

The Unresolved Future of Artificial Intelligence

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Abstract—Artificial Intelligence is recognized as one of the most innovative and polishing fields of study in today's world as it depicts the user as a magic happening. For the end users, it is a fascinating technology. Some of the tech giants, like Google and Amazon, quoted Artificial Intelligence as the future of the technology. But the question remains there. Are we moving in the right direction? Just like a coin possesses two faces, even the previous fact has two sides. Its pros and cons, which are recently identified and can prove to be a disaster in the coming future. Artificial Intelligence is, no doubt, a boon to the society. Although it has its advantages, the disadvantages followed by the same cannot be neglected. If we look at this from a different perspective, we can also see that due to the advancements in robotic technology, unemployment will be created which is challenging to cope up with in this inflating economy. Even, we should consider the reliability of Artificial Intelligence. Some of the tech giants have warned us against the growing popularity of Artificial Intelligence as well claiming that it will lead to the destruction of mankind. Right now, everyone thinks AI is a handy thing, but along with that, people are ignoring the dangerous effects that should be considered. This paper explains different advancements, benefits and injury caused or can be created to the society which is also our principal contribution towards the subject. It also tells why the future of Artificial Intelligence, despite having advantages, remains uncertain.

Keywords—Artificial Intelligence; Robotic Technology; Facebook bots; Uncertain Future; Machine Learning

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I. INTRODUCTION

Artificial Intelligence is a machine-exhibited intelligence rather than the humans and animals based. It is like a machine which mimics the activities that are usually done by the people which include problem-solving and learning. Every company wants to progress in this field, and every business has its product which is an assistant and provides help to humans. It makes efficient use of technology and is integrated with the internet and give the users the useful information. These products include Siri by Apple Inc., Google Allo by Google, and Bixby by Samsung, etc. Many more products by other companies are also available in the market. These assistants make use of the artificial intelligence techniques and help the users by either fetching them the required information or doing the required task.

It is not limited to the use of assistants and has a different scope. It is employed in machines or robots which can understand the requirements and take the required action. It is with the help of Artificial Intelligence only that we can get the estimated ride cost in Uber, Ola, Lyft and other car transportation companies. Now, we have home assistants like Alexa by Amazon, Homepod by Apple and Google Home by Google which when integrated with IoT (Internet of Things) makes us possible to control various functions when connected to pre-installed devices like home theatre, speakers, lights, intercom devices, mobile phones and many other devices.

In order to achieve such task, many companies are tying up with third parties like Philips, Samsung which can help them integrate the tube light connections with their home assistant system. This system can be used anywhere. They can ensure security and help us quickly access the devices installed at our home in a way that we could have never imagined in the past few years.

Technology has started growing exponentially in the past few years. It has increased to a level which is beyond everyone's imagination and Artificial Intelligence has played a significant role in this. Math, Philosophy, Psychology, Machine Learning and Natural Language Processing (NLP), when integrated with Artificial Intelligence, have yielded significant results. Uber and Tesla are now testing Self-

driving cars. Walmart is coming up with a technology where they would fly the stores using drones, and people can shop their things staying at their home. From this facts, it is clear that Artificial Intelligence is trying to create the world where things can be programmed to model intelligent behavior involving minimal human intervention.

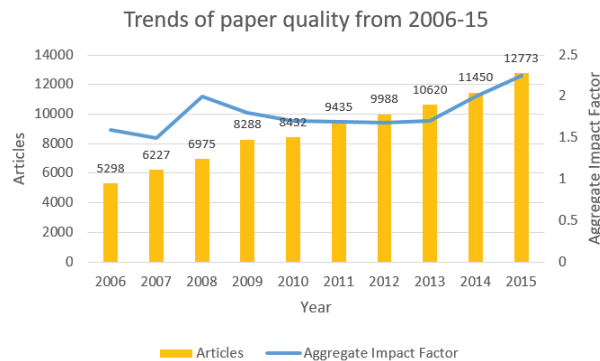


Fig 1. Trends in paper quantity from 2006-2015[1]

The above Figure depicts our statement. It shows the impact of AI on the industry from 2006-2015. It has doubled over the past few years. The influence of AI over the market has eventually enhanced. Trends and analysis over all these years give us a bright idea of how artificial intelligence is gaining its popularity. The pattern is going to be increasing in the next few years.

II. LITERATURE REVIEW

A. Advantages

Artificial intelligence has a varied scope. It can be used in different fields to achieve excellent results. Some of the benefits of Artificial Intelligence systems are listed below:

- The laborious and monotonous task is getting replaced by job replication using automated robots and machines. [2]
- It has made the doctors work more comfortable and faster as the electronic health reports will be utilized. It helps in providing earlier diagnosis. It reduces the cost. Even, the surgery can be done with the aid of robots. If it is done with robots, then more precision and shorter hospital stays can be achieved. Radio Surgery can be used to operate the tumors. [3]
- Fraud Detection can be done in banks which can ensure security. Face detection can be used in cameras when the banks are closed, and whenever it detects any person, it will send a notification to the manager, ring the alarm or call the police.
- Space exploration can be done using intelligent robots. They are capable of existing in the hostile environment of the space. So it will not be a problem for bots to survive in the area for years which is not same in the case of humans.
- While playing a computer game, we are dealing with smart bots which are pre-programmed for all the moves. Many such sets are available in the market where the sequences are predefined according to the circumstances.
- Emotional sentiments are absent in the bots which give them an edge over humans. This helps them to think logically and make decisions rationally.
- They can be employed for doing dangerous tasks by adjusting various parameters including time and speed. It can assist them to act quickly which is not in the case of humans.
- With the help of AI, it is possible for a student who is ill to attend the class virtually.

B. Disadvantages

The development of AI over the years have proliferated in many domains like medicine, defense, etc. And thus a better understanding of the technology is required. We need more than an impression of AI's internal computation. But the uncontrollable and unpredictable self-development nature of AI makes it very difficult to decode the algorithmic mystery.

With the advancement of technology, we might soon cross some threshold beyond which using AI requires a leap of faith. Organizations have already started to question the source and authenticity of material produced by AI. For example, European Union may ask companies, for an explanation for decisions that automated systems reach, starting in summer 2018.

Programmers are already facing a conundrum, decoding answers to such requests. The human

race has never built machines that tend to develop and function in ways their creators don't understand. How well can we expect to communicate with AI that could be unpredictable and inscrutable? The human race has never built machines that tend to develop and function in ways their creators don't understand. Tom Gruber, the Siri team leader at Apple, explained the importance of knowing and understanding the thinking pattern of an AI before trusting it. He told, that if a user receives a recommendation of a restaurant from Siri, he'll want to know about the reasoning was. The Research Director of Artificial Intelligence Department at Apple, Ruslan Salakhutdinov, sees explain ability as the basis of developing a relationship between the intelligent machines and humans. He added that it is going to introduce trust.

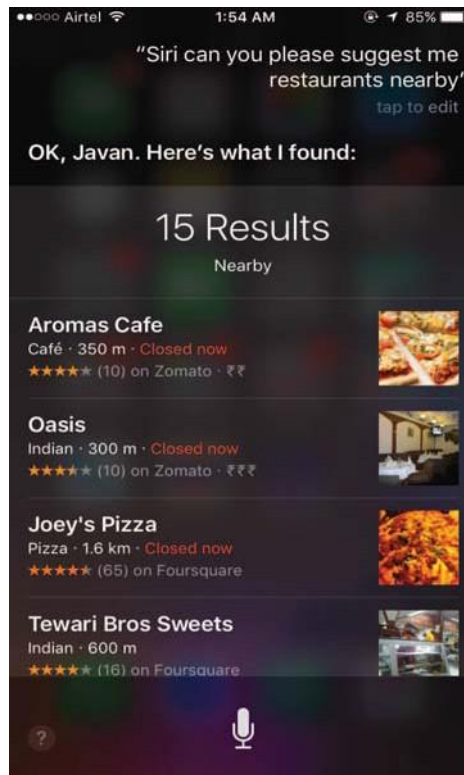


Fig 2. Incapability of Siri showing why a result is shown

The above figure delineates the problem mentioned above. The incompetence of Siri's reasoning capacity may raise doubts in user's mind. It is giving us the desired results, but Siri itself is unable to figure out about how it is done and how are the results shown. The filtering of the results are by the location admittedly, but the ordering or the sorting of the results in such a manner is quite irregular. Thus the final results cannot be trusted.

It is fair to argue, that just as many aspects of human behavior are impossible to explain in detail, similarly it won't be possible for Artificial Intelligence to justify everything it does. But if that's so, then at some stage we may have to merely trust AI's judgment and thus design AI systems to respect and fit with our social norms, which in-turn brings back the old problem and questions the authenticity of AI's ethical judgments.

To further demonstrate the existing situation appropriately, a scientist, Daniel Dennett said that he thinks that if someday we are going to rely on these things and use them, then we should get a firm grasp on why we are getting all the possible results. If it fails to do better than all of us in describing what is going on, then we shouldn't trust it.

In the recent times, Artificial Intelligence has increased gradually. Facebook [4], while working on one of its projects of AI, noticed that two machines have started to communicate to each other in a strange language which was understood by the bots only. The two chat bots were able to make changes to the English language and were able to learn each other and communicated efficiently.

The experiment involved in the two bots to negotiate among themselves. But they were not programmed to use the comprehension English. Instead, they started creating their shorthand. This experiment was thought of as a danger and led to the closing of the experiment. This research is not the only case. Earlier, Google also claimed that while designing Google Translate, the bots started creating their private

languages.

The below figure shows the chat between the two bots that were used by Facebook.

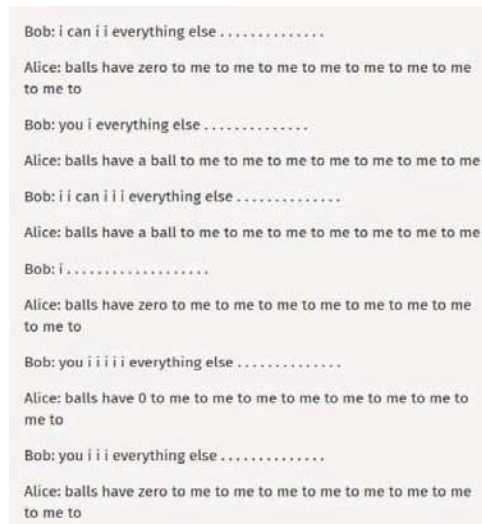


Fig 3. Conversation between the two bots at Facebook [4]

Further disadvantages of the Artificial Intelligence systems are listed below:

- Artificial Intelligence is minimizing the human efforts and is trying to reduce the human intervention to negligible. This would cut off the jobs and would lead to unemployment which is not a good thing.
- Most of the things are automated. Like the one in the computer game. By playing it for a long time, we can figure out the faults in the game and play the game accordingly. This automated system, for the time being, is limited to the gaming system.
- Samsung in the coming smartphone series came up with an iris scanner feature. It detects the iris of the user and then unlocks the phone. Many hackers used a hack for it too. They took a picture of the person from a distance of 5 meters and then made a print of it on a plastic coated sheet and voila, the phone got unlocked. So, this is how finding a hack programmatically can damage the security concern. This hacking can be a security issue, but the smartphone was not smart enough to distinguish between a person and a plastic-coated sheet. This leads to a drawback in the field of AI.
- In this world, the requirements are changing continuously and to cope up with this changes; the programmers need to be updated with the technology. This upgrade would involve high maintenance and repair cost.
- Many people consider intelligence as nature's gift. They think that it is not right and should not be used or installed in a machine to make it work as we want for our benefit.
- When humans tend to do work, they figure out the small tricks and gain some experience while working which is not in the case of bots or automated machines. They are just made to work on their own without learning any new skills.
- While performing surgery, human's emotions are involved up to a little extent. But when machines carry out their functions, no sentiments are attached. They do not know the ethics and other virtues of the real world which might prove to be a disadvantage.
- Elon Musk [5], co-founder and CEO of Tesla Inc., is known for his futuristic vision. He thinks that Artificial Intelligence should frighten us because it may lead to the destruction of mankind and can be harmful to the humans in the coming time. He even compares the Artificial Intelligence to Apocalypse.
- Many facts that are provided by the Artificial intelligence systems might not be right [6]. So, it is not possible to be reliable on all the points that are mentioned by the System.

C. Neutral Perspective

Technology can turn either way. Everything depends on the perspective. Either it can be beneficial to the society, or it can harm the community in a manner that no one could ever have thought. Artificial Intelligence, having a different scope, can be used in the same way. Many high technology giants have quoted related to the growing trend of Artificial intelligence. The below figure shows the tech giants along with their say on AI.



Fig 4. Tech Giants and Artificial Intelligence [7]

All of them have different thoughts regarding the AI technology. Some of them think that it is a boon for the society and some of them believe that it is a bane. Each of them might have kept different thoughts in their minds regarding the future of AI.

A research group at New York's Mount Sinai Hospital in 2015 tried to apply deep learning using hospital's vast database of patient records. This dataset includes many variables on patients, derived from various tests, doctor visits, surgeries, and many more things. Deep Patient, the resulting program, was trained with the use of data from about seven hundred thousand patients. Now, during the test on new records were done, the results were amazingly right, and they were able to predict the disease. Without any expert's intervention, Deep Patient had discovered pattern covered in the hospital data that seemed to symbolize, when people were on the way to a wide range of ailments, including cancer of the liver. Many breakthrough methods were discovered that are "pretty good" at predicting disease from a patient's records, says the leader of Mount Sinai team [8].

At the same point, Deep Patient is a bit perplexing. It appears to predict the onset of psychiatric disorders like schizophrenia surprisingly well. But since schizophrenia is notoriously challenging for physicians to foretell, scientists wondered how this was possible. The new tool offers no evidence as to how it does this. If something like Deep Patient is going to help doctors, it will ideally give them the reason for its prediction, to reassure them that it is accurate and to support, say, a change in the drugs someone is being designated. "We can build these models," Dudley says, "but we don't know how they work." [8]

III. FUTURE SCOPE

With the advancements in technology, and the problems mentioned above it is not easier to predict the flow of future of Artificial Intelligence. The systems are robust.

Artificial Intelligence has enormous scope in finance, medicine, and defense. Artificial Intelligence can also be used to find answers which humankind couldn't see. But the varied range of the same might create a problem for the coming generation. The upcoming technologies can be used to destroy the mankind. It depends on the usage of the technology. If the technology goes into the wrong hands, like the terrorists, then they might use it as a weapon of mass destruction. They may design robots in such a way whose only target is to kill humans. The unpredicted nature, as mentioned, if control can be a massive breakthrough in the technology sector.

IV. CONCLUSION

Artificial intelligence is considered very vital part of our life. Knowingly or unknowingly, we are using the features of it in our everyday lives. We are using Maps, booking cabs, surfing Social Media, using text editors, assistants to set reminders and doing many more things. Many times, we don't even realize the extent to which it has been used. It's beyond our imagination. Further advancements in this field can lead to significant achievements. But it can lead to destruction too. Using it efficiently and timely is the key to harmony. A detailed study needs to be done to understand the future consequences of every technology implemented on artificial intelligence. However keeping all the things in mind, one cannot predict the exact future of Artificial Intelligence. No one knows which route it will go and hence the future of Artificial Intelligence, unfortunately, remains uncertain.

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