

THE PAST, PRESENT AND FUTURE OF ARTIFICIAL INTELLIGENCE

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What is AI?

[1] Artificial intelligence is field which consist of production of smart computer and intelligent machines or programs. Artificial intelligence is similar to using computers to understand human behavior or their smartness but not restricted to methods that are biologically observable.

[2] Artificial intelligence is a part of computer science as it is surrounded by fields related to computers, cognitive science and psychology. Artificial intelligence mainly deals with the tasks that requires human intelligence and smart approach towards that task.

History of AI

[3] In 1956 John McCarthy become the first person to described the term Artificial intelligence which caught the attention of researches worldwide and was also discussed at a conference at Dartmouth. later next year the first problem solver was tested and McCarty was stated as father of Artificial intelligence. LISP (language for creating Artificial intelligence software) which is still in use nowadays for list processing was announced by McCarthy. In 1956 scientist named Herbert Simon stated that in next 20 years AI or machines can be able to any work that a man can perform but later man of the scientist realized that an algorithm than can replicate human work cannot exists. Today we have different meaning of artificial intelligence which is to produce machines or software that can help us in our work efficiently.

[4] At the early state of Artificial intelligence it was related to imagination, philosophy and fiction. It was also influenced by inventions in electronics and engineering fields. some early works in Artificial intelligence were problem solving including basic work in learning, representation of knowledge and demonstration with interpretation of programs in understanding language, translation and associative memory.

Growth of AI

[5] the economic progress from last 150 years is driven by automation as industries use steam and electricity to automate many productions process but artificial intelligence is the next change in this process. It can be MRI machine which are used in healthcare, autopilots in cars or machines or any software or machine replacing human. AI is not only replacing old methods but also providing us quality output or products.

[6] Artificial intelligence is already impacting productivity of scientists and researchers in different fields. AI helps them in searching anything the want from vast knowledge and also providing them new knowledges. Burden on scientists had been reduced a lot. AI also predicts which piece of knowledge will be more relevant to researcher or which combinations of existing knowledge will be useful to him.

AI in Healthcare Appliances

[7] Digital consultation- There are some bots made using AI such as Babylon and uMotif that can help patients by sending messages to them about their health or can reply queries related to any medication, can suggest doses.

- Robotic surgery- Using AI computer or robot assisted surgery is common nowadays. The invention of robot assisted surgery was to overcome limitations of preexisting minimally invasive surgical procedures and to support surgeons performing surgery.
- Management of diabetes- Using AI to analyze or to check diabetes of a person help patients a lot by reducing the intra and inter-observer variability. The use of Artificial intelligence improves the outcome with more precision and maximum speed. The system named Rhythm forecasts and manages blood glucose level of people with diabetes, relied only on non-invasive biometric sensors and AI.

[8]some artificial intelligence tools or applications in cardiac management

- Support vector machine (SVM)- it is used to solve the classification of two groups
- Naïve Bayes (NB)-used to learn conditional probability
- K-means
- Artificial Neural Networks
- Gradient Boosting

[9]

- Managing medical records and knowledge
- Treatment design
- Different variety of tests
- Creation of drugs

AI in Manufacturing and Production

[10] Modern manufacturing and production systems are supported by powerful AI or computing networks. With the help of sensors, machines, smart devices and people, data is being analyzed efficiently and better than ever before. Advanced computation and artificial intelligence can be seen in majority of the manufacturing factories.

[11] Artificial intelligence is commonly used in manufacturing and production of food and beverages. AI has made a huge impact in food industry as automatic machines can produce good quality of product more efficiently and fast than other ways. Standards of food is increasing day by day as from cooking to packing everything can be done by machines and also provides high quality and healthy food.

[12] Artificial intelligence in manufacturing and in factories is helping environment a lot. Not only environment but AI is also cost friendly and effective than other options. Using AI makes less wastage of raw products which help both environment and the investor.

AI in Security and Surveillance

[13] With the day-by-day development in technology and science, security and surveillance are becoming easy than before. The invention of unmanned aerial vehicle(UAV) and camera surveillance systems (CSS) provided ha huge boost for practical application related to security and surveillance. However, there are some risks and challenges such as transmission of data and process but we can overcome them in future.

[14] As human surveillance is still required in all surveillance systems, which is very challenging but with new advancement in computer science and artificial intelligence can be overcome. A CCTV based auto thief detection system with the use of motion sensor which can notified the security using the real time movement analysis of any human.

[15] There are a lot of applications of artificial intelligence in military and police all over the world. Such as in cybersecurity and in defense of a nation. The use of AI in cybersecurity surveillance has reduced the number of labor use in surveillance. In military defense most of the nations are already into robotics or advanced aircrafts to make their defense strong.

AI in Education

[16] Inclusion of Artificial intelligence in our education system is increasing day by day as most of the people depends on technology in their daily life. Artificial intelligence in education has its own advantages like better understanding to some concepts with animated videos, helping teachers to decrease their workload and more. but in classroom AI is having a huge impact than you can think, most important is that the relation between teacher and student changing a lot. Nowadays teachers are mere facilitators of the learning process, rather than someone who is good at his subject and can teach others or solve their doubts.

[17] one of the main drawbacks of addition of Artificial intelligence in education system is verbal communication of computers. Communication skills is one of the most important aspect of life which is must for any student to grow but computers are weak in verbal communication whereas teachers have many different types of skills both verbal and non-verbal to convey information like speeches or gestures which play an important role in education or teaching. To improve verbal communication of computers it requires more money and research which can be improved in upcoming years.

[18] Twenty years ago, computer-based training (CBT) and computer aided instruction (CAI) were introduced in the field of teaching. Both these were the first systems used to make teaching or education better using artificial intelligence. These systems were based on the instruction given by the author not according to particular learner which has changed a lot with time.

For example: if question 5th is answered correctly then only go to 10th question otherwise go to 15th question.

This makes a huge impact from one person to another as one can be good as some concepts but other can be weak with those. Both CAI and CBT helped some of the learners.

All this leads to the research in the field of intelligent tutoring system (ITS) which gives flexibility to each student. It provides teaching according to the student's need.

Advantages of AI

[19] Artificial intelligence is getting in our daily life day by day due to its effectiveness, speed and accuracy in solving some problems or in decision making. AI is making human life better every day.

One of the major examples is our browser or search engine. Every person is dependent on search engine for getting their answers or to get some information. From news to entertainment or study everything is available to us just from one search.

Artificial intelligence has already proved itself to us by its ability to solve any type of problem accurately or more efficiently than human. AI can easily replace human staff by giving better decision making and fast then humans at any factory or office.

AI can gather data better than anyone and its decision making is far better than human not only qualitatively but quantitatively also.

[20] Some of the advantages of using Artificial intelligence in libraries are-

As we know AI is far better than humans at intellectual tasks and problem solving which gives an advantage at the library as AI can give answers to any question more accurately and quickly than any other option.

AI gives support to the staff the library by helping them to store information and providing them that when needed. REFSEARCH is a system which can easily help us by providing solution to the certain question and also helps student in their studies by teaching them reference skills.

[21] In 2020 colorectal cancer (CRC) was the second ranked type of cancer worldwide with the mortality rate of 12.0 per 100000 people. At its early stage it can be detected and can be prevented. With the increase in use of technology in medical science, Artificial intelligence is huge help to doctors. Particularly in gastroenterology AI is providing great help. Computer-aided systems are used for diagnosis and to improve detection of polyp and its classification to prevent CRC.

[22] some advantages of AI in cyber security are:

AI is commonly used to detect harmful software such as malware, viruses, spyware and more. Without AI protection of our devices is near to impossible. As these harmful programs are increasing their strength day by day AI is also improving itself.

AI is used by governments to predict threats or any cyberattacks. AI can search, scan and gather huge amount of information from which can predict lot of attacks. Computers stores lot of information criminals and their past crimes.

AI helps government to gather information from social media which can be harmful for citizens or can start any attacks.

[23] Some more basic advantages of Artificial intelligence are:

AI can reduce work load on humans by replacing them with machines and also provide better results.

Using AI in factories can give better result in less time as compared to human workers.

We can use Artificial intelligence in deep mining which can give us fuels more efficiently as machines can be replaced but humans cannot.

We can expect mistakes from humans but machines are accurate as they are programmed and provided some work.

Challenges or Dis-advantages of AI

[24] some of the disadvantages of Artificial intelligence are:

Some of the equipment are pretty expensive which are important to make machines. So, lot of money is required to make some machines and, in their repair, more money is needed.

Causing destruction is easy with machines if they are used incorrectly.

Machines are mainly programmed to do some specific work but if they are given some different tasks sometime machine can crash and will give error.

Too much use of Artificial intelligence is making human being lazy and his ability to think and do work is also decreasing.

[25] Some of the main disadvantages of Artificial Intelligence (AI) in our daily lives are as follows.

- Human jobs are most affected by the increasing use of artificial intelligence which leads to the increasing numbers of unemployed people.
- how good the machine or program work just depends on the person responsible of coding the program.
- AI is made by humans but still misses the human emotion or feelings touch.
- AI is making human lives full of comfort but all that comfort also brings laziness to the new generation. New generation depends on technology a lot.
- large amount of money with time is required to make some of the machines to get most effective output.
- Technological dependency increased.

[26] In field of medicine and hospitals artificial intelligence plays a major role. from scheduling appointments, scheduling dosage algorithms for any patient or arranging data of all the patients. But there are some problems we face in use of Artificial intelligence as some of its practical applications are still at early stage and need some improvement.

One of the main problems with Artificial intelligence in medical field is lack of human emotions, feelings and sometime human intelligence. As use of AI is increasing day by day it is also affecting the jobs. Machines and AI is taking place of many workers not only in factories but in medical field also which is not the right thing.

[27] Artificial intelligence is great help in education system but there also come some problems with involvement of Artificial intelligence in teaching-

Every teacher connects with his student, understands their weakness and strengths on the other side robots or machines lacks emotions, machines only work with data and stats. As of now it is not possible for any machine to understand what a particular student needs to grow and learn.

Nowadays many teachers fear that they can be replaced by machine or robots, which is practically not possible as a teacher understand every student, he makes efforts to understand weakness of each of his student and what he can do to help him to achieve success.

[28]some more disadvantages are-

sometime machines can get bugs or error if some difficult tasks are given. These bugs or small error can cause consecutive problems and can also lost some of the important data.

Military of most of the countries are well equipped weapons or robots made up with Artificial intelligence. If by any chance any robot or machine fall in wrong hands, then it can cause huge destruction or any attack.

Conclusion

In my opinion Artificial intelligence is already changing this world, AI with the ability to do any task better than human and without taking any risk just make a difference to this world. with the help of Artificial intelligence this world is going to be much better place for our future generation. Artificial intelligence is having some issue, which must be taken care off. In last 10-15 year this world has changed a lot, mainly because of the new technology and machines.

As technology and artificial intelligence tend to develop more, humans will be given more support to their work. there are some tasks in human daily life which are repetitive and make them to same work again and again military and security forces of each country will develop a lot, so that they can protect their countries from unwanted terror attacks.

There are always some discussions about AI both positive and negative but the positive effects of Artificial intelligence have great value than those negatives.

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