# Artificial intelligence's negative effects and limitations in various applications



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## Abstract

Artificial intelligence (AI), machine learning, and robotics are becoming more prevalent in our day-to-day lives, as is common knowledge. The automation of machines is another consequence of the development of this technology. It is also affecting the ways in which we conduct our businesses and our way of life. In another sense, it has the potential to influence our way of life as well as the standards of our society. In this piece of work, we have offered the research that investigates the detrimental influence that artificial intelligence has on its numerous applications as well as the restrictions that it has. It has been noticed that there are numerous drawbacks and negative impacts of AI on human lives, social life, and many other applications such as the healthcare sector, industrial applications, and so on. The conclusion is that these technologies must influence and overcome the bad effect that they have in order to acquire it. The purpose of this study is to discuss the potentially detrimental effects that artificial intelligence might have on humanity.

**Keywords:** Artificial Intelligence, Machine Learning, Applications of AI, Drawbacks of AI

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## 1. INTRODUCTION

One of the most promising ways to give computers or robots human-like cognitive abilities is via the development of artificial intelligence. It is a path that leads to how the human brain cope with the challenges it faces. Artificial intelligence (AI) is the process of enhancing a computer's capabilities in the areas of thinking, problem solving, and learning. In order to understand how to construct artificial intelligence networks for years, scientists have been studying the human brain. The expectation is that by gaining a better understanding of how the brain works, we will be able to come up with a concept so brilliant that it will pave the way for the creation of intelligent artificial models that can think like a human. In the recent years, researchers have been working tirelessly to develop a remarkable tool known as functional magnetic resonance imaging, or fMRI, which enables them to see the activity of the human brain in real time[1]. The variations in blood flow that occur in the brain while it is actively thinking about something are measured by this apparatus. It is essential that AI has enabled robots to accept vocal commands, identify pictures and text, and do so much better than a human being. Examples include Alexa from Amazon, Siri from Apple, and the Google Assistant. All of these are examples of created insights that are performed in response to a spoken instruction[2]. hanson robotics, a corporation with its headquarters in Hong Kong, is responsible for the creation of a humanoid robot with the name Sophia. which are capable of entering like humans. In the same manner as

the paper these as we, if there are some good aspects to anything, there are also likely to be some bad aspects[2]. For example, if a robot can communicate and reason likes a person, this might be harmful to our species[1]. This is due to the fact that if a robot is capable of independent thought, it could launch an assault against humanity, and robots are more powerful than people. The widespread use of AI is seen in figure 1 and may be found in a variety of settings.

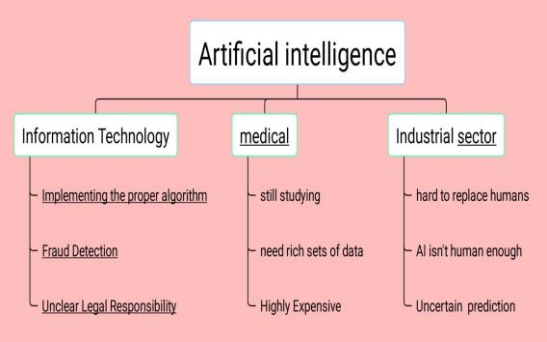


Fig. 1: The application area of the artificial intelligence

## 2. Material & Methods

### 2.1. Artificial intelligence in Healthcare

#### *2.1.1. AI makes healthcare more accessible*

The application of artificial intelligence (AI) may facilitate the creation of a healthcare ecosystem that is more effective[3]. Patients will have a better understanding of their symptoms and will be able to obtain the therapy that is necessary thanks to the help provided by such digital infrastructure. In recent years, a great number of apps have been created in an effort to enhance the cooperation between healthcare facilities located at the national and worldwide levels in order to provide patients with rapid help[4].

#### *2.1.2. Need human surveillance*

In the realm of medicine, artificial intelligence (AI) has made significant progress; yet, human supervision is still necessary, which indicates that it is not entirely machine based. Robots used in surgery, for instance, function rationally rather than empathically in their task[3]. Health practitioners may be able to see significant insights into patients' behaviors that might aid in the identification or avoidance of medical problems. "Artificial intelligence (AI) has been around for a few decades and is continually developing. Yang predicts that as this industry develops, there will be an increase in the amount of collaboration that occurs between professionals in the medical area and those in the technological sector. AI cannot function without the input and evaluation of humans in order to be effective[4].



#### *2.1.3. Possibility of a Defective Diagnosis*

The accurate diagnosis of a disease is derived on data collected from millions of patients who have had symptoms and conditions that are similar to those under investigation. It is necessary for the AI database to include sufficient information about the patients in the relevant group in order to conduct an appropriate comparison[4]. As a consequence of this, artificial intelligence may provide an inaccurate diagnosis if there is insufficient data on a person coming from a certain background. As a consequence of this, in the event that the physicians lack the expertise necessary to see the mistake, there is a higher probability that they would provide the inappropriate therapy[3]. Errors in medical treatment are responsible for the deaths of around 200,000 patients each year, which results in an annual cost of $20 billion for the healthcare system in the United States. AI tools that haven't been given enough training might contribute to the losses. The Artificial intelligence and its specific applications are presented in figure 2.

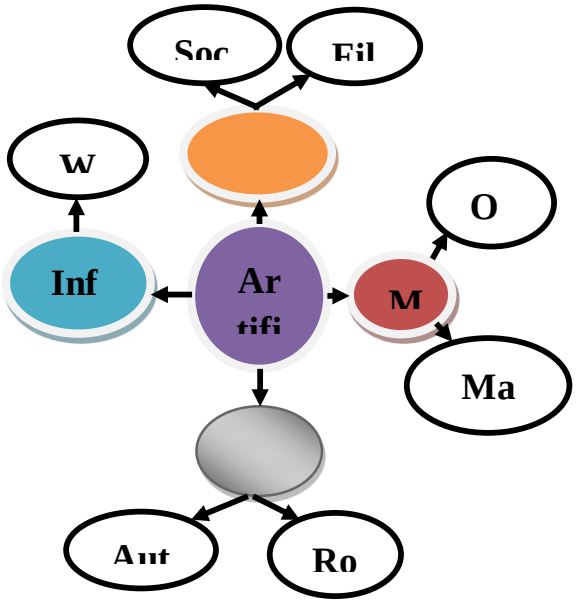


Fig. 2: Artificial intelligence and its specific applications

#### *2.1.4. May leads unemployment in medical sector*

Although the use of AI may help reduce expenses and alleviate the stress experienced by clinicians, it may also result in the loss of certain employment in the surgical field. There is a risk that this may result in the displacement of healthcare professionals who have made significant investments in their education, which raises questions of equity. The primary reason why there would be less opportunities for employment is because as artificial intelligence (AI) grows more pervasive across all sectors, jobs that involve performing repetitive activities will become obsolete. Because AI has been implemented more broadly throughout the whole of the healthcare system, many tasks that were once carried out by people can now be carried out by machines. Chatbots and robots have the potential to provide assistance with mental health difficulties, analyze the current status of a patient's health, and forecast conditions such as seizures, sepsis, and cardiac arrest. Because of this, it's possible that a lot of people may lose their employment. Even if artificial intelligence has the potential to enhance many facets of healthcare and medicine, it is essential that the societal repercussions of its deployment be addressed. Consequently, we should also consider the issue of unemployment[3].

#### *2.1.5. Inaccuracies can be possible*

In order to ensure the precision of a job or activity, which might potentially lead to the unsafe production of medication and diagnosis Even if artificial intelligence has the potential to enhance many facets of healthcare and medicine, it is essential that the societal repercussions of its deployment be addressed. If the machine is improperly programmed, it might result in the loss of material or even the death of a person. Artificial intelligence is always developing and progressing in order to make up for data gaps. It is important to note, however, that those particular demographics may still be overlooked in terms of domain expertise[3].

#### *2.1.6. Susceptible to secure risk*

Because they are dependent on data networks, AI systems leave themselves open to a variety of security threats. For Offensive AI to be successful over the long term, there will need to be significant improvements made to cyber security from the very beginning of the project. According to research conducted by Forrester Consulting, 88 percent of decision-makers in the security industry feel that aggressive AI is becoming more of a problem. Because AI uses data to make systems smarter and more accurate, cyberattacks will utilize AI to get wiser with each success and failure, making them more difficult to foresee and prevent. When harmful threats are able to circumvent security measures, it will be far more difficult to defend against assaults[3].

### 2.2. Artificial intelligence in industrial areas

#### *2.2.1. AI can be expensive*

However, the early implementation of AI may be very pricey, particularly for startups and small businesses. Adopting AI in the industrial sector might lower labor costs, but the initial deployment of AI can be expensive. At first, there will be fees for continuing maintenance, as well as costs to defend systems from cyberattacks, since guaranteeing cybersecurity is also very vital[5]. These expenses will be incurred. Industrial robots have the potential to be very successful and deliver a favorable return on investment; yet, putting them into operation may require a rather hefty initial investment. Before choosing a choice, you should think about both the amount of money that will need to be invested and the return on investment (ROI) that you anticipate getting. Taking out asset financing is often the quickest method to get around this problem, and the return on investment generated by the robot typically more than covers the interest paid on the asset finance[6] .

#### *2.2.2. You need skillful experts*

Because the subject of AI is constantly developing, there are not many AI specialists that possess the necessary abilities. Because this collection of tools requires frequent complex programming, it is vital to take into consideration the availability of experts. In addition to this, the cost of engaging them is also expensive due to the great demand for their services[5].

#### *2.2.3. AI is open to vulnerabilities*

Artificial intelligence is susceptible to cyberattacks, and as AI continues to advance and become more pervasive, hackers will continue to experiment with new ways to get into systems.

Even a little break in the chain of production might have a negative impact on the process. In point of fact, even a very minor security compromise has the ability to render an entire manufacturing company inoperable. Therefore, one should constantly be up to date with security measures and be aware of the potential for a cyberattack, which might result in expensive damage[5].

#### *2.2.4. Expertise*

Industrial robots, like any other kind of technology, need for additional training and knowledge to set up initially. Despite the fact that they are great at doing a wide variety of jobs, industrial robots are expensive. The knowledge and experience of a reliable automation business that also provides assistance will be extremely vital. You may reduce your dependency on automation firms by teaching some of your engineers how to program robots; however, you will still need the support of experienced automation companies in order to successfully integrate the robot into your system for the first time [7].

#### *2.2.5. Limitations*

Both the range of applications that may make use of industrial robots and the quantity of industrial robots themselves have seen considerable increases in recent years. However, there are still certain restrictions in terms of the types of jobs that they can execute. Because of this, we recommend that you have a business that specializes in automation look at your demand in order to evaluate the available choices. There are situations in which a custom-built automated system may provide results that are superior or more expedient than those produced by a robot. Additionally, a robot does not have everything built into it, and the success or failure of an industrial robotic system often relies on how effectively the surrounding systems, such as grippers, vision systems, conveyor systems, and so on, are connected. If you do decide to employ industrial robots, you should only work with reputable robot integrators to ensure that you get the best possible outcomes [8], [9].

#### *2.2.6. Working safely*

Both the range of applications that may make use of industrial robots and the quantity of industrial robots themselves have seen considerable increases in recent years. However, there are still certain restrictions in terms of the types of jobs that they can execute. Because of this, we recommend that you have a business that specializes in automation look at your demand in order to evaluate the available choices. There are situations in which a custom-built automated system may provide results that are superior or more expedient than those produced by a robot. Additionally, a robot does not have everything built into it, and the success or failure of an industrial robotic system often relies on how effectively the surrounding systems, such as grippers, vision systems, conveyor systems, and so on, are connected. If you do decide to employ industrial robots, you should only work with reputable robot integrators to ensure that you get the best possible outcomes [10], [11].

### 2.3. Artificial intelligence in IT sector

#### *2.3.1. High production cost*

We are now living in a technological environment in which we are expected to modify ourselves in accordance with societal norms. In a similar manner, a computer system has to have its software and hardware updated on a regular basis in order to conform to the most recent standards. As a result, AI also has to be repaired and maintained, both of which require a significant financial investment[12].

#### *2.3.2. Risk of Unemployment*

One example of how artificial intelligence may be implemented is in the form of a robot, which is responsible for the loss of jobs and the subsequent rise in unemployment (In some cases). Therefore, according to the beliefs of certain individuals, there is always a possibility of unemployment as a result of robots and chatbots[6] being used instead of humans. For instance, to reduce the need for human labor in industrial areas, robots are becoming more prevalent in nations that put a greater emphasis on technology, such as Japan. This is not always the case, however, due to the fact that although technology does replace people in order to improve efficiency, it also creates additional employment prospects for humans [13].

#### *2.3.3. Increasing human's laziness*

The most recent developments in artificial intelligence are making people more apathetic about their employment, which ultimately leads

to humans being wholly reliant on computers and robots. If this trend continues for many more years to come, then the subsequent generations of our population will become totally reliant on machines, which will lead to increased rates of unemployment as well as further health problems [14].

### *2.3.4. Emotionless*

Since we were children, we have been taught that computers and other devices do not have feelings or emotions. Management of a group is one of the most important aspects of reaching a goal, which is similar to how humans operate. However, there is no question that robots are far more effective when functioning effectively. Nevertheless, it is also a fact that computers can never replace the connection that humans have with one another, which is what forms a team [15].

### *2.3.5. Lack of creativity*

One of the most significant limitations of artificial intelligence is that it does not exhibit creativity. The field of artificial intelligence refers to a set of technologies that are entirely dependent on data that has been pre-loaded. But, artificial intelligence can learn over time by using the data it has been given and the experiences it has had in the past; however, it cannot be creative in the same way that humans can[12].

### *2.3.6. No Ethics*

It is not simple to program ethics and morality into artificial intelligence, despite the fact that these are two of the most essential characteristics that distinguish humans from other animals. Since AI is swiftly and uncontrolled expanding throughout all industries, it is possible that it may one day eradicate mankind if this trend continues over the next few decades[12].

### *2.3.7. No improvement*

Because Artificial Intelligence is a system that relies entirely on the data and experience that has been pre-loaded, it cannot be enhanced in the same way that humans can. It is able to conduct the same action again; but, if you want it to improve or alter in any way, you will need to modify the command for the task. On the other hand, it is unable to be accessed and used in the same way that human intellect can, despite the fact that it can store a limitless amount of data[16].

## 3. Conclusion

AI has unquestionably the ability to enhance healthcare systems. The automation of time-consuming procedures may free up clinician schedules to allow for greater patient interaction. Improving data accessibility aids healthcare providers in taking the necessary precautions to avoid sickness. Real-time data may help diagnosis to be made more accurately and quickly. Artificial intelligence is being used to decrease administrative mistakes and save valuable resources. As SMEs get more engaged in AI development, the technology becomes more relevant and well-informed. AI is rapidly being used in healthcare, and limitations and obstacles are being tackled and solved. AI still needs some human supervision, may ignore social aspects, has knowledge gaps, and is vulnerable to more planned cyberattacks. Despite some of the obstacles and limitations that AI confronts, this new technology has the potential to provide enormous advantages to the medical industry. AI is enhancing people's lives worldwide, whether they are patients or physicians.



This might be a really helpful business advice that can assist company owners in increasing their production rate. On the other side, it increases the likelihood of accidents, decreases inventiveness, and so on. AI is beneficial to our future, but we must consider these concerns as well, since we are utilizing this technology to solve problems rather than create new ones.

It may result in data loss by machines, which cannot be avoided. AI, on the other hand, is incapable of creating, conceptualizing, or strategizing. AI is amazing at optimizing for a certain purpose, but it cannot determine its own aim or think creatively. AI cannot reason across domains or use common sense. If they are conceivable, it may be immoral for us to rely on a computer blindly since we have established certain limitations. As a result, if we construct a human interactive robot that can engage with people, it may result in an assault on humans. To avoid such mishaps, we may include emergency software that destroys the machine instantly.

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