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Artificial Intelligence and its Role in Near Future

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Abstract: ***AI technology has long history which is actively and constantly changing and growing. It focuses on intelligent agents,which contains devices that perceives environment and based on which takes actions in order to maximize goal success chances. In this paper, we will explain the modern AI basics and various representative applications of AI. In context of modern digitalized world, Artificial Intelligence (AI) is the property of machines, computer programs and systems to perform the intellectual and creative functions of a person, independently find ways to solve problems, be able to draw conclusions and make decisions. Most artificial intelligence systems have the ability to learn, which allows people to improve their performance over time. The recent research on AI tools, including machine learning, deep learning and predictive analysis intended toward increasing the planning, learning, reasoning, thinking and action taking ability.Furthermore, it will explore the future predictions for artificial intelligenceto solve it within next decades.***

Keywords: Artificial Intelligence, Data Analytics, Human Intelligence, Scientific Impact, Data Science

1. Introduction

The term intelligence refers to the ability to acquire and apply different skills and knowledge to solve a given problem. In addition, intelligence is also concerned with the use of general mental capability to solve, reason, and learning various situations. Intelligence is integrated with various cognitive functions such as; language, attention, planning, memory, perception. The evolution of intelligence can basically is studied about in the last ten years. Intelligence involves both Human and Artificial Intelligence. In this case, critical human intelligence is concerned with solving problems, reasoning and learning. Furthermore, humans have simple complex behaviors which they can easily learn in their entire life.

1) Which of these and in what level can todays artificial intelligence do?

To-days Artificial Intelligence (robotics) has the capabilities to imitate human intelligence, performing various tasks that require thinking and learning, solve problems and make various decisions. Artificial Intelligence software or programs that are inserted into robots, computers, or other related systems which them necessary thinking ability. However, much of the current Artificial Intelligence systems (robotics) are still under debate as they still need more research on their way of solving tasks. Therefore Artificial Intelligence machines or systems should be in position to perform the required tasks by without exercising errors. In addition, Robotics should be in position to perform various tasks without any human control or assistance. Today's artificial intelligence such as robotic cars are highly progressing with high performance capabilities such as controlling traffic, minimizing their speed, making from self-driving cars to the SIRI, the artificial intelligence is rapidly progressing. The current attention towards portraying the artificial intelligence in robots for developing the human-like characteristics considerably increases the human dependence towards the technology. In addition, the artificial intelligence (AI) ability towards effectively performing every narrower and cognitive task considerably increases the peoples dependence towards the technology.

Artificial intelligence (AI) tools having the ability to process huge amounts of data by computers can give those who control them and analyze all the information. Today, this considerably increases the threat which makes someone's ability to extract and analyze data in a massive way. Recently, Artificial intelligence is reflected as the artificial representation of human brain which tries to simulate their learning process with the aim of mimicking the human brain power. It is necessary to reassure everyone that artificial intelligence equal to that of human brain which is unable to be created. Till now, we operate only part of our capabilities. As currently, the level of knowledge is rapidly developing, it takes only a part of the human brain. As the potential of human brain is incommensurably higher than we can now imagine and prove. Within human brain, there are approximately 100 trillion electrically conducting cells or neurons, which provide an incredible computing power to perform the tasks rapidly and efficiently. It is analyzed from the research that till now computer has the ability to perform the tasks of multiplication of 134,341 by 989,999 in an efficient manner but still unable to perform the things like the learning and changing the understanding of world and recognition of human faces.

2) Where does the human intelligence differ from AI?

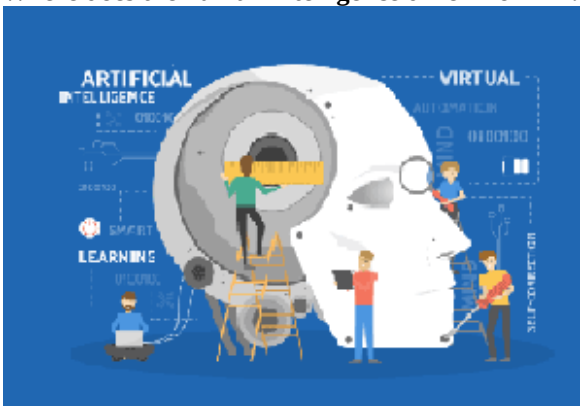

Figure 1: Human Intelligence Differ From AI

Artificial intelligence refers to the potential of computer controlled machines/robots towards performing tasks that that almost or similar to human beings. In this case,

Artificial intelligence is used to develop various robots that have human intellectual characteristics, behaviors, learning from past experience, have abilities to sense, and abilities to making predications and determine meaning of certain situation. Robotic technology is largely trending in the current life which has gained popularity in various sectors such as industries, hospitals, schools, military, music, gaming, quantum science and many others. Artificial Intelligence is an efficient means that make computers and software control robotic thinking with expert systems that significantly illustrate the intelligent behavior, learning and effectively advice users. In general, AI is basically known as the ability or potential of robotics to decide, solve problems and reason. There are various innovations of Artificial Intelligence, for example robotic cars which don't require a driver to control or supervise them. In addition, artificially intelligent technology (robots) involves smart machines that process a large amount of data that a human being can't be in position to perform. By so robotics are assuming repetitive duties that require creativity and knowledge base. Furthermore, Artificial Intelligence (AI) is the combination of various technologies that give chance to robotics to understand, learn, perceive or complete human activities on their own. In this case, Artificial Intelligence programs (robots) are built for a specific purpose such as learning, acting and understating whereas humans intelligence is basically concerned with various abilities of multitasking. In general, an Artificial Intelligence tool is majorly concerned with emphasizing robotics which portrays human behaviors. But however, Artificial Intelligence may fail out at some points due to differences in human brain and computers. In brief, Artificial Intelligence has the potential to mimic human character or behaviors. Furthermore, Artificial intelligence is currently partially developed with-out advanced abilities to learn on their own but instead given commands to act on. This will be the ultimate future of artificial intelligence, where the AI machines will be recognized the human behavior and emotions and will train their kernel as per it.

3) Why cant we tell that todays AI is as clever as human beings?

Generally, there are various paths towards building the intelligent machines that enables the humans to build the super-intelligent machines and provide ability to machines towards redesigning their own programming in order to increase their intelligence level, which is usually considered as the intelligence explosion. In contrast, the shielded human hunt is basically the emotion. The breakthrough of AI technology can frighten the humanity in a way that machine are unable to effectively transmit the emotions. So, there may be possibility that AI can support us with the tasks and functions which usually not involves the feelings and emotion. Till now, AI machines are not able to control their process, for which they need the intelligence and mind of human beings. But AI development with same pace may cause threat to the humanity, because the self-learning ability may cause the AI machines to learn destructive things, which may cause killing of humanity in a drastic way. In general, there exist various characteristics which distinguish human level intelligence with Artificial intelligence and they include the following. Thinking ability; it can be both positive as well as negative because of having emotions, which are not with AI machines. The lack of machines emotion may lead to destructive in a situation where emotions are required. Russell Stuart believes that machines would be able to think in a weak manner. In general, there are things that computers cannot do, regardless of how they are programmed and certain ways of designing intelligent programs are doomed to failure sooner or later. What was later called the Turing Test, proposed that a machine be able to converse before an interrogation for five minutes for the year 2000 and in fact, it was partly achieved. It is concluded then, that the machines can actually think, although they can never have a sense of humor, fall in love, learn from experience, know how to distinguish the good from the bad and other attitudes of the human. Artificial Intelligence: A Modern Approach dedicates its last chapter to wonder what would happen if machines capable of thinking were conceived.

4) Give a comprehensive survey of what can todays AI subfilelds do?

To-days artificial intelligence is creeping into our daily lives by using the GPS navigation and check-scanning machines. The use of artificial intelligence (AI) in business contributes to the potentialization of various areas of daily life such as customer service, finance, sales and marketing, administration and technical processes in various sectors. Undoubtedly, over the next few years, digital efforts will no longer be isolated projects or initiatives in companies, but the adoption of technologies such as AI at all levels and processes of companies will be a reality to increase their competitiveness. AI begins to integrate into the activities of business. It is important to consider that it has not arrived to replace human tasks, but to complement them and allow people to develop their potential and creativity to the maximum. Introduction of new technologies is a tool for the prevention and fight against corruption, the traceability of electronic actions, and the security that surrounds their management favors confidence in management. This essay will prove how artificial intelligence can improve efficiency. The role of this paper is to explore where we are today and what will be the ultimate future of AI technology, if we continuously applied in every field. Further, we will analyses the potential AI techniques and their potential benefits for improving the system.

5) Briefly explain technical background as well?

Artificial Intelligence has facilitated us in almost every field of life and has immense scope in future for more productivity and betterment. The origin of artificial intelligence goes back to the advances made by Alan Turing during World War II in the decoding of messages. The term as such was first used in 1950, but it was only in the 1980s when research began to grow with the resolution of algebra equations and analysis of texts in different languages. The definitive takeoff of Artificial intelligence has come in the last decade with the growth of the internet and the power of microprocessors. "Artificial intelligence may be the most disturbing technology the world has ever seen since the industrial revolution" Paul Daugherty, Accenture's chief technology officer, recently wrote in an article published by the World Economic Forum. This field is now booming due to the increase in ubiquitous computing, low-cost cloud services, new algorithms and other innovations, adds

Daugherty. Developments in Artificial Intelligence go hand in hand with the development of processors that over time have made them start to see these technologies as intellectual, even changing our idea of intellect and forthcoming the perceptions of 'machine', traditionally un-intelligent capacity previously assigned exclusively to man. The AI was introduced to the scientific community in 1950 by the English Alan Turing in his article" Computational Machinery and Intelligence." Although research on the design and capabilities of computers began some time ago, it was not until Turing's article appeared that the idea of an intelligent machine captured the attention of scientists. The work of Turing, who died prematurely, was continued in the United States by John Von Neumann during the 1950s.

McCulloch (1950) formulate a radically different position by arguing that the laws governing thought must be bought between the rules that govern information and not between those that govern matter. This idea opened great possibilities for AI. In addition, Minsk (1959) modified his position and argued that imitation of the brain at the cellular level should be abandoned. The basic presuppositions of the theoretical core of the AI were emphasis on recognition of thought that can occur outside the brain

6) What is missing to todays AI still to be called human level intelligence?

Humans are different from Artificial Intelligence machine physically in a sense that human race usually experiences the same physical features while the machines takes several forms and shapes. The trans-humanist vision analysis exhibits us to believe that brains are principally the computers. AI reports are the silicon based machines, which was con-trolled by using the algorithm that reinforces entire internet business. AI believes that once the computers have adequate advanced algorithms, then they will be capable to replicate and enhance the human mind.

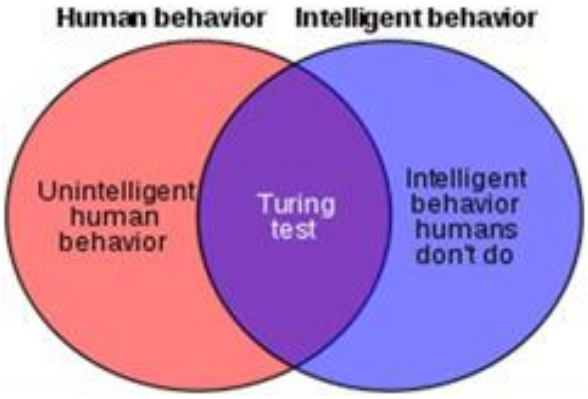

Figure 2: Turing test

This algorithm will not essentially result in the AGI but may also lean towards applied artificial intelligence. The algorithm tuned through Turing process can also significantly define and passed it.

Eugene Grossman Test; Grossman tests the Turing test and concluded that it has 33% fooling, which intended him to propose test that should rely on AI in order to efficiently solve the particular tasks that was quite near to AGI. He also concluded that it is not possible for AI machines to be much efficient than that of human because their always acts human actors to work the AI machine.

7) Importance of artificial intelligence

Artificial Intelligence will revolutionize the way in which different companies across compete and grow across the world by representing a new production factor that can drive business profitability In order to realize the opportunity of AI, most the companies in the world are already developing actively in various Artificial Intelligence strategies. In addition, they should focus on developing responsible AI systems aligned with ethical and moral values that lead to positive feedback and empower people to do what they know best such as innovation. To capitalize on this opportunity, the study identifies eight strategies for the successful implementation of AI that focuses on adopting a human-centric approach and taking innovative and responsible measures for the application of technology to companies and organizations in the world. The construction of intelligent machines in various industries presupposes the existence of symbolic structures, the ability of them to demand and the existence of knowledge (raw material). Once artificial intelligence has intelligence equal to or greater than man's, political and social change will inevitably arise, in which AI has all the advantages of gaining if it realizes that it does not need humans to colonize the universe. Recent advancement in artificial technology depicts orbiting communications satellites in the space with its 486 processors. In the future, self-replicating artificial intelligence could easily be made with all human colonies outside the earth, and the human race will never be able to fight in the empty space on equal terms.

8) Knowledge based towards understanding the natural language

The most significant characteristics of the natural language are that it has the ability to serve as its particular meta-language. It is easily possible to utilize the natural language in order to provide instruction in the use as well as describe the language itself (Weston et al., 2015). It is because, human usually capable to utilize their natural language to describe about natural language itself. The advancement in the natural language understanding significantly provide effective educable cognitive agent role whose task domain contains the understanding of language and whose discourse do-main contains the knowledge of their own language.

9) Spatial frames of reference computation for narrative text understanding

This AI technique provide the spatial references which explicitly build in order to indicate on how the reference frame should be established and provide the determination of burden of its determination is left to the hearers or the readers inferences. Its also intended towards developing heuristics which significantly aid for dynamically computing of reference frames. The control inference engine is applied in several distinct rules levels on the image data for blocks identification. The lowest rule level is the knowledge rule that examines the intrinsic blocks properties. The strategy rules determine whether the constant image interpretation has been achieved or not.

The cognitive letter recognition model; it is based on the feature models utilization. Within the acquisition time, the letters is subjected towards developing the object oriented quad tree model. In general, all of the acquired letters are integrated into object knowledge, similar quad tree and density values. At the time of recognition, the densities and quad tree analysis of the current letter are related to store quad tree density.

10) What are open challenges?

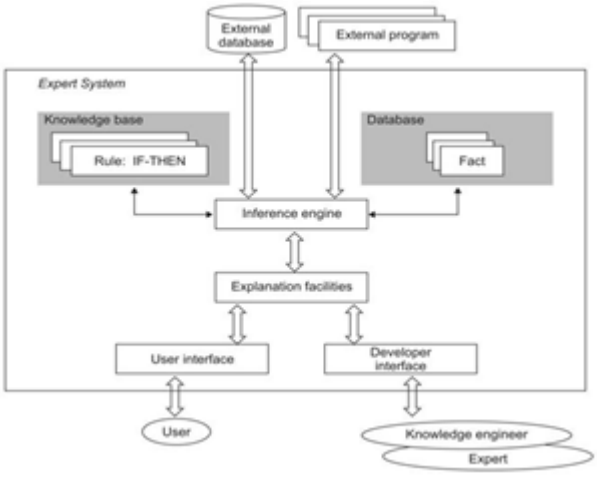

Figure 3: Rule-based expert system structure

Challenges of AI technology include the following. Within near future, the artificial intelligence goals were to affect the society from law and economics in several technical terms including security, verification, validity, and control. The major short-term threats of Artificial Intelligence include the devastating race of arms in fatal autonomous weapons and full dependence of our life on technology will eventually lead to unemployment problem, social discrimination and power inequality in societies. Long term use of robotics will create a big challenge includes to human beings as they will take over the world. In addition, with in a given period of time, AI will become better in solving tasks compared to human beings hence loss of jobs. For example drivers will be ruled over by robotic cars, tellers will be out competed by robotic tellers and many others. As a result of Artificial Intelligence out competing humans will create a big challenge on human thinking. But in the positive side, the AI technology advancement can also considerably aid for eradicating the disease, war and poverty level. Rapid research of Artificial intelligence in robotics is reflected as the large existential threats that are faced by the humanity. Artificial intelligence is simply the next wave of automation, which considerably allows the machines to do tasks that previously required attention and human intelligence. In the short term it can replace people, but above all, it changes the nature of the work that humans do. In the long run, automation creates more and different types of jobs, which is why not everyone has jobs today. Further, challenges include the large dependence of people towards technology for their work. This considerably increases several psychological, physical and mental issues. In order hand, it considerably reduces the unemployment, economic and power balance and disability. It is believed that until the end of 2021, there will be the beginning of a disruptive tidal wave of artificially intelligent robots in our daily life, such solutions powered by cognitive or artificial intelligence technology will significantly displace the jobs, with the great impact felt in logistics, transportation, consumer services and educational process. Furthermore, it can considerably increase the privacy, security and authenticity issues within the society.

11) What are solution suggestions?

To reduce the destructive effects of AI, it is essential to develop the symbolic approach, which should allow us to operate with weakly formalized representations and their meanings. The success and effectiveness of solving new problems depend on the ability to allocate only essential information, which requires flexibility in the methods of abstraction. While a normal program sets one's own way of interpreting the data, which makes its work look prejudiced and purely mechanical. The intellectual task, in this case, solves only the person, the analyst or the programmer, not knowing to entrust this machine. As a result, a single abstraction model is created, a system of constructive essences and algorithms. The global nature of artificial intelligence risks if fails to transfer the ethical goals then it's absolutely reasonable to estimate the longer-term AI research risks as even larger than those of climate change. It is also essential to adopt effective information system which should be established in order to effectively improve the artificial intelligence safety by initiating the awareness on the experts working part on AI, decision-makers, and investors. The risks information integrated with AI progress should also have to understandable and accessible for the broad audience. In addition, it is also instigated to adopt the AI safety tools in order to reduce the authentication and security issues. It is also essential to develop an effective global coordination and cooperation system in order to build the competitive environment in which the dangerous race of artificial intelligent arms should be reduced. It is believed that although the future of artificial intelligence has a tremendously beneficial impact on the economy and daily lives of Americans still it increases the issues related.

12) What are future predictions for AI?

There is a great increase in the discussion about the importance of AI in the recent time leading to future discussions about the existence of Artificial Intelligence in the world. The idea of creating AI is aimed at making human life easier. However, there is still a big debate about advantages and disadvantages of AI in the whole. With the introduction and successful implementation of Artificial Intelligence (AI) solutions, many industries in the world are and will benefit from increased profitability and will still have good economic growth rates. In addition, artificial Intelligence opportunities will be aiming at innovative. So as to realize such opportunities, it will require most of the companies in the world to become more active in the development. Construction of various Artificial Intelligence systems will help the entire world to industrial sector to presuppose the available symbolic structures such as, the ability to reason and also knowledge existence. In addition, at the time Artificial Intelligence acquires intelligence greater or equal to that of human beings, there will be a concern about social and political change.

13) Which levels will it reach and which issues will be solved in next decades?

In this case, it is more likely that Artificial Intelligence innovations will strongly emerge in conceivable future. In next decades, the future of AI will be concerned on improving speech, voice, video conferencing and face recognition. Further, Artificial Intelligence will aid for providing the personal assistances and fully automate systems, which will provide assistance in monitoring and surveillance, performing heavy workloads and many others. In addition, the future of Artificial Intelligence technology such as robotics will be ensuring self-driven cars, delivery robots and many others. With the great improvement in computer versions and legged locomotion, the robots within environments will become more practical hence helping in agriculture and other service settings. In addition, the robotics will improve on the service delivery hence reducing domestic chores. The development of search engines will lead to significant synthesize and improvement of the quality of information. Furthermore, Artificial Intelligence tool will improve the medical and bio-logical system hence reducing the complexity and volume of information challenges concerned human abilities. Artificial intelligence will be used in the algorithm that materializes various systems and programs. Artificial intelligence will consist of specific hardware and software which intends to imitate the way of human brain performance. Recent research on AI considerably provide the potential effects on organization and industries, for example, the AI technology will be aiming at improving the area of data science to almost 9.6%, business intelligence to 7.8%, patient and health care to about 6.3%, speech recognition 5.3%, computer vision 5.6%, improve defense and aerospace system to about 5.3% and natural language processing to about 5.1%. The role of Artificial Intelligence tools on product manufacturing operations will lead to toward employment, flexibility and responsive chain of supply.

2. Conclusion

In this way, artificial intelligence can achieve great discoveries and advances for humanity due to its multiple possibilities. Most artificial intelligence systems have the ability to learn, which allows people to improve their performance over time. The adoption of AI outside the technology sector is at an early or experimental stage. The evidence suggests that AI can provide real value to our lives.AI bases its operation on accessing huge amounts of information, processing it, analyzing it and, according to its operation algorithms, executing tasks to solve certain problems.

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