VARIOUS ASPECTS OF ARTIFICIAL INTELLIGENCE

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What is Artificial Intelligence?

[1] The term artificial intelligence refers to the fast computers we use, all those machines which are used to imitate human intelligence to make our work faster and easier with less labour work. It also includes software that helps us achieve our goals more quickly. [2] The intelligence or problem solving capability shown by artificial entities such as robot managers in hotels made by humans embedded with mechanisms which solve the problems according to situations at hand can explain the very meaning of artificial intelligence.

History of Artificial Intelligence

[3] In history this huge growing sector was mainly based on fiction and imagination andwho would have thought that giant computerised machines and more compatible and smart robots will become major part of modernisation. At first the milestones in this field were proving of theorems and helping in providing and translation of associativememory.

[4] In the 1940s when programmable digital computers were made it gave the idea to a few of the scientists to make an artificial brain based on the concept of mathematical reasoning. Some think that John Mccarthy has come up with this term for the first time but it was used much earlier which was shown in seminal work of Vannevar Bush.

Growth of Artificial Intelligence

[5] Artificial intelligence is now used in more and more sectors. In medical, financial, educational, it has also majorly contributed to the growth of economy of nations and the production of mega companies such as many of the tech giant organizations. [6] We can see that in healthcare sector AI has shown huge productivity in research of medicines and surgeries including robotics. In the field of management we can see robotic workers working as receptionists etc, also to keep huge chunk of data's which are accessible readily and also help in the field of cyber security . Examples of its growth can be seen that now we are able to reduce traffic jams because of sensors that are able to sense road conditions. Now we can also make calls with the help of smartwatches and use them as mini smart phones.

Artificial Intelligence in Healthcare Appliances

[7] There are several applications of AI in healthcare sector starting from managing patient routes to provide better treatment facilities. By the help of AI they are not concerned by the number of patients and long working hours.

For providing correct diagnosis AI uses arithmetic algorithms along with using data science from the human body. By the use of AI for drug discovery this process which was earlier very expensive and laborious has now become cheaper and faster. [8] In healthcare appliances AI has played a major role in the development and growth of flexible pressure sensors. These sensors provide a number of advantages, including a high degree of flexibility and compatibility with large-area processing methods.

Pressure sensors have yet another essential application called mobile bio-monitoring which can be utilized for medical diagnostics.

[9] We would have never imagined that science would evolve so much that we would be able to see surgeries performed by robots as an accomplishment of AI in the healthcare sector. These special surgeries assisted by robots were developed to improve the capability of the surgeons performing open surgery. The surgeons use robotic arms controlled by computer for assistance and its end results. The best advantage of using these computerized techniques is that the surgeons may not be available during the duration of surgery rather they can be anywhere in the world.

Artificial Intelligence in Manufacturing and Production

[10] AI has been of major help in manufacturing systems which are namely automated visual inspections, maintenance and fault detections.

People are attempting to apply this knowledge to tasks such as production planning and material handling. AI has great potential in the field of semiconductor manufacturing. [11] Manufacturing is a powerful pillar of a nation's economy and support many livelihoods. The deep fusion of information communication technology and product related know-how enables a revolutionary transformation of manufacturing approaches. Developed countries such as the US and UK have drafted many policies for intelligent manufacturing. One of the example is "Industrial Internet" in 2012 to connect people , data , intelligent equipment to enable smart and quick decision making. [12] In case of India as it is an agrarian country most of its revenue comes from agriculture sector with the advancement of latest technologies and their usage will encourage it's growth. With the help of AI and ML systems, farmers can make packaged produce and storage more effective, with less waste, and can also provide smart data on crops to enable smart inputs.

Artificial Intelligence in Security and Surveillance

[13] In this developing world there is a growing need for advanced security systems. AI has proved its importance by providing various intelligent software's and machines. Basic examples are CCTV cameras used for surveillance and also with the use AI and DeepNeural Networks , VCA software's is trained to identify and control several differentiatedobjects.

[14] In law enforcement the face recognition software is of great use to identify the criminals from their past records.This feature has made their work faster and they are able to collect such huge chunk of data with greater ease. In this field machine learning techniques can be used for regeneration and to compare video backgrounds and to help forensic teams for identifying vehicles. We can say that Artificial Intelligence is the coming transformation in video analytics. Video monitoring software's which are growing with time are also playing an important role in themilitary.

[15] To facilitate monitoring facilities, AI helps in detecting if a person is entering a restricted area or if there are any unusual behaviors and it reports it. AI uses the surveillance data to ensure that the person has paid for the parking's. Countries like the US and Chinahave developed millions of surveillance cameras and are leading in this field. China is supplying AI based technologies to at least 60countries.

AI in Education

[16]AI plays an important role in education, it involves techniques for the study of human teaching and engineering that helps the human learning and research. It seems a long term helping hand for the humans. The term 'Intelligent tutoring system'(ITS) is used at a large scale for the engineering side of disciple. Computational methods are used to help in planning, enhancing knowledge, control,

modeling, dialog management, etc. It is also used to explore and evaluate different theories about global education. Three types of goals seems to be game changing in field of education, i.e. the use of AI, cognitive science techniques to use in problem solving domain as well as tutors teaching and student learning in that particular domain. Some teaching strategies that is difficult to attain in class becomes easy to understand with the help of AI. [17]In the modern era the belief on technology is been increased at very high rate and it is keep increases. AI plays an important role in that, to changing the relation and evolving a good relation between teacher and student, as well as among the students also. Let's focus at instance that the issue of 'Technological inclusion' of individuals through education has a deep social, economical and political effects, such as the individuals is being fit to join the market and contribute to the economical development of societies. It also expands the way of learning. Christensen notes was very successful use of technology in classroom is highly dependent on teachers attitudes towards computers which will lead to the great enhancement in education. [18]Nowadays creation of Handbook by AI is attempted to make the concepts, methods, tools, and main results of research accessible to a broad scientific and engineering audience by both the writers and editiors. Currently AI work is very used to practice specialists and other interested computer scientists. But the field is growing tremendously in every field of education, researches, scientific experiments and many more. With this book the writer is trying to build a bridge that are easily crossed by engineers, experts, scientists, researchers and our own computer science colleagues. The main goal of this book is to construct instructional programs that is well prepared to optimized for each student.

Advantages of AI

[19]AI apply an empirical research methodology for planning and search algorithms that are used in common domains, as well as learning the machine language by using the actual data. If you look at fields like modelling and empirical investigations, it appears to be quite unusual. This is only the one-forth of the articles published in User Modeling and user adapted interaction. It enhances the effectiveness, the efficiency and the usability of the system. [20] The widespread deployment of AI applications in any tool contributes to the establishment of dependability. It has proved itself to be very reliable in various applications because of its ability to use intelligence similar to human in a reasoning process. It also helps to save money by minimizing the requirement for personal time.If a company has to save costs, it may turn to AI at the right moment and in the right way. It has afantastic talent of decision making which leads to reduction in operational costs. [21] AI consist of two words one is 'Artificial' and the second one is 'Intelligence' which means manmade and intelligence i.e. the capacity or ability of thinking respectively. AI may be defined as an area of computer science established by humans to create intelligent computers that can behave like people and digest information considerably quicker than humans. It can also reduce the time, money, efforts of the human. It consists of specialized machines that are used to solve complicated issues. It is very useful for both the humans as well as for the society. [22] AI gives the highest amount of accuracy and with complete zero error.It's utilized in a variety of applications, including robots that explore space, the depths of the earth, the depths of the oceans, and many other locations where people can't go. It can also be utilized as a life-saving alternative since it can perform tough tasks that humans are unable of. Smartphones are the great examples of AI such as Alexa, which makes your work easier only using the voice command. [23] AI emphasizes on symbolic and non-algorithmic problem solving methods. Its intelligence is based on its capacity to control labor, confine space, and make things simple in comparison to humans. It has transformed the society beyond imagination. Natural

language processing, pattern discovery, expert systems, and robotics are all sub-areas with the objective of working similarly to human intelligence.

Challenges or Disadvantages of AI

[24]AI is reshaping the world in its own way so their emerges some of the impacts or some harms on the society. It is a concern to look upon the servers on regular basis. It is also important to educate future members of society, stakeholders in a such a way that AI might not impact the life of people. They should take their responsibility to increase its benefits without losing its potential harms. AI cannot take care of the standard ethics of the society. We have to look that no lack in privacy should emerge through this technology. [25] Some experts make investigations on disadvantages of AI in 1987. They discovered that it can be harmful on mental attitudes such as beliefs and intentions. Data literacy to manage the flow of large volumes of data. The human are becoming obsessed with it. Experts also found that AI is discovered by humans, but now the humans are totally dependent on technology. It is also lacking in the field of critical thinking regarding some serious issues. If it grows to be sufficiently powerful and knowledgeable, it may be able to take the role of school instructors. There were more dangers and drawbacks than indiscriminate robots and artificial intelligence uses in education. [26] Some of the main disadvantages of AI in our day to day lives are that some time it can be misused by any outsider without your permission leading to damage. It has the potential to influence human occupations, resulting in a rise in unemployment in society. It is making the younger generation dependent and lazy. A mismatched software might send it in the incorrect direction. Lack of human touch is involved. It requires a lot of time and money. Its functional originality is reliant on the coder, thus it may not be suitable for all users. Some people's mortal and social ethics may also be harmed. [27]AI based trading is also becoming the need of the hour nowadays. It shows a lot of advantages but it has plenty of negative sides also. It is anticipated that it will learn and execute more effectively, as well as dominate and exceed humans. Methods for using AI and AI-based applications vary depending on the stocks, assets, and markets. Varied time periods and modest modifications have different effects, all of which can end in loss. Following that, more investigation was required to discover particular data trends. [28] Uprising of AI and data usage in our daily life puts much concern about privacy and other ethical issues. We suggest that what is needed now is a way to comprehensively understand these issues and find mechanisms to resolve these issues. We propose that some principles of responsible research and innovation might serve as the framework for acting in such a way that the technology we use become socially acceptable, attractive, and sustainable. We want to utilize AI responsibly so that it does not hurt anyone and protects our data from being disclosed, among other things.

Conclusion

I believe that many of us have benefited from AI in our lives, whether we realize it or not. Taking online lessons and viewing large-scale manufacture of diverse things by computerized machines are two examples. AI's introduction has undoubtedly aided us in numerous ways, making our work easier and more efficient. The issue emerges, however, when it comes to the working class or those who cannot afford this luxury. They work in these areas, but if people continue to lose employment as a result of AI, then this world of scientific fantasies is not benefiting everyone equitably.Also, in order to deploy AI in many areas, people must be taught; however, who will train them, since employees in firms are required to master machine learning and languages in advance. Millions of people are expected to lose their jobs in the coming years, so introducing AI machines, robots, or money advanced technology can be efficient or money advanced technology that will come with

time, maybe not today, but research is underway on how to make it more safe and easy to work with. The problem of unemployment must be solved, and people must be trained in the proper use of AI systems. The other shortcomings will be addressed one by one as human research progresses.

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