

EDITORIAL

Artificial intelligence – Boon or bane for mankind?



Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem solving. The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal. John McCarthy first proposed AI in 1956 during his first academic conference on the subject (1). The idea of machines operating like human beings began to turn out that it is possible to enable machines to think and learn just like humans. Alan Turing was able to put his hypotheses and questions into actions by testing whether “machines can think”? After a series of testing (later was called as Turing Test) it turns out that it is possible to enable machines to think and learn just like humans. Turing Test uses the pragmatic approach to be able to identify if machines can respond as humans (2).

AI considers the science, engineering, and deployment of AI-enabled computing systems. AI envisions the potential advances that lie ahead, which describes the technical and societal challenges and opportunities including in such arenas as ethics, economics, as well as the design of systems compatible with human cognition. The AI studies are expected to develop syntheses and assessments that provide expert-informed guidance for directions in AI research, development, and systems design, as well as programs and policies to help ensure that these systems broadly benefit individuals and society (3). AI is based on the principle that human intelligence can be defined in a way that a machine can easily mimic it and execute tasks, from the simplest to those that are even more complex. The goals of artificial intelligence include learning, reasoning, and perception. As technology advances, previous benchmarks that defined artificial intelligence become outdated. For example, machines that calculate basic functions or recognize text through optimal character recognition are no longer considered to embody artificial intelligence, since this function is now taken for granted as an inherent computer function.

AI is continuously evolving to benefit many different industries. Machines are wired using a cross-disciplinary approach based in mathematics, computer science, linguistics, psychology, and more (4). AI can be divided into two types based on capabilities and functionalities and each type is further subdivided as: Type 1- Weak AI or Narrow AI, General AI and Super AI. Type 2 - Reactive machines, limited memory, theory of mind and self-awareness. These AI's understand verbal commands, distinguish pictures, drive cars and play games better than we do. The advantages of AI are; error reduction, difficult exploration, daily application, digital assistants, repetitive jobs and medical applications. There are disadvantages too such as high cost, no replicating humans, no improvement with experience, no original creativity and unemployment (5).

The applications for artificial intelligence are endless. The technology can be applied to many different sectors and industries. AI is being tested and used in the healthcare industry for dosing drugs and different treatment in patients, for surgical procedures in the operating rooms, in classifying whether to automate initial evaluation of a CT scan or ECG or to identify high-risk patients for population health, thus assisting doctors in a huge way. AI is also used for natural language processing, intelligent retrieval from databases, expert consulting system, theorem proving, robotics, automatic programming, combinatorial and scheduling problems and perception problems (6). Its applications in finance and economics, cybersecurity, government, law-related professions, military, advertising, art, etc. are commendable. AI is a technology that is already influencing how users interact with and are affected by the internet. In the near future, its impact is likely to grow.

AI has the potential to vastly change the way that humans interact, not only with the digital world, but also with each other, through their work and through other socioeconomic institutions – for better or for worse. As many people expect that advances in AI and machine learning will fundamentally reshape the future of the internet and society around it. AI in our daily life will be virtual personal assistants such as Siri, Google Now, Cortana and others which are intelligent digital personal assistants on various platforms (iOS, Android, Windows) and are based on AI. NETFLIX, google scholar and other search engines help run experiments to improve the quality of work and to aid content discovery and support searches for unavailable (out-of-catalog) entities. SUPER computers are being used by NASA and ISRO. Recently researchers used SUPER computers to check the method to combat COVID19 corona virus and it gave results like 60+ drugs can be used to fight against coronavirus based on its structure. Within a fraction of seconds, it analysed and reported a possible way to kill the virus, which could take humans more than a week to search. One of the instances of AI that most people are probably familiar with is introduction of video games. Smart cars are not in streets yet, but many industries are using robots as vehicles. However, as the artificial intelligence is developing, that day is not so far when we will not need a driver (7).

Flying drones are already shipping products to customers' home. Drones have helped in aerial video shooting which reduced the usage of helicopters and its pilots. We can imagine two different kinds of AI in future. Firstly, positive imagination of future- when we will just sit back in cozy little beds and just command our personal robots to do our ruts. Those will be the perfect companions for us. Secondly, negative imagination of future- It may end in other ways too. Someday there will be a knock at our door. As we open it, we will see a large number of robots marching into our house destroying everything we own and looting you. Because by now they will have full power to think as human, even as of anti-social elements. Hence, we should think twice before developing the robots to a highly advanced level, which could be devastating (8). In its short existence, AI has increased understanding of the nature of intelligence and provided an impressive array of applications in a wide range of areas. It has sharpened the understanding of human reasoning and of the nature of intelligence in general.

References

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