have unintended and perhaps disastrous outcomes.

2. Finding

2.1 New technologies of Artificial intelligence

Self-driving automobiles, nuclear power, microchips in the brain, the metaverse, and other forms of new technology. The self-driving automobile is brand new to the globe, as though we can’t completely rely on autopilot mode to drive a car. It will take extra time to optimize in order to reduce the number of Accidents. AI has a crucial part in the medical field, as it aids in the diagnosis of new diseases. Artificial intelligence is transforming modern healthcare with technologies that can detect, evaluate, learn, and act, whether it's detecting new links between genetic codes or commanding surgery-assisting robots.

Neuro device is important for the disabled person, If implanted properly, may detect these signals as they pass – and learn to link them with the exact body movements they cause. Such a device could assist its user in bypassing paralysis or disease and regaining control of their body by collecting and re-transmitting these same brain signals. It must comply with the code of ethics and be subjected to additional testing. The overall functioning of a neuron takes time, Continuous regulation and testing are essential for the overall progression of the neurological condition to be solved.

Nowadays, Tech giant companies are more interested in investing money in the metaverse. The metaverse is a fictional universe that mixes parts of the digital and physical worlds, although it can access through AR and VR as off now. It also changes to a virtual economy in which users buy and trade goods. Metaverse is all about communication, people virtually feel the thing as real and easily buy a house, land, cloth. It creates a negative impact on people's life. It is possible in the future to have discrimination based on money and generate a gap between rich and poor people because rich people can buy different things but the poor can't. There is a distinction between genuine nature and actual life.

Every day, new technologies emerge. New technology appears, which is initially beneficial, but later on, we see a disadvantage. Every technological product has both benefits and drawbacks. The most important concern that arises when dealing with advanced artificial technology is that tech product is actually useful and beneficial for society.

2.2 Ethical Question Related to Neuralink

Elon Musk is a business tycoon and entrepreneur. He is the co-founder of Neuralink and OpenAI, as well as the founder of CEO, and Chief Engineer of SpaceX. He is also Tesla's CEO and the founder of The Boring Company. "Robots will be able to do everything better than us," Musk said during his latest speech. "I have exposure to the most cutting edge AI, and I think people should be concerned by it." Musk said, "Neuralink's working well in

monkeys, and we're actually doing just a lot of testing and just confirming that it's very safe and reliable, and the Neuralink device can be removed safely." The goal of Neuralink is to help humanity reach its full potential. Musk points out that our brains work at a much faster rate than our typing fingers or speaking mouths. People who utilize a Neuralink device will be able to learn and communicate at the speed of thought in the future, without having to write or speak a single word.

Neuralink has only been around for a few years of start, It should be more ethical toward Psychological and behavioral impacts. There will always be an equal balance between the benefits of neural interfaces and how they could potentially affect a person's mental state and behavior when the technology is used for medical purposes. Better brain-computer links have psychological consequences as well as the possibility for mind control and brain hacking. And it's not difficult to imagine a dystopian future in which machines control social behavior.

2.3 Ethical Question In Artificial intelligence

Companies must face a variety of ethical challenges and responsibilities when it comes to Artificial intelligence technology. The first is assurance; AI systems are built on a vast network of algorithmic and data processing capabilities. AI-enabled companies should be able to explain where their data originates from, how it's translated into data, what their algorithms do, and why they do it. The second one is indicators, how the resulting data is productive and efficient. And most important is who gets to judge those things for us, it is safe for us. The third one is responsibility. Lawyers, regulators, and citizens must work together to determine who is responsible for the outcomes of AI-based choices. When an Artificial intelligence system is safer in human activity, it's critical to achieve the proper balance. The last one is Fairness, data sets including personal details must be free of biases based on race, gender, or ethnicity. Artificial intelligence algorithms can be utilized for purposes in which they were designed not for other purposes.

The first strategy includes establishing a suitable framework for encouraging uniformity and implementing laws. If something goes wrong, ethical AI principles must also address how to deal with legal difficulties. AI policies could be included in a company's code of conduct. Customers, entrepreneurs, data scientists, and front-line staff all need to be aware of the restrictions, critical obstacles, and negative consequences of immoral AI and erroneous data. Executives must also develop artificial intelligence (AI) systems that can detect unethical or inappropriate behavior automatically. This entails a thorough examination of a company's internal AI, as well as its vendors and partners, for possibly harmful AI usage.

An ethical Artificial intelligence system must be explainable, have a positive purpose, unbiased, and works equally well across all spectra of society. It's difficult to trust a system whose activities aren't transparent. It may be essential to make a compromise in which a small sacrifice in model performance is taken to adopt an explainable strategy. A positive-purpose AI system, for example, tries to decrease fraud, eliminate waste, reward people, mitigate climate change, cure disease, and so on. If an AI system is to be trusted, data gathering, processing, and utilization must all be done ethically. Data should be acquired just when it is needed, not on a regular all the time, and data resolution should be as tiny as practicable in an ideal scenario.

Because algorithmic systems are rapidly developing, it's not always clear how Artificial intelligence arrived at its conclusions, so we end up depending on systems we don't understand to make critical decisions. An Artificial intelligence ethical framework is necessary because it highlights the risks and benefits of AI technologies, as well as the methods for using them responsibly. The industry and interested parties must consider key social concerns in order to develop a set of moral standards and procedures for appropriately using Artificial intelligence.

2.3 European Union policy and institution’s work on Artificial intelligence

The European Union is one of the first to started genuine policies. According to a recent EU policy statement, "trustworthy AI" must be legal, ethical, and technically sound, and must meet seven criteria: human oversight, technical robustness, privacy, data governance, transparency, fairness, well-being, and accountability. Much European research is now referred to as "responsible research and innovation," and "technology evaluation" has been a popular topic since the dawn of nuclear power.

The EU's first draft AI policy, which adopts a risk-based approach, is part of a larger effort to develop human-centric Artificial intelligence by removing errors and biases and ensuring that it is safe and trustworthy. The proposed law includes requirements to reduce the danger of algorithmic discrimination, particularly in regards to the quality of data sets utilized in AI system development. It also introduces human oversight of specific AI systems in order to prevent or limit threats to health and safety, which may emerge as a fundamental right when the Artificial intelligence system is implemented.

Table 3. Institutions' works on AI ethics and their objectives

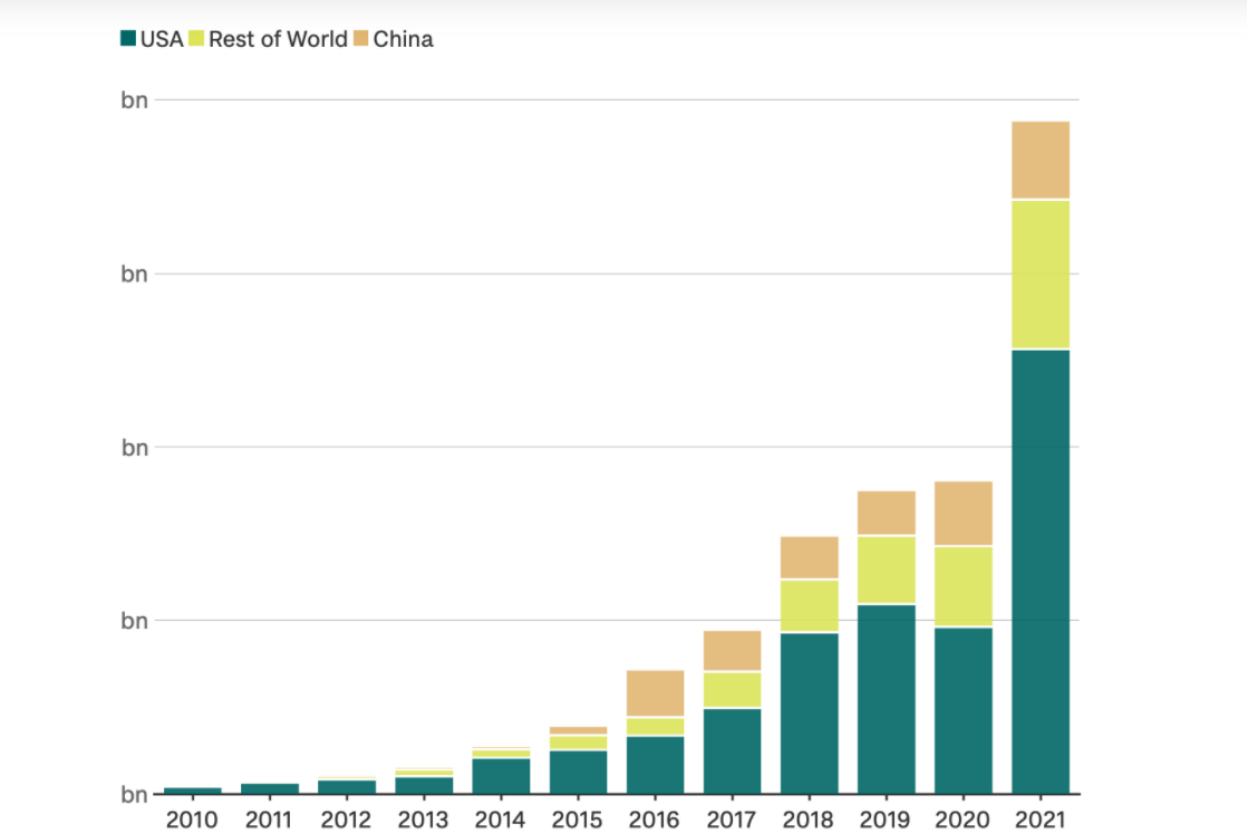
Resource	Objective
Future of Life Institute (2017)	This report emphasizes "do no harm". It requires the development of AI to benefit society, foster trust and cooperation, and avoid competitive racing.
International Association of Privacy Professionals (IAPP, 2018)	The proposed framework explores risks to privacy, fairness, transparency, equality, and many other issues that can be amplified by big data and artificial intelligence. They provide an overview of how organizations can operate data ethics and how to reflect ethical considerations in decision making.
Institute of Electrical and Electronics Engineers (IEEE, 2019)	The proposed design lays out practices for setting up AI governance structure, including pragmatic treatment of data management, affective computing, economics, legal affairs, and other areas. One key priority is to increase human well-being as a metric for AI progress. Besides, the IEEE principle requires everyone involved in the design and development of AI is educated to prioritize ethical considerations.
The Public Voice (2018)	The proposed guidelines aim to improve the design and use of AI, maximize the benefits of AI, protect human rights, and minimize risks and threats associated with AI. They claim that the guidelines should be incorporated into ethical standards, adopted in national law and international agreements, and built into the design of systems.
European Commission's High-Level Expert Group on AI (European Commission, 2019)	The guidelines are designed to guide the AI community in the development and use of "trustworthy AI" (i.e., AI that is lawful, ethical, and robust). The guidelines emphasize four principles: respect for human autonomy, prevention of harm, fairness, and explicability.
AI4People (Floridi et al., 2018)	This framework introduces the core opportunities and risks of AI for society; present a synthesis of five ethical principles that should undergird its development and adoption; and offer 20 concrete recommendations—to assess, to develop, to incentivize, and to support good AI—which in some cases may be undertaken directly by national or supranational policymakers.
United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2017)	The proposed ethical principle aims to provide decision-makers with criteria that extend beyond purely economic considerations.
Australia's Ethics Framework (Dawson et al., 2019)	This ethics framework highlights the ethical issues that are emerging or likely to emerge in Australia from AI technologies and outlines the initial steps toward mitigating them. The goal of this document is to provide a pragmatic assessment of key issues to help foster ethical AI development in Australia.

Sources: (Keng Siau, 2020)

2.4 Conflict between countries to become superpower nations

There is duality in the world where European Union is working to maintain and implement ethics for overall development. America, China, Russia, North Korea, and other country are in a race to become superpower nations. According to Nicolas Chaillan, former CSO of the US Air Force and Space Force, the US has "no competing fighting chance against China in 15 to 20 years" in terms of cyberwarfare and artificial intelligence, according to the Financial Times.

according to Chaillan, a 37-year-old successful tech entrepreneur, Many government agencies' cyber defenses are "kindergarten level," and companies like Google are doing the US a disservice by not collaborating more with the military on Artificial intelligence because Chinese companies are investing "massively" in AI without getting too caught up in the ethics of it all. While quitting your job because the US has already lost the AI competition is a bit excessive, Chaillan isn't the only one worried about China's domination.



Sources: (INDIAai, 2021)

The United States puts ongoing issues with China and Russia in the context of the Cold War. Many think that both countries are in a new Cold War, with the winner of the AI race rising to the throne as the world's leading superpower. The AI revolution, on the other hand, is about more than just conducting battles or attaining geopolitical dominance. It will alter nearly every aspect of our existence, from how we run businesses to how we process information to how we travel around.

Companies and businesses Corporations and CEOs can't have it both ways, refusing to accept responsibility for AI's negative repercussions while battling government regulation. The issue is that these massive digital firms are neither self-regulatory nor subject to sufficient government oversight. In my perspective, more of both is required. Companies must consider the ethical implications of their actions, and we, as democratic citizens, must educate ourselves about technology and its social and ethical implications — not only to determine the appropriate regulations but also to determine the role of big tech and social media in our lives.

3. Conclusion

There is a debate around that from one part, if there is more strong ethical law there will be less innovation and from another part, new innovation can be achieved with the ethical law. Every person saw the same things from a different standpoint. While the AI's original goal and purpose were to serve humans, achieving that goal in a harmful manner would have a negative influence on society. AI algorithms must be created with humans' long-term objectives in mind. While there will be various learning opportunities and challenges as artificial intelligence grows into new areas, it is predicted to have a beneficial rather than negative impact on society. We don't know how probable this scenario is, but when new technology comes, there are usually unintended repercussions. The unintended outcomes from artificial intelligence are going to bring plenty of issues.

To summarize, for a variety of reasons, ethics must be integrated into AI systems, including giving safety rules that can help humanity prevent existential risks, resolving discrimination concerns, constructing friendly AI systems that will conform to our ethical standards, and assisting humanity in flourishing.

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