ONE STEP TOWARDS THE NEW ERA
ARTIFICIAL INTELLIGENCE

YASH VISHNU CHOPADE
21BCE0967
Email ID: chopadeyash.vishnu2021@vitstudent.ac.in

What is Artificial Intelligence

[1] It is one of the branches of computer science which is used to make various type of new intelligent machines, and computer programs. but being an artificial thing, it doesn't restrict the method which is observed biologically. [2] Artificial intelligence is a web of computer science field that encourage us to make new intelligence machines that can response, think on their own and make decision of what it has to do next without being dependent on humanartificial intelligence word that are artificial and intelligent which has their own specific meanings artificial refers to the thing/object which is developed/made by human and intelligence refers to the ability to think and make own decision. Thus, the total word artificial intelligence refers to the manmade thing which has ability to think. This interesting topic gives an idea that one day machines artificially made things/ machines will have a great ability to think and make their own decisions or in other words that we will be able to imitate the characteristics that differentiate humans. The similar things are mentioned in old mythology and other scriptures, artefacts and literature as well. Now days artificial intelligence is able to do reasoning, planning of various plans, explain data structure, pretending outcomes. Depending on these methods statistics and probability are done.

History of Artificial Intelligence

[3] Artificial intelligence was like imaginary thing to every person until some scientists come with an interesting idea which was about artificial brain. First research about artificial intelligence wereheld in the Dartmouth college around 1965. But while doing so they came up with lot of difficulties and didn't succeed in first few attempts. Then government started to force them to stop their work cause they thoughts it was only waste of money and time. But Japanese scientists realize the importance of this revolutionary technique and started work again after 7 years again. Which inspire and give new hopes to government various industry again. [4] according to research George Boole was the first man who express the concept logical reasoning in 1847. After this the next person who start research on artificial intelligence was Alan Turing who described the concept of tuning machine in 1936. After that in 1950 Alan characterized the definition for determine the concept whether the software is intelligent or not. According to Alan's theory the software intelligent behavior is similar to the human intelligent capability. He said that software could be this much intelligent that the people can't even determine whether he is chatting to other human or machine. And this test he called Turing test. If the software were able to pass all the test then that was recognized as intelligent software and also get honor of being called intelligent agent.

Growth of AI

[5] At the first it was believed that artificial intelligence was limited only for limited works but making this assumption all wrong it has proven that artificial intelligence can be use in various number of industries. Artificial intelligence has also great role in business. Now it can complete

various algorithm within a second which is more accurate than any human being that is the reason why AI is in lead. Now days it has shown his big role in health care, entertainment, research fields etc.[6] Various industries and companies started to hire robots or any other artificial brains to make their jobs easier and way faster than humans which give them more profits compared to humans in the interview Mr. Nick smith which has spent quarter of century in computer designing stated this problem that artificial intelligence is growing way faster than human imagination which can actually will make others human jobless.

Artificial Intelligence in Healthcare Appliances

[7] like in industries and computer field artificial intelligence has also shown various miracle in health care industry. It seems that Ai will make a whole revolution in this field also. This hope has led to grow focus and investment in artificial intelligence medical appliances from both government organization and technological companies. However, there are some concerns about this also these are Lack of transparency with specific AI algorithms, privacy concerns with the data used for training AI models, And safety and liability issues with AI application in the clinical environment.[8]Pressure, defined as the ratio of the area to which force is used, is ubiquitous in the basic operations of nature and human society because of their vast use in personal electronic gadget and industrial monitoring. Rapidly updating electrical sensorics techniques and organic electronics have given their contribution significantly to the development of flexible pressure sensors, with unique advantages such as excellent flexibility, low cost and compatibility with large area processing techniques.Particularly, many flexible pressure sensors constructed on organic matter have been developed, and their sensing capabilities extend beyond the human skin, the largest sensory organ with thousands of specialized pressure-sensing receptors.Through the integration of a large area of elastic devices, active sensing matrix has been created which is an ideal candidate for electronic skin (e-skin) applications.Interest in integrated networks of sensors is also driven by promising applications in intelligent robotics,biomimetic prostheses, human-machine interaction, which greatly promote the advancement of artificial intelligence systems.Biomonitoring the health with the use of mobile in medical diagnostics and health care is another attractive application for pressure sensors. Organically made pressure sensors are not made to take the place of silicon-based devices it is made to full fill the niches in next generation various type of portable and wearable health care products for which low cist excellent foldability and light weight are highly desired. [9] societal concerns like systems level operations, Operations, or innovations like personalized medicines are used to be addressed by the health data stored in artificial intelligence. so that doctors can check or search the specific file about what they are tackling which make them doing this easy and time saving.

AI in Manufacturing and Production

[10] Increasingly ubiquitous and powerful computer network support modern productions and logistics systems. Sensors, machines, smart devices, systems constantly create tons of data in this network. By the use of this computational capabilities this data can be analyzed more broadly, faster, and deeply than ever before. With such great process it has redefined the value of artificial intelligence (AI) technology and opened a new era known as Industry 4.0 or Smart Factory.[11] According to research done on application of artificial intelligent technology in the field of manufacturing industry in last few years, it is seemed that there is rapid development of core technology in new field of Internet plus AI, that is one of the factors which is profitably affecting the

ecosystems of manufacturing, means, change in models, as well as development of AI.In terms of new development of both AI technologies and applications, broad market demands were provided by the continuous evolution of smart cities, intelligent transportation, intelligent robots, intelligent logistics, self-driving vehicles, smart economies, intelligent toys, smart communities, intelligent medical care, and smart-phones etc

AI in Security and Surveillance

[12] Artificial intelligent has not only made our life more convenience but also made us feel safe by creating various security tools. Artificial intelligence is an essential part of making out nation safer. Serious national security operations in the context of various data and technical domain challenges can benefit from creating intelligence and security information science research disciplines. [13] Cyber surveillance is moving towards the use of Artificial intelligence which is causing less labor-intensive than the traditional human surveillance methods that it has augmented or replaced. The use of machine learning can give speed to this trend which need the resources of large corporations or nation-state levels within the reach of small organizations or individuals. [14] In the terms of ambient data and connections, code driven system has reached to the more than half of the population of the earth, with the presenting the unimagined opportunities and the unexpected risks to human society. Artificial intelligence is getting a rapid speed particularly in industrial construction. But this unusual use of artificial intelligence in cyber-attacks appeared to be rather frightening. The thought of a machine that enhances one's self-knowledge through self-learning becomes sophisticated to attack things is a terrible problem for the cyber world. Most of the time, this artificial intelligencebased cyber-attacks are carried out using advanced malware that involves advanced theft techniques to avoidsecurityperimeters.Traditional cyber security methods are failed to counteract these attacks. To address these issues, a strong transport classification system using Principal Component Analysis and Artificial Neural Network is proposed to provide intensive monitoring.Further, the proposed method aims to expose the various artificial intelligence based cyber-attacks with their present-day impact and their future. The simulation is done using a self-developed autonomous agent that learns on its own.

AI in Education

[15] Humans are making use of application AI in education and it has been subject for research for more than 30 years now. In order to support lifelong learning and formal education traditional classes or workplaces are explored by these areas. Psychology, education, linguistics, neuroscience, anthropology and sociology are combined by AI to promote the development of AI. Which is inclusive, personalized, conducive environment learning, other AIED tools attractive, flexible, and interdisciplinary in itself.[16] Computers have been used in various industries and various medical fields but in the field of education computer has been used almost for 20 years now. Computer based training (CBT) and computer aided instruction (CAI) were the first system developed in order to attempt to teach using computers. But it has some faults the instructions were not separated to learners need. In this type of systems, the learner's ability were not considered. Simple example for this is 'if question 21 is answered go to question 54 otherwise go to question 32'. [17] Now days artificial intelligence is contributing a lot in education field. The term intelligent tutoring system (ITS) is often used in regard to the engineering side system competitional methods are used to explore and evaluate various alternative theories about learning. Noe scientists are trying to develop such system with can contain greater knowledge about domain increase reasoning ability about topic selection and response generation.

Advantages of AI

[18] Artificial intelligence (AI) applications are used to imitate human intelligence for decision making or problem solving. Benefits of permanence, reliability, and cost-effectiveness, and also addresses uncertainty and speed in either solving problems or reaching a decision are provided by AI. AI has been used in various fields such as, economics, linguistics, engineering law, manufacturing and medicine and for various modeling, prediction and decision support and control applications.[19] This is how Artificial Intelligence (AI) is defined Intelligence displayed by an artificial element to solve difficult problems and such a system are generally assumed Having a computer or machine. There is a huge advantage of artificial intelligence That his decisions are based on facts Emotion. It is a well-known fact that even after our tireless efforts, human decisions are always affected The negative path of your emotions, unlike humans, artificial intelligence machines do No need any type of rest it can work continuously without any hesitation, thus the loss in this works is so less compared to human work.[20] Artificial intelligence has powerful capacity to detect and analyze errors in building energy systems. It has powerful capacity in learning pattern form the available data which make work easy and need less workers and less time.[21] The robotics field is frequently described as a subgroup of artificial intelligence that is related Sensitive and motor functions. A mechanical device robot is a performs automation works, either under and type of human guideline or pre-defined program or general set Guidelines, by the use of artificial intelligence techniques.[22] In this world of big data era, companies and especially fashion companies are facing new type of communication between consumers, competitors and suppliers. Fashion companies have to arrange different types of data complex interactions and uncertainties related to their dependencies and human factors. in order to optimize their decision making It is required for fashion companies to master this flow of data. That's why this new technique artificial intelligence can be profitable for fashion industries.

Challenges or Dis-advantages of AI

[23] scientists have studied and suggested some challenges according to him one of the challenges is the need to establish a new discipline based on human innate ability, a framework for humanities that prepares students to compete in the labor market in which intelligent machines work together with human's professional. Hence the need and challenges of new literacy for higher education: - 1) technological literacy to know how their machines work; 2) data literacy to manage the flow of large volumes of data; 3) Designed to work in human literacy, anthropology, communication and as a human being.[24] Even though school and governments shown great importance to the inclusion of artificial intelligence in industrial English education, most of the ideas are executed on a professional level. The main reason is that when universities hold talent training programs, artificial intelligence recognition and competency training are not really included in professional education, which has affected the development of vocational talent training items[25] The biggest challenge faced by firms and societies is to leverage the benefits of AI technology, to create greater opportunities for both new products / services and vast productivity improvements, and to avoid the risks and disadvantages of rising unemployment and wealth inequality.[26] Some of the main disadvantages of Artificial Intelligence (AI) in our daily lives are.(a)Some time it can be misused leading to mass scale destruction, (b)Creativity is depend upon programmer,(c)Younger generation becomes lazy,(d)Technological dependency increased(e)Human jobs affected, (f)Program mismatch sometime done opposite to the command, (g)Unemployment problem increased,(h) Require a lot of

time and money, (i)Lacks the human touch,[27] some disadvantage of artificial intelligence according to government/economy issue: (a) Equipment is so expensive that is a bit difficult to arrange money to build machines.(b) It can cost lot of cash and times to create repair and rebuild. (c) Robots are replacing humans that's why problems of unemployment are causing.(d) If this technology goes to wrong hands, it can cause lot distraction it is one of the fearin human mind. (e) At the worst-casescenariowhile having internal difficulties it can leak people's personal data to another countries. Or it can delete the whole stored data which could be useful in future.

Conclusion

The modern technique developed by scientists called as artificial intelligence is use full to humans in various ways like in medical field it is used to make new devices that can be used to cure patient and lower the risks of death in lots of conditions and make doctors work easy it also save the date of that particular operation so that the new comers doctors can learn them. In industrial use it is used to lift various heavy loads as well as make new devises according to the data imbedded into them by engineers. It is also used in modern education systems to make the studies easy for the students to learn is has developed various way to make study easier like forming slides, shortening the various large formulas. In security fields human has developed lots of gadgets using artificial intelligence like cctv cameras, various types of automatic guns, satellites that observes whether the enemy military has entered in our border.This artificial intelligence is getting the faster growth as compared to other fields but it is said that the coin has two faces so it also has some disadvantages within it like it is making the human lazy to do any work, due to use of artificial intelligence in various companies lots of people has loosen their jobs, the most danger we have due to artificial intelligence is the other countries are making bad use of this to steal other country's personal data like military power. So in my opinion artificial intelligence is like a miracle that help us to make our life easier but only when we use it properly otherwise it can even make someone's life hell.

References

Aghion, Philippe, Benjamin F. Jones, and Charles I. Jones. 9. Artificial Intelligence and Economic Growth. University of Chicago Press, 2019.

Arivudainambi, D., Varun Kumar KA, and P. Visu. "Malware traffic classification using principal component analysis and artificial neural network for extreme surveillance." Computer Communications 147 (2019): 50-57.

Beck, Joseph, Mia Stern, and Erik Haugsjaa. "Applications of AI in Education." XRDS: Crossroads, The ACM Magazine for Students 3.1 (1996): 11-15.

Benko, Attila, and CecíliaSikLányi. "History of artificial intelligence." Encyclopedia of Information Science and Technology, Second Edition. IGI Global, 2009. 1759-1762.

Bhbosale, S., V. Pujari, and Z. Multani. "Advantages And Disadvantages Of Artificial Intellegence." Aayushi International Interdisciplinary Research Journal (2020): 227-230.

Charniak, Eugene. Introduction to artificial intelligence. Pearson Education India, 1985.

Chen, Hsinchun, and Fei-Yue Wang. "Guest editors' introduction: Artificial intelligence for homeland security." IEEE intelligent systems 20.5 (2005): 12-16

Chien, Chen-Fu, et al. "Artificial intelligence in manufacturing and logistics systems: algorithms, applications, and case studies." (2020): 2730-2731.

Chowdhury, Mashrur, and Adel W. Sadek. "Advantages and limitations of artificial intelligence." Artificial intelligence applications to critical transportation issues 6.3 (2012): 360-375.

Guo, Meng. "Advantages And Disadvantages Of Artificial Intelligence In Business English Teaching."

Horowitz, Michael C., et al. Artificial intelligence and international security. Center for a New American Security., 2018.

Khanzode, Ku Chhaya A., and Ravindra D. Sarode. "Advantages and Disadvantages of Artificial Intelligence and Machine Learning: A Literature Review." International Journal of Library & Information Science (IJLIS) 9.1 (2020): 3.

Li, Bo-hu, et al. "Applications of artificial intelligence in intelligent manufacturing: a review." Frontiers of Information Technology & Electronic Engineering 18.1 (2017): 86-96.

Luckin, Rose, et al. "Intelligence unleashed." An argument for AI in Education 18 (2016).

Makridakis, Spyros. "The forthcoming Artificial Intelligence (AI) revolution: Its impact on society and firms." Futures 90 (2017): 46-60.

McCarthy, John. "What is artificial intelligence?." (2007).

Mogali, Shivaranjini. "Artificial Intelligence and its applications in Libraries." Conference: Bilingual International Conference on Information Technology: Yesterday, Today and Tomorrow, At Defence Scientific Information and Documentation Centre, Ministry of Defence Delhi. 2014.

Reddy, Sandeep, et al. "A governance model for the application of AI in health care." Journal of the American Medical Informatics Association 27.3 (2020): 491-497.

Smith, Nick. "Interview: Automation threatens all our jobs, says Martin Ford." Engineering & Technology 11.2 (2016): 50-53.

Strong, A. I. "Applications of artificial intelligence & associated technologies." Science [ETEBMS-2016] 5.6 (2016).

Tao, Barrios, V. Díaz, and Y. Guerra. "Artificial Intelligence and Education, Challenges and Disadvantages for the Teacher." Arctic Journal 72.12 (2019): 30-50.

Thomassey, Sébastien, and Xianyi Zeng. "Introduction: Artificial Intelligence for Fashion Industry in the Big Data Era." Artificial intelligence for fashion industry in the big data era. Springer, Singapore, 2018. 1-6.

Woolf, Beverly. AI in Education. University of Massachusetts at Amherst, Department of Computer and Information Science, 1991.

Zang, Yaping, et al. "Advances of flexible pressure sensors toward artificial intelligence and health care applications." Materials Horizons 2.2 (2015): 140-156.[9]Winter, Jenifer Sunrise, and Elizabeth Davidson. "Governance of artificial intelligence and personal health information." Digital policy, regulation and governance (2019).

Zhao, Yang, et al. "Artificial intelligence-based fault detection and diagnosis methods for building energy systems: Advantages, challenges and the future." Renewable and Sustainable Energy Reviews 109 (2019): 85-101.