

ARTIFICIAL INTELLIGENCE, A REVOLUTIONARY STEP TOWARDS LIFE

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What is Artificial Intelligence?

[1] The Process of making intelligent machines using science and technology especially computer related programs is called Artificial Intelligence. Its equivalent to similar task in which Artificial Intelligence is able to understand and do the work as and according to human intelligence. [2] Artificial Intelligence is the field of engineering in computer science that attempts to build intelligence according to a human mind in computers and machines. AI is an activity that makes computer intelligent according to a human mind. Artificial Intelligence has become a part of our life and one cannot imagine life without AI. [3] The main objective of using Artificial Intelligence is not only to identify the problems but also to solve them in order to ease the work load of a human. Today, Artificial Intelligence is used in each and every domain like healthcare, education, security and surveillance, and many more.

History of Artificial Intelligence

[4] The history of AI is traced according to imagination, philosophy and fiction. Early inventions in the field of engineering and electronics influenced AI. [5] In 1950, AI was first described by Alan Turing but several issues and limitations in early models prevented its acceptance all over the world. Many of these issues and limitations were some how sorted in early 2000s by deep research and learning. Today AI systems are even capable to analyze any kind of complex-to-complex problem and solve it according to a human mind. Today in almost all the fields we are using AI in some way or the other. In 1950, Alan Turing was the first one who described the concept of using computers that can stimulate critical thinking and intelligent behavior. Later Turing described a simple test in a book *Computers and Intelligence* in order to determine whether human intelligence can be used by a computer or not.

Growth of AI

[6] Today AI is used in almost every sector be it be educational, medical, financial sectors. It has even contributed in the economy of different nations and even in manufacturing and production of Multinational companies and even small-scale businesses to some extent. [7] Artificial Intelligence in healthcare has proven to be a revolutionary step not only in medicines but also in surgeries. We can see robotics working on principle of Artificial Intelligence in management and in scientific sectors. Growth of Artificial Intelligence can be seen by the fact that it has been used to minimize traffic jams on roads by the help of sensors. [8] First described in 1950, Artificial Intelligence in early models had some limitations due to which its acceptance was prevented widespread in the field of medicine specially. But now with advancement in Artificial Intelligence (AI) with the advent of deep learning most of these limitations has been overcome in the early 2000s. We have entered a new age in medicine where AI systems, with its continuous development, are well capable of analyzing complex to complex algorithms and through risk assessment models, AI can be applied in healthcare practice in order to improve workflow efficiency, and diagnostic accuracy.

Artificial Intelligence in Health Care Appliances

[9] Artificial Intelligence and related technologies were already being used in businesses and education sector but today it has been in a major role even in healthcare sectors. These technologies have much potential to help and enhance in the care of the patient and ease the work load of doctors and other medical staffs. Many researches shows that AI can perform as efficient as or even more than a human mind in order to diagnose a disease or in other health care system.[10]we would never have thought that science and technology will develop so much that one day it will be used in health care which is the most difficult job as any small mistake might result in even losing the patient. Artificial Intelligence in the sector of healthcare has gone under so many advancements that we cannot even think of healthcare without use of AI in it.

[11] There are wide applications of AI in health care starting from organizing patient routes to providing better treatment tactics. In the case of AI, they are not bothered by the number of patients and stretch work hours. For providing right diagnosis AI uses arithmetic algorithms along with using data science from the human body. By using AI for drug discovery this process which was expensive and tedious earlier has now become cheaper and quicker.

Artificial Intelligence in Manufacturing and Production

[12] With the growing population the demand for products is increasing and so the development of manufacturing industries is also increasing. These industries are supporting pillars of any nation. AI has provided a great boost in these industries whether it would be a matter of management, security, and production and fault detection.

[13]Sustainable manufacturing that is now a very growing topic is achievable because of machine learning which is the result of AI. Because of the introduction of these now industries are focusing more on smart work which involves computerized machines undertaking processes of packaging, fault detection, and maintaining records. Work has become a lot faster and feasible.

[14] Developed countries like the US have also taken steps in this modern direction. Also, China has drafted many policies in their country for intelligent manufacturing. Some examples of reforms can be said with industry 4. 0 in which cyber physical systems form the basis of this industry.

Artificial Intelligence in Security and Surveillance

[15] AI has also proved its importance in law enforcement. To catch criminals and also to save people's lives. Because of the development of software like face recognition, police can now identify the criminals from any previous records. [16] CCTV cameras are the basic example of AI in which we can monitor our houses or offices from anywhere in the world on our phone also in traffic because of the sensors present there are now low chances of road jam and accidents.[17] Today surveillance facilities are also facilitated by Artificial intelligence, for example in detecting whether a person is entering a restricted area or if there is any illegal or unusual activities happening at a place under surveillance. AI uses the surveillance data to ensure that the person has paid for the parking or not at places where parking is paid. Countries like the US and China have developed millions of surveillance cameras at almost every place in their country and are leading in this field. China is also supplying AI based technologies to at least 60 countries.

Artificial Intelligence in Education

[18] Advancement of Artificial Intelligence in Education has not only benefitted students but has also helped teachers. A teacher now can teach to his/ her student at any time and at any place and

even while travelling. Gone are the times when students have to buy big bundles of books and take those to school or college in order to study. In this modern era of Artificial Intelligence, they can just download the study material on their mobiles, laptops, etc. and they can access them at any time and at any place without carrying the huge burden of books on their shoulders. And they can access information on any topic of this world by just searching it on the internet.

[19] The current emerging fields in educational technologies is International Artificial Intelligence in Education Society (AIED) according to the 21st International Conference on Artificial Intelligence in Education held in 2020.

[20] Robotics are the best example of AI in education. AI has helped in creation of Robots that not only ease the world of humans but by using that student can improve their learning experience. Robots which is an application of AI in Education can work with teachers in easing their work like evaluating the answer of students, teaching the student by showing visuals of that topic.

[21] There are many online platforms that enable students to prepare not only for school exams but also in different competitive exams. Some of the examples of these include Topper, Physics Wallah, Byjus, etc.

[22] Initially computers and computer-related systems were the form of AI in education but today it is in the form of web-based and online education platform. These systems have made it possible to use Robots, a form of humanoid that can do a lot of work on its own as programmed and ease the work of human, chat bots which help teachers in many ways as programmed. The use of these online platforms has made learning very easy on the web. It has empowered teachers to teach at any time and from any place of the world. Similarly, AI has provided students with improved learning experiences because AI has enabled the customization and personalization of learning materials to the needs and capabilities of students.

Advantages of Artificial Intelligence

[23] Today AI is used in almost every sector be it be educational, medical, financial sectors. It has even contributed in the economy of different nations and even in manufacturing and production of Multinational companies and even small-scale businesses to some extent. Unlike Humans, AI can work 24/7 thus giving services to the desired customers at any time and at any place in this world.

[24] Artificial Intelligence has shown great productivity in medicines and even in surgeries. we can see robotics working on principle of Artificial Intelligence in management and in scientific sectors. Growth of Artificial Intelligence can be seen by the fact that it has been used to minimize traffic jams on roads because of sensors and all.

[25] Artificial Intelligence and related technologies were already being used in businesses and education sector but today it has been in a major role even in healthcare sectors. These technologies have much potential to help and enhance in the care of the patient and also ease the work load of doctors and other medical staffs. Many researches show that AI can perform as efficient as or even more than a human mind in order to diagnose a disease or in other healthcare system.

[26] Machines working on the principle of Artificial intelligence do not require any kind of rest or sleep so that the work can go on continuously without thinking about the tiredness that a human would have inherent during that work. Today, AI is used in every field of robotics, industries, stock trading, NASA space station and even in our home. We cannot think of life without AI.

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and stretch work hours. For providing right diagnosis AI uses arithmetic algorithms along with using data science from the human body. By using AI for drug discovery this process which was expensive and tedious earlier has now become cheaper and quicker

[28] Advancement of Artificial Intelligence in Education has proved to be a revolutionary step as it not only has benefitted students but also helped teachers in easing their work of teaching. Now, A teacher can teach his or her student at any time in any part of world by the help of certain technical platforms that enables them to teach students all over the world.

Challenges or Dis-advantages of Artificial Intelligence

[29] Development of AI also leads to a major concerning problem which is that it will become a cause of huge amount of unemployment as it will soon start to substitute humans in almost every field which might lead to increased number of cases of crimes, poverty and depression.

[30] Artificial Intelligence lacks emotional and sentimental aspect and are merely able to build up a relationship between user and computer there are often regarded as black boxes. In some situations when solution to certain problems have to be given by emotional and sentimental aspect, these AI based search method won't be applicable.

[31] AI can be sometimes be a reason to mass scale destruction if it goes in wrong hands. By increasing development in AI, human jobs are affected.

[32] the AI based equipment's are very expensive it is not easily accessible to middle class and lower-class people. With automation of the bulk of work the human will become lazy. [33] AI has provided many benefits in agriculture but still there are challenges in using these AI based technologies by farmers. because of lack of knowledge and lack of experience they still do much of the work manually which is very time consuming and which could have been done faster and easily. So, we not only have to do development in the AI machines but also have to teach farmers how to use them.

Conclusion

Artificial Intelligence or simply AI has become a part of human life and life cannot be imagined without AI. AI is used in each and every domain, be it be in healthcare, or in security, be in education or be in manufacturing, we are surrounded by Artificial Intelligence. AI is used by students as well as teachers in online education, companies use AI to automate their system, AI in factories tells us when a part of the machinery could fail, thus helping the owner from bearing the losses caused by sudden failure of a part of machinery. AI is even used in healthcare. Student can study from any time and at any point of time, we can talk with our friends and family at any time and from any part in this world. But in contrast it has and is going to ruin the work of many labours as usage of AI there has and is going to replace the labour. Introduction of AI has made out life easy but has also increased our dependance on computer software and also became a reason for thousands of people losing their job. In my opinion, development of AI has proved to be a revolutionary step and has made our day-to-day work very easy but in order to maximize its use, people have to become aware on how to use these technologies.

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