EXPLORING THE DEBATE ON ARTIFICIAL INTELLIGENCE: BOON OR BANE?

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Abstract. *Today, we are living and breathing artificial intelligence. As we all clearly see, AI is interfering with all aspects of our lives; some may call it the backbone of our industry, education, and healthcare sectors. As AI has appeared on the "tech stage," people have appreciated it as being either a threat to humans' welfare or a revolutionary tool meant to make our lives substantially easier. People have always feared fast modernization. The Industrial Revolution was a time of significant mechanization and innovation that later expanded across a large portion of the globe. At the time, people were scared that machines would take their jobs, enslave humanity, and end up destroying humans. The same dystopian scenario is pictured nowadays, mainly because the changes are happening very rapidly. In the given paper we try to reveal the positive impact of AI and its disadvantages too.*

Keywords: *technological innovation, machine learning, impact, security, privacy.*

Introduction

It's absolutely clear that Artificial Intelligence is going to change the world, but people still have a hard time agreeing on how this is going to happen. Amy Webb defines AI as a system that makes autonomous decisions-meaning that it might become able to program or reset itself. She argues that "We can't sit around waiting for whatever might come next, AI is already here." [1] and tries to generally prepare people to be submerged into a new era of changes.

Being among the fastest-developing technologies, AI has a wide range of applications.

Smart Digital Assistants

Alexa, Google Home, Siri, and Amazon Echo are good examples of AI applications. According to **Tech Jury** [2]:

- **97% of mobile users are using AI-powered voice assistants;**
- **More than 4 billion devices already work on AI-powered voice assistants;**
- **40% of people use the voice search function at least once every day.**

The fact that AI is able to access information faster doesn't threaten us because we are the ones that, in the end, use that information. Sam Harris, a neuroscientist, philosopher, and New York Times best-selling author, outlines, in one of his Ted-Talks [3] the situation in which, even if people don't despise ants, we would easily destroy some ant hills in order to raise a new building. This is how he presents what our real fear about AI should be: The moment when a difference between human's objective and a robot's one has a slight difference, who is going to resemble the ants?

Innovation, Global Challenges, and the positive impact of AI

A consequence of the fast development that happened during the late centuries and continues to occur faster and faster is that the people's necessities have also changed. Our ability to solve certain problems (such as rapid long-distance transportation of goods) causes the need to solve other major problems (such as pollution and overconsumption).

According to Calestous Juma, the world faces four main challenges: sustainability, health, security, and life enrichment [4].

- **Sustainability** encompasses the need to make solar energy economical, provide energy from fusion, develop carbon sequestration methods, and manage the nitrogen cycle.
- **Health** requires access to clean water, better medicines, advancement in health informatics, and research on brain's functionalities.
- **Security requires** actions to secure cyberspace, prevent nuclear terrorism, and restore and improve urban infrastructure.
- **Life enrichment** requires work to advance personalized learning and engineer the tools for scientific discovery.

Human understanding of the role of technological innovation is changing due to three major reasons: **faster pace of innovation**, **the shortening of innovation cycles**, and **globalization**. Advances in science, technology, and engineering will enable humanity to devise solutions that previously existed only in the imagination.

AI is reforming many industries, allowing companies to improve and automate complicated analytical tasks, study data in real-time, adjust their behavior with minor needs for supervision, and increase accuracy and efficiency.

AI can be used to predict and adapt to specific scenarios, reduce energy costs, and improve healthcare. AI can also be used to sift through massive amounts of data in record time, helping researchers pinpoint areas of focus for their own research. For instance, a recent discovery on Amyotrophic Lateral Sclerosis (ALS) was discovered thanks to a partnership between Barrow Neurological Institute and the artificial intelligence company IBM Watson Health. AI can be used to predict the outcome of drug treatments, save time, money, and provide a highly customized approach to healthcare [5].

All 193 United Nations member countries ratified the 2030 "Sustainable Development Goals" (SDG) in 2015, a call to action to "end poverty, protect the planet, and ensure that all people enjoy peace and prosperity." [6].

For instance, the first objective aims to eradicate poverty in all forms and dimensions by 2030, targeting the most vulnerable, increasing basic resources and services, and supporting communities affected by conflict and climate-related disasters. As of 2015, about 736 million people still lived on less than US$1.90 a day; many lack food, clean drinking water and sanitation [7].

The question that concern us is "How is AI helping to reach such goals?"

Examples of how, so far, AI has helped improve efficiency regarding major problems: (Figure 1)

- Pinpointing the most problematic areas.

Many so called "wealthy countries" are able to use household surveys and census data to identify impoverished areas. Regrettably, in less developed countries like the ones from Africa or South Asia this information isn't often accessible. Also, collecting this kind of data is expensive, time-consuming and challenging. As a solution, Stanford researchers combined high-resolution satellite imagery with powerful machine learning algorithms to predict poverty in Nigeria, Uganda, Tanzania, Rwanda and Malawi. The algorithm found numerous features that relate to agricultural regions, bodies of water, and urban areas, but also various elements that were hard to interpret. It could predict poverty 81% – 99% more accurately than a nightlight - only model, allowing policymakers to monitor economic well-being and evaluate the effectiveness of antipoverty programs [8].

Health	Transportation	Fraud Prevention
AI has been used to help diagnose breast cancer, reducing false positives by 5.7% and false negatives by 9.4% compared to traditional screening methods. AI has been used to predict patient risk of developing sepsis with 98.5% accuracy, potentially saving thousands of lives each year.	Self-driving cars have the potential to reduce traffic fatalities by up to 90%, saving over a million lives each year.	AI has been used to detect and prevent fraud in financial transactions, reducing the risk of financial losses.

Figure 1. AI's beneficial interventions in different fields

Even if there are clear facts that sustain the efficiency of AI algorithms in the main domains of life, the feeling of uncertainty, anxiety, and skepticism is persistent among critics, scientists, and even non-experts.

Why is such a well-intended tool as AI so frightening?

The first and most worrying concern regarding AI's popularization is job losses. This element could be appreciated as a double-sided coin: AI automatization is, indeed, going to take away some tasks, but it will also create new ones. Robots and machines have, for a long time, been introduced in manufacturing and other mechanical-work centers. Machines do today tasks that were before performed by humans. It represents a process that benefits and, also, hurts us.

In fact, data collected in 2022 [9] shows that since 2000, numerous manufacturing jobs have gradually been eliminated by robots and automation technologies:

- 1.7 million manufacturing jobs have been lost to automation so far
- According to technical unemployment data and projections, the manufacturing sector alone could lose up to 20 million jobs in the next ten years. The 8.5% of the global manufacturing workforce that these jobs represent will have a significant impact [9].

On the other side, it's predicted that AI will create 97 million new jobs by 2025 [9]. In addition, job disappearance is not a completely new phenomenon people must face: during the Industrial Revolution, many farmers lost their jobs due to mechanization. People are able to reorganize and adapt to new conditions, but there will always be fields in which an AI machine won't be able to cope with the tasks: educators, therapists, lawyers, writers, social workers, medical professionals, managers, etc. According to Kai-Fu Lee, AI expert and CEO of Sinovation Ventures, AI machines and robots still have lapses to work on:

1. "AI cannot create, conceptualize, or manage complex strategic planning.
2. AI cannot accomplish complex work that requires precise hand-eye coordination.
3. AI cannot deal with unknown and unstructured spaces, especially ones that it hasn't observed.
4. AI cannot, unlike humans, feel or interact with empathy and compassion; therefore, it is unlikely that humans would opt for interacting with an apathetic robot for traditional communication services. " [10].

Another important reason people are worried about the future of AI is security, personal data, privacy, and social manipulation.

Conclusions

Taking everything into consideration, we could easily conclude that AI has both shown its efficiency and its dangers. The most important thing to understand is that every new technological machine has drawbacks, but we don't have to overlook its advantages. Keeping AI in a position that would well-serve humanity depends on us and on IT developers. Furthermore, AI as well as all Machine-Learning devices are created by human beings, who must respect morality and society's general rules. Obviously, our fear towards new technologies is normal and welcome, and we must use our skepticism to develop AI as well as possible.

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