

The Optimistic Propagation of Artificial Intelligence

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Abstract

In the present paper, we have discussed the methods of modification and optimisation of artificial intelligence (AI) in such a way that it is not only more practical for humankind but also opens a vast variety of possibilities in different technological fields without causing any disorder. AI is a branch of computer science in which machines develop the ability to think, understand and make decisions. If we describe it in simple language, artificial intelligence is the 'brain' of the machines. We have discussed many theories in the research like why AI should not be self-developing and why AI can never replace human intelligence. Due to its ability and flexibility to deal with complex problems, human intelligence can modify its solutions where AI lags. AI is significantly affecting the job market. Although AI is highly advanced, now that machines can learn from experience and make smart decisions, AI cannot function optimally without relying on innate human attributes like human intuition. This research throws light on significant issues that can easily be solved with the help of AI if it is developed efficiently. "I fear that AI may replace humans altogether. If people design computer viruses, someone will design AI that improves and replicates itself" – Stephen Hawking.

Keywords: Artificial intelligence, human intelligence, optimization, innovations, performance

INTRODUCTION

Artificial intelligence (AI) is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable. AI is everywhere, it is also on our minds. Machines make our work simple and easy, but if machines have the ability to solve human-like problems and give results, then it is called artificial intelligence [1]

DISCOVERY OF AI

John McCarthy' was the first to inform the world about AI and is known as father of AI. According to John McCarthy, AI is high-level computer science with the help of which machines can make informed decisions, and they can work independently without any help. That is, the way humans find a solution to any problem with the help of their mind. Machines can also solve their own problems with

the help of AI. The term AI is often used for the project of developing systems enriched with the intellectual processes and characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from experience.

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Latest AI Technologies

- Speed recognition
- Virtual agents
- Decision management
- Biometrics
- Machine learning
- Robotics process automation
- Peer-to-peer network
- Deep learning platforms

- AI-optimized hardware
- Natural language generation
- Self-supervised learning (SSL) for image modelling
- AI-based cybersecurity

The most famous examples of AI are virtual assistants like Alexa, Siri, and Google Assistant, self-driving cars like Nissan ProPilot, Assist, and Tesla Autopilot, and robotic vacuum cleaning robots like Roomba 980. “AI is technology’s most important priority, and healthcare is its most urgent application” ~Satya Nadella, CEO, Microsoft [2].

The role of humans in the medical field has also been affected by robots. The role of doctors and anaesthesiologists is also overtaken by them. Now they have the ability to perform single surgery without our assistance (Figure 1).

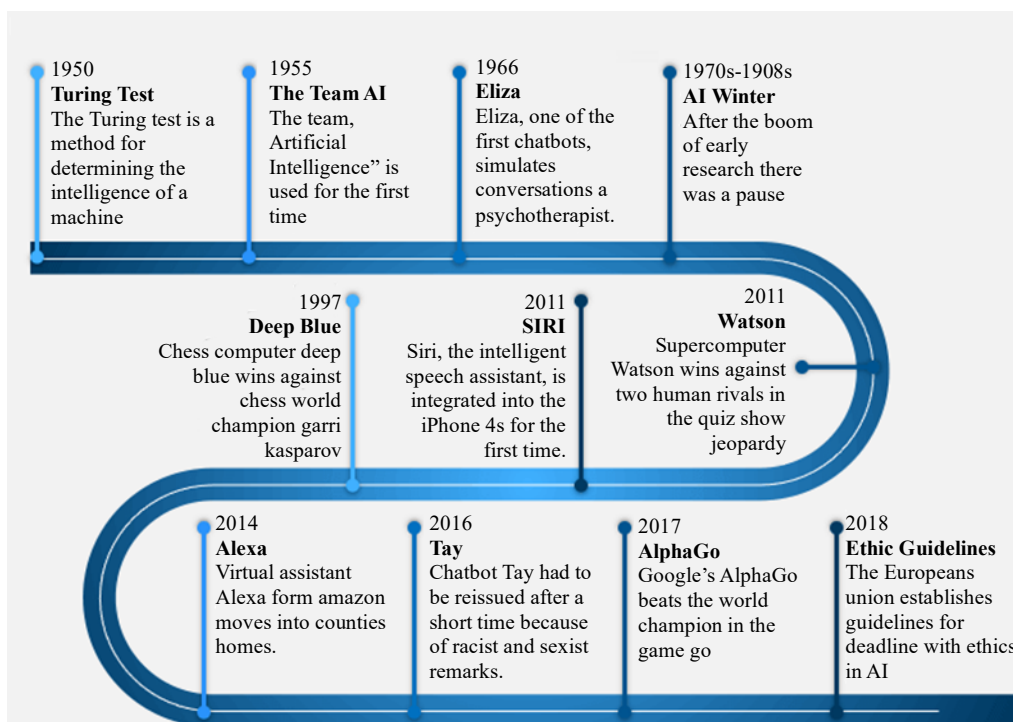


Figure 1. History of artificial intelligence (AI).

Is AI time-saving or memory-reducing?

As science and technology are progressing, the dependence of human beings on them is also increasing. At the same time, this reliance is also becoming the enemy of humans. The technology that makes our work easy will become the enemy of our minds in the long run. A survey was conducted by the American think tank Pew Research, in which it has been revealed that in the next 12 years, AI will destroy the way humans think and understand. This technology will affect humans to such an extent that they will feel incapable of taking any decision.

IS AI DANGEROUS?

“The potential benefits of AI are huge. So are the dangers”. Dave Waters [3].

Experts compare the current AI to a child who is still learning from humans. They argue that just as most children grow up to be more intelligent and knowledgeable than their parents and teachers, the same will happen with AI. The relationship between humans and machines is hundreds of years old. Humans make machines and machines work for humans. The structure of human society is such that we have to depend on each other for various tasks and needs. The machines manufactured by us are

slowly ending this interdependence of ours. But, at the same time, it is also making us addicted to it. There are many AI programs, big or small, that are saving us the trouble of thinking or straining our brains to solve our problems or accomplish tasks. Today, such AI-enabled robots have come on the market, which can handle files in the office and can also direct you as a boss. Like a lawyer, you can also fight cases in the courts, you can also become a judge and give verdicts. By becoming an architect, you can design a building, and also by becoming a labourer. Can play the match like a player and also supervise like an umpire. This list keeps getting longer so far. We have used this technology to improve our future.

Below are some proposed threats of AI:

- *Legal, political, and social ramifications:* According to Nick Bostrom, rather than avoiding AI innovation should be pursued, “Our focus should be on putting ourselves in the best possible position so that when all the pieces fall into a place, we’ve done our homework. We’ve developed scalable AI control methods, we’ve thought hard about the ethics and the government, etc. And then proceed further and then hopefully have an extremely good outcome from that” [4]. If government and business institutions do not spend time now preparing rules, regulations, and responsibilities, there could be significant negative consequences as AI develops further.
- *AI-enabled terrorism:* AI will change the way conflicts and wars are fought from autonomous drones, robotic masses, and remote and nanorobot attacks. We will need to track global autonomous ammunition utilization.
- *Social manipulation and AI bias:* If there is bias in the data sets the AI is trained from or if it falls into the wrong hands, AI can be used, as it was used in the 2016 U.S. Presidential election, for social manipulation and to raise deception.
- *AI surveillance:* The identification capabilities of AI give us flexibility similar to being suitable to unleash phones and gain access to a structure without keys, but it also launched intimidating surveillance of the public. In numerous countries, the police and government are overrunning public sequestration by using face recognition technology. Bostrom explains that the ability of AI to cover the specific information of systems from surveillance data, cameras, and mining social network communication has excellent eventuality for good and for bad.
- *Deepfakes:* “Fake” videos of real people can easily be modified using the latest AI tools. These can be used without an individual’s permission to spread and imitate false news, create porn in a person’s likeness without any concern, and is capable of damaging not only damage an individual’s reputation but livelihood too. This proficient technology is getting advanced day by day as AI gets into the boom.

What will be the result of this, is beyond imagination. “I wouldn't want to devalue climate change. I wouldn't want to say you shouldn't worry about climate change. It's a huge risk. But I think the threat of AI may be more urgent.” Geoffrey Hinton, godfather of artificial intelligence (Geoffrey Hinton created AI that is ChatGPT).

Does AI replace jobs? Is it really a threat to programmers?

In the 21st century, we are entering the fourth industrial revolution, so an important question has arisen. Can AI overtake human intelligence? Crores of jobs are at risk. Global management consultancy firm McKinsey & Company estimates that by 2030, AI and automation will eat up around 400 to 800 million jobs. And about 37.5 crore people will have to find other work for themselves. David Wood, the senior official of the UK's TransHuman Party and president of London Futurists, claims that by the year 2050, with the help of AI, robots will be able to do everything that only humans are able to do now. The question is, if AI will do all the work, then what will humans do? Those who think that only humans will operate these machines are ignorant of reality. They do not understand why the AI that can make decisions for you cannot make decisions for itself. You may need AI as your substitute, but AI does not need humans as a substitute. The use of AI is expanding in nearly every field at present and it is an endless content to talk about. While it has made our lives easier and more advanced, it has also

threatened the jobs of many people. In a 2018 report by WEF, the Swiss think tank prognosticated that by 2022, AI will displace 75 million jobs extensively while also creating 133 million new jobs. Since scientists and researchers still do not know the secret behind the human thought process, there is little chance that we will soon be able to create machines that can "think" like humans.

THE PROS AND CONS

Pros

- AI defines a more powerful and more useful computer.
- AI presents a new and improved interface for human interaction.
- AI establishes a new technique to solve new problems.
- AI handles information better than humans.
- AI is very beneficial in converting information into knowledge.
- AI improves work efficiency and hence reduces the duration of time to complete a task as compared to humans.

Cons

- The application cost of AI is very high.
- The difficulties with software development for AI work are that software development could be faster and cheaper. Programmers available to develop software to implement and modify AI are a few in number.
- A robot is one of the implementations of AI with which they replace jobs and serve unemployment.
- Machines can easily cause destruction if it is put into the wrong hands with dangerous consequences to human beings.

With the above information regarding AI, we can conclude that along with the benefits of any technology, it is natural and common to have some limitations and shortcomings. "AI is neither good nor evil. It's a technology for us to use." Oren Etzioni [5].

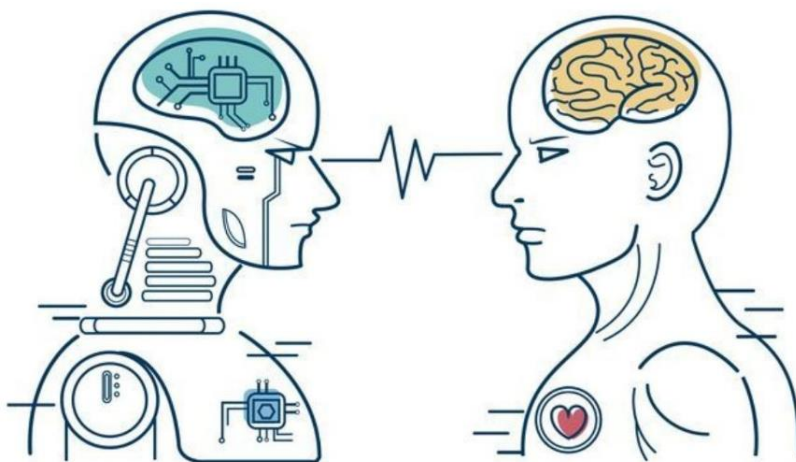


Figure 2. Artificial intelligence versus human intelligence.

The ambition of human intelligence is to combine a range of logical activities to adapt to new situations whereas the aim of AI is to originate computers that are able to behave like humans and to complete jobs in such a way that is executed by humans (Figure 2). In this case, the difference between AI and human brain is that human intelligence has a much more powerful thinking potential than AI and it deals with great problem-solving skills depending on the crux of the situation. It still has a very long way to match the potential of the human brain. Despite the fact that AI systems are designed and trained to imitate and accumulate human attributes, they are not able to make rational decisions like

humans. AI is still in the developing phase. It is advancing at a great pace in every possible domain. The time required to train an AI system is enormous, which is not possible without human intention. All autonomous robot cars, and futuristic technologies like image processing and natural language processing, rely on human intelligence. “Computers may be clever, but human beings are much smarter. We invented the computer. I’ve never seen a computer invent a human being.” Jack Ma [6].

Ethical Development of AI

AI is a digital technology that has a major impact on the development of humanity (Figure 3). All the tech giants are trying to develop cutting-edge AI technology. Those working on AI have to understand that this is also one such technology, which has to be worked on with full responsibility [7]. If AI can design more machines with the same intellectual capacity as herself, then there will undoubtedly be an ‘intellectual explosion’ and human intelligence will be left far behind. This means that ethical problems in AI also need to be discussed. The following points showcase how AI can be developed and deployed ethically [8].

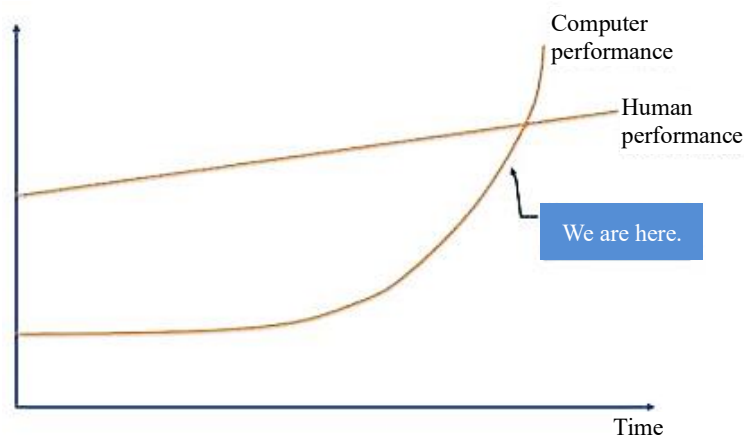


Figure 3. Performance over time graph.

Ethics Council

There should be a committee, such as a governance board, that can take care of fairness, privacy, cyber and other data-related risks and issues. This should be accompanied by ethics related to cyber, risk and compliance, privacy and analytics [9]. The committee should also include outside subject matter experts including ethicists. They can

- Monitor the work of the employees and how they take care of these issues.
- Be mindful of legal and regulatory risks.
- Fit the AI ethics strategy into the system.

Ethical AI Framework

Creating a data and AI ethical risk framework is an excellent approach to mitigating ethical issues. This includes a governance structure that needs to be maintained. It identifies the ethical standards that need to be observed or followed [10]. Frameworks should suggest how their systems express and incorporate these core ethical AI principles. It is a quality assurance program to measure its effectiveness in designing and developing ethical AI systems.

Customize Guidance and Tools

Undoubtedly, the ethical AI framework provides high-level guidance, but it is still necessary that the guidance be granular at the product level. Some AI systems require an explanation of how it reaches a decision, especially when the AI system's decision has enough impact to change someone's life. But as the accuracy of their predictions increases, the transparency of the models decreases. So, in such a situation, product managers need to know how to make that compromise. The tools can evaluate the

importance of interpretability or accuracy for a particular system and suggest to the product manager what to implement in that specific system.

CONCLUSION

The culture of the organization will help to successfully implement ethics in AI. A culture can be created so that everyone in the organization is aware of the ethical framework and therefore allow them to raise questions for ethics in the system at every level or level of the AI system.

Outcomes

Through this paper we have highlighted the major possibilities that are related to AI in the near future. The major concern of this research is to discover the optimistic methods to develop and modify AI. It is a technology that has a lot of potential but is also bounded with great dangers. Development of AI in a healthy and ethical manner will certainly bring about a great and safe revolution of technologies.

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