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IS THE ADVANCEMENT OF AI A THREAT TO HUMAN JOBS?

*AVANEESH REDDY BHIMAVARAPU

**Affiliation: Mahindra International School Pune*

ABSTRACT

This research paper studies if the advancement of AI is a threat to human jobs. This was completed by reviewing literature and analyzing data collected from an online survey on this same topic. According to the research, AI is a threat to human jobs, but it is also in some ways, beneficial to human jobs. These two sides of the argument are further discussed in the paper.

KEYWORDS: *AI, automation, job displacement, job transformation, new job opportunities, reskilling, adaptability, socioeconomic implications*

INTRODUCTION:

The replication of human intelligence functions by machines, particularly computer systems, is known as artificial intelligence. (Burns 1). Since AI effectively enables computers to think and behave like humans, but at considerably quicker rates and with far more processing capability than the human brain can provide, it is a very powerful and useful technology. (Why is AI important? 2). The use of AI can be found in multiple fields, ranging from healthcare and manufacturing to gaming. The applications of AI in various fields increase daily, with the increase in technological advancements. The advancement of AI impacts human occupations, both positively and negatively.

REVIEW OF LITERATURE:

Since the invention of AI in 1951, by Christopher Starchey, at the University of Oxford, AI has replaced millions of human jobs, all over the world. According to Forbes, the United States has already lost 60 million jobs to artificial intelligence, with millions more predicted to come. According to the World Economic Forum (WEF), currently, machines (powered by AI) perform about 30% of all tasks, with humans handling the remaining 70%.

Although, the balance is anticipated to drastically shift to a 50-50 mix of humans and machines by the year 2025. PriceWaterhouseCoopers, a leading management consulting firm, stated that "AI, robotics, and other forms of smart automation have the potential to provide substantial economic benefits, contributing up to \$15 trillion to global GDP by 2030." But a heavy human cost will accompany it. There are worries that this additional wealth could eliminate a large number of current jobs, but it will also increase demand for numerous jobs. According to an IBM survey, more than 120 million people will need to undergo retraining globally over the next three years as a result of the influence of artificial intelligence on jobs. The number of people who will be affected is enormous. According to management consulting company Oliver Wyman, even the most developed cities in the world are not prepared for the upheavals brought on by artificial intelligence. Artificial Intelligence (AI) advancements have the potential to lead to previously unimaginable levels of prosperity for people. They have the capacity to harm our economies, damage generations' worth of lives, and, if experts like Stephen Hawking and Elon Musk are to be believed, eradicate humanity. The Dallas Mavericks basketball team owner and tech billionaire Mark Cuban stated in a CNBC interview that President Donald Trump has to be more aware of technological breakthroughs in artificial intelligence and how it would affect the future of the United States. According to Cuban, fewer people will be employed as a result of these corporations opening new operations. (Kelly 1-4). But why is this happening? Why and how has AI taken over millions of jobs of hardworking individuals? What does it offer that human cannot?

The use of artificial intelligence technology has several critical benefits over humans. Firstly, AI is less error-prone when compared to humans. We all make mistakes because we are human, it is in our nature. On the other hand, computers are immune to human error. They are given a set of instructions, which they carry out exactly as written in the code. For occupations like data entry, where a single error could cause havoc, this is crucial. (Shalamanov 1). Using AI, 5 common human errors can be eliminated. The first one is confirmation bias, which influences how we find, understand, and remember information. In the corporate sector, gut instinct frequently trumps data, and information is changed, left out, misrepresented, or misread in order to support one's own opinions. Furthermore, when information contradicts beliefs, it is criticized and ignored. By using past data to look for trends, patterns, and outliers, artificial intelligence avoids the practice of cherry-picking data and produces reliable, unbiased results. A second human error which AI eliminates is downplaying losses. Humans are loss-averse by nature. For example, some Toyota models were removed from Consumer Reports' list of suggested vehicles as a result of Toyota's downplaying the significance of braking problems in their vehicles. Leaders who minimize loss develop tunnel vision and are unable to make wise decisions. Additionally, this may end up costing the organization money in the long run. The tendency of humans to favor positive outcomes is unquestionably eliminated by artificial intelligence since it has an analytical DNA that allows it to comprehend and evaluate data as it is, favoring neither positive nor negative patterns. As a result, executives aiming to base choices on complete information rather than a partial picture have AI-driven analytics as a perfect ally.

The third human error is the inability to go beyond surface-level analytics, which AI removes. Businesses that dig deep to identify the underlying causes of issues can outperform those that don't by a long shot. The agents behind a problem can be found through root cause analysis, which can also suggest solutions and suggest ways to avoid similar issues in the future.

However, when there are too many data sources, organizational structures, and silos, it is impossible for humans to gather, examine, and dig deep to carry out root cause analysis.

AI-driven analytics can get over these obstacles by quickly sifting through several levels of data at once. AI may also overlay multiple potential outcomes to identify the most likely cause of a problem. (Baskaran 1-3). Another advantage AI technology has over humans is that it can perform dangerous tasks, which humans cannot efficiently perform. Workers who perform tasks like mining, manufacturing, and machine assembly are all at some level in danger. There are always going to be scenarios and situations where people might be gravely hurt or killed, whether it be from hazardous gasses, falling items, or extremely hot or cold conditions at work. AI can be applied in manufacturing to improve processes' efficiency as well as to protect the safety of human workers. Product creation, logistics optimization, predictive maintenance, and of course robotics are some areas in which AI and machine learning can be used in the manufacturing industry.

Although machines can also be broken or destroyed when performing hazardous tasks, they are not nearly as delicate and are made to endure extremely high pressures, temperatures, airborne poisons, and other dangers. (Shalamanov 2). According to the World Economic Forum, by the year 2035, AI automation could take up around 50 per cent of the welding tasks, which is quite dangerous for humans, as it deals with very high temperatures. (Newton 1).

Furthermore, AI machinery is more cost-efficient in the long run, compared to human employment. According to the APA, even though the initial cost of creating and training an AI system is high, the eventual cost of operation is much lower than hiring a human to perform the same task. A machine only needs electricity and sporadic maintenance to run. Finding and training employees for a position requires resources, in addition to the required yearly pay and benefits. AI machinery is more cost-efficient because it can work 24/7 while it is impossible for human labour to work all day and night continuously without getting bored, hungry, feeling fatigued, or exhausted. (Parvez 3).

Even though there are so many reasons why AI is a significant threat to human jobs, there are some reasons why they are not. For example, there are some tasks which AI cannot nearly perform as well as humans, for example, creative thinking tasks. AI is incredible at tasks which are repetitive, like mass producing a particular object, but it cannot handle creative work well. Machines simply can't reproduce the complexity of the brain's internal mechanisms (at least not right now). Currently, computers are unable to generate truly random and unique data. They require instruction and information feeding. So, artificial intelligence will not be able to replace any occupations that need creativity or creative problem-solving, such as those held by musicians, artists, writers, marketers, or inventors. (Shalamanov 2).

Secondly, AI is currently not able to imitate human connections. In order to relax, open up, and communicate about themselves, many occupations necessitate building trust and a personal connection. While AI is "technically" capable of performing the duties of a teacher, therapist, or nurse, it cannot replace the crucial human connections that are created by those who fill those positions. Despite being able to communicate, computers lack the human touch. (Shalamanov 2). People anticipate you to express your feelings and demonstrate empathy, for instance in customer service. Sure, a robot can identify a problem and offer a fix, but would that interaction be pleasant? Additionally, emotional commitment and a positive working relationship with teammates increase employee engagement. Relationships help us locate clients and business partners since

people want to do business with those they like. This is the emotional component that technology cannot capture. (Ada 1).

Lastly, AI needs to be programmed by someone beforehand. Someone must be in charge of developing the AI algorithms themselves in order to have a completely automated workforce. Additionally, machines will need to be upgraded and replaced as technology advances. Those with an understanding of the inner workings of AI robots will always find work. (Shalamanov 2). Similar events occurred during the industrial revolution in the late 18th and early 19th centuries when new job positions like maintenance and controlling emerged as a result of the introduction of mass production and assembly lines. As AI permeates more aspects of our lives, new careers in AI and machine learning, digital transformation, software development, robotics engineering, and other fields will emerge. (Ada 2).

Another major reason why AI is not a threat to human jobs is that they create more jobs as it advances. Jobs are created to be able to create advanced AI, manage it, and analyze its findings. Jobs such as data sourcing, AI engineers, data analysts, dev/ops, data annotators, data labellers, and much more have increased in demand with the advancement of AI. (Costa 1-2). According to the WEF (World Economic Forum) by 2025, AI is predicted to have created 97 million new human jobs. (Ascott 1). An article by Forbes states that AI has created 58 million new human jobs by 2022. (Chowdhry 1).

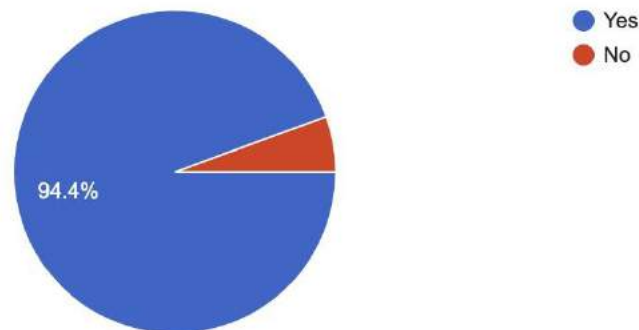
DATA ANALYSIS:

In the section below, the data collected from the survey will be analyzed. Google Forms was used to conduct the survey and was used for the graphical representation. A number of 68 people participated in the survey.

The first and most important question asked on the survey was, if the participants believe the advancement of AI is a threat to human jobs or not. According to the survey, 94.4% of the participants do believe that AI is a threat to human jobs, while 5.6% of the people do not believe AI is a threat to the jobs of humans.

Is the advancement of AI a threat to human jobs?

68 responses

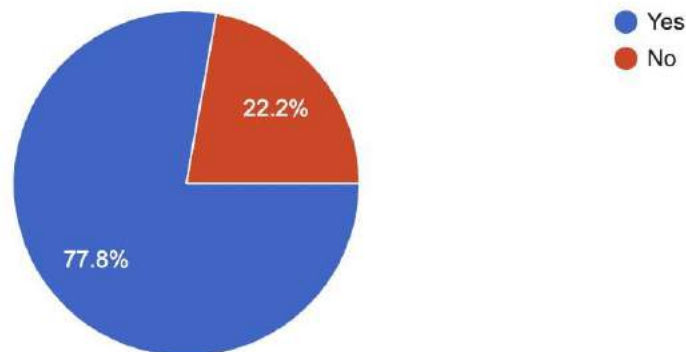


The second question was the last question which is a multiple-choice of survey. This question asked if the threat which AI has to human jobs is a significant one or not. According to the results of the Google Form, 77.8% of the participants believe that the threat is significant while 22.2% believe it is not.

The further 8 questions require written answers from each of the participants, where they further explain their choice for the first two questions, so it will be further discussed in the next portion.

Is the threat very significant?

68 responses



RESULTS AND DISCUSSION:

77.8% of the participants believe that the threat which AI has to human jobs is very significant. According to their further explanations in the survey questions, there was a common correlation between the answers of these participants. The participants who believed that the threat is significant stated how much more efficient AI-powered machines are, in terms of cost and time, compared to humans. The participants mostly talked about how humans get tired, and need breaks, while machines can work all day and all night, without needing to take a break or feeling tired. In terms of being cost-efficient, these participants mainly talked about how they don't require to be paid wages and how there aren't mainly external issues, such as falling ill, going on strike, etc, that will stop them from working. These participants also expanded upon the point that AI-powered machines cannot succumb to human errors, which involve biases and illogical judgements, which are natural to our kind. Another thing these participants commonly talked about the explain their point of view is that robots can perform certain tasks which are too dangerous to perform by human beings or are not possible to perform by humans. Participants talked about tasks such as underwater exploration, deep space exploration, and even cleaning up nuclear sites, which are tasks that are too difficult to complete by humans.

On the other hand, 22.2% of the participants believe that the threat AI has on human jobs is not very significant. According to these participants, the most common reason why AI is not a significant threat to human jobs is that as AI develops, it creates jobs and creates more demand for jobs which is centred around the advancement in AI. The participants stated a few jobs that the advancement of AI creates demand for, robotics engineers, data scientists, and software developers. And also, there are some fields that AI cannot enter, which normally involve

creative thinking or jobs which require the human touch. Some examples which were given were filmmakers, musicians, and therapists. So, this is why 22.2% of participants believe that the development of AI is not a major threat to human jobs.

Surprisingly, 5.6% of the participants believe that the advancement of AI is not a threat to human jobs at all. In the survey, the people who answered this way, mostly said that they think AI creates more jobs than it takes, as they believe that there are a lot more jobs created in the AI sector due to its advancement while it cannot take a lot of jobs because some jobs it cannot do well, such as ones who require creative thinking, out of the box thinking, or emotional intellect

LIMITATIONS:

The survey was not answered by people who are all well educated about AI and its capabilities, so the answers received in the surveys won't be the most reliable and trustworthy. Another limitation is that the survey has only 68 responses, while if there were more responses, it would have been a better sample size to analyse the responses from.

CONCLUSION:

To conclude, the advancement of AI is a threat to human jobs. As AI advances, it keeps on replacing more and more human jobs for several reasons, a few major ones being: less error-prone, capable of doing more dangerous tasks, and more cost-efficient in the long run.

According to WEF, currently, AI machines perform about 30% of all tasks, with humans handling the remaining 70%. But the balance is anticipated to drastically shift to 50-50 by the year 2025. So, it is quite a significant threat to human jobs. But on the other hand, as AI advances, it creates more and more jobs. It is predicted that by 2025, AI will create 97 million jobs. (Ascott 1). Also, there are some jobs which AI cannot replace, such as creative work, out-of-the-box work, and also work which requires emotional intellect.

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