



ARTIFICIAL INTELLIGENCE FOR NEXT GENERATION WIRELESS NETWORKS

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Abstract

Human brain is such a wonderful creation of god. No other object can perform and replace like human brain. In fact, there is no substitute for human intelligence. As the rule that change is inevitable, global changes have agitated people. Man is turning to new technologies to solve problems. Technological revolutions have made our life easier than ever. Artificial intelligence is a branch of computer science. It has attracted all the scientists in the world towards it. It is making strides in all fields and has also made its mark. Artificial intelligence is a branch of computer science. It has attracted all the scientists in the world towards it. It is making strides in all fields and has also made its mark. There is no denying the adventures that the world will experience with the use of artificial intelligence. It is a scientific question whether it is possible for artificial intelligence to work at par with human intelligence, human mind and consciousness. What is the theory behind artificial intelligence? How can it give its response to stimuli..? Can he do the assigned work for so much? It needs to be known practically. A lot of people around the world don't understand about artificial intelligence due to some misconceptions and lack of technical mindset. It is a comprehensive tool that improves data analysis Information, integration and decision-making processes.

Key words: *Computer Arena, Artificial intelligence, Robotics, Machine learning, Future perspectives*

Introduction

Artificial intelligence (AI) is a new type of computer technology, which is a system developed by computer systems. It is a rare intellect with an intellectual capacity equal to and beyond that of a human. Abilities like solving complex problems, data analysis, reasoning, discovery, systematic task management etc. still distinguish it. Artificial intelligence (AI) is committed to introducing machine learning and dimensions to understand people's attitudes. We can expect more and more progress and development as artificial intelligence has the potential to grow even more scientifically and technologically in the near future. So far many researchers, authors, technologists have published scholarly chapters and articles on the subject of artificial intelligence and I hope this article can also be a small contribution to the field of artificial intelligence. In this chapter, Artificial intelligence is illustrated in deep manner. This research chapter of mine also provides a thorough review on Artificial Intelligence related fields and topics. Artificial intelligence will one day surpass human intelligence by performing tasks such as machine learning, language processing, data management, robotics, technical analysis, recognition, communication, and more. Computer technology supports processes like digitization, learning new concepts, machine learning, etc., which is again a major change in this field, creating many job opportunities.

Concept and Definitions

Specifically, it is a machine computer-driven intelligence capable of self-directed reasoning, decision-making, and machine vision. According to a *Toolbox survey*, 42% of tech professionals are of the opinion that artificial intelligence will be the biggest overall technology trend in the coming days. AI is one of the newest branches in science and engineering. It is presently includes a variety of subfields



like learning, playing games, mathematical theories, diagnosing the diseases. (Stuart Russell and Peter Norving, 2015, *Artificial intelligence a modern approach P, 1*). Today artificial intelligence is embedded in every aspect of every field. Autonomous machines, trains, cars, industrial applications, virtual chat bots, etc. Again, artificial intelligence and robotics are *buzz* words. Software algorithms and machine learning have facilitated artificial intelligence. John McCarthy, 1956 (he often called as father of Artificial intelligence) defined Artificial intelligence as “The science and engineering of making intelligent machines. According to Nilsson, Artificial intelligence is concerned with intelligent behavior in artifacts. Stephen Hawking states that “the development of full artificial intelligence is said to be the end of the human race”. According to Lee & Doo (2007) “Artificial Intelligence (AI) combines various intelligent behaviors, mentalism, mental reasoning, communication understanding, learning, thinking, design, recognition, memory, and perception”.

Objectives of the chapter

In this world, researches and research articles are of utmost importance. The main purpose of composing scholarly research articles are, contribute the researcher's new and different research output to the ocean of knowledge. Features or characteristics of scholarly research articles are, they draw a readership towards them and keep reading in a single series, increase the rationality and criticality in readers, providing a forum for rich and critical discussions and ultimately developing an intellectual maturity in them. The main objective of this chapter is to get deep insight into the concept of artificial intelligence and illustrate the uses and importance of artificial intelligence (AI) for the next generation.

Special features of AI

Artificial intelligence and recognized by its own features

1. **Natural language system (NLS):** A natural language system is able to understand human language. With the help of programs, it is possible to understand language and numbers like the human brain.
2. **Robotics:** Robotics is a computer technology capable of performing actions similar to human intelligence. Developing robots with innovative technology and their commercial use is increasing in every field.
3. **Cloud computing:** A common feature of artificial intelligence is cloud computing. Data is stored in physical form. Because of cloud computing, large chunks can be stored in the cloud system.

Forms of Artificial intelligence: Artificial intelligence can be classified as follows on the basis of their operation. These include machines that operate based on current information.

1. **Narrow or weak intelligence:** This is also known as weak artificial intelligence. At this stage the machine has no thought capacity.
2. **Artificial general intelligence:** This type of machine intelligence has the ability to think and make decisions like humans. With the help of this type of machine intelligence, machines can be created that think like humans and make quick decisions. This type of machine intelligence is capable of human-like thinking and decision-making. Thus, with the help of machine intelligence, machines can be created that think like humans and make quick decisions.
3. **Artificial super intelligence:** It is an intellect that surpasses human intellect. Machines can rule the entire world with the dominance of this intellect e.g. mechanical fiction films.
4. **Reactive machine:** It contains temporary memory which can be used to provide feedback for future actions.



5. **Limited memory:** It includes temporary memory. This memory can be used to respond to future Actions.
6. **Theory of mind:** This type of intelligence is very beneficial in psychology. It is possible to calculate the ideas of Man by its use. Artificial intelligence machines have superior intelligence in this category. If machines have self-awareness and emotions, human existence may become untenable.
7. **Self-awareness AI:** Artificial intelligence machines have superior intelligence in this type of intelligence. If machines have self-awareness and emotions, human existence may become untenable.

Differences and relevance between Artificial intelligence and Robotics

Today, everyone from the little ones is watching robots in movies. We can observe extraordinary cleverness showing off and giving rise to fantasy scenes. What we need to note here is that both artificial intelligence and robots are different. So it is good to clarify about Robotics and Artificial intelligence. Robots are physical agents that perform tasks by manipulating the physical world. To do so, they are equipped with effectors such as legs, wheels, joints, and grippers. (*Stuart Russell and Peter Norving, 2015, Artificial intelligence a modern approach P, 971*). Robotics is a comprehensive field of science and technology that performs and performs these unusual tasks. A robot is a program set to work or perform a series of tasks, and is a machine. Artificial intelligence (AI) deals with creating programs and performing tasks like human intelligence. (*Georgina Lukanova, Galina Ilieva, Robots and artificial intelligence*). Artificial intelligence (AI) also uses reasoning, learning and understanding. Artificial Intelligence is being implemented and used in all sectors across the globe. By adopting artificial intelligence, work is being done even in situations where humans are unable to perform. World's biggest companies like Google, Amazon, Face book, Apple, Microsoft, and Alphabet have adopted this artificial intelligence for their work simplicity and goal achievement. Artificial intelligence is a science of computers that is becoming more and more enticing as we know it, drawing us deeper into it, such as finding and adopting innovation.

Usages of AI

AI is very useful, because any business organization needs an internal view to function smoothly. Artificial intelligence is very useful in many situations. It enables it to compete better than other competitors in the market. Artificial intelligence can perform tasks many times better than humans in aspects such as data, information analysis, data processing, descriptive analysis, error-free performance, verification, appropriate decision making, etc. The common question may be arising that, what all artificial intelligence can do? *Stuart J. Russell Peter and Norving* has given a beautiful answer for this question. He writes in his book *Artificial intelligence A Modern approach P. 28-30*. Robotics vehicle, speech recognition, autonomous planning and scheduling, game playing, spam fighting, logistic planning and machine translation. Today's world is very competitive. Competition has grown unimaginably in all fields. Artificial intelligence emphasizes its adoption in the industrial environment for organizations and enterprises to fend off competition, meet goals and objectives. *A.S Kurzweil (2005)* states that today, many thousands of AI are deeply embedded in the infrastructure of every industry. Every company needs to introduce machine learning and dimensions to understand people's attitudes to provide quality services, to ensure better quality services to its customers, viz. Ola cabs, Google etc.



Scope and applicability of AI

The scope of artificial intelligence is very broad. It has grown to such an extent that it is difficult to imagine any field other than artificial intelligence. Finance from home. Global technologists, AI experts, professional and organizational experts, experts from the corporate sector have given a lot of opinions on the applicability and adoption of AI. Applicability of AI in every field currently available, analysis and demonstration of innovation, adoption, problem solving, adaptation etc. can be the best trends. A wide range of applications can be seen in areas such as business, commerce, industry, home, education, agriculture, finance, aerospace and rocket science (unmanned rockets, drones, missiles and warplanes for human benefit, space launch and space travel), railway technology, transport connectivity, health care, etc., and software-based Q&A conversational translation. Thus, we can imagine the application and inclusion of artificial intelligence in all the emerging fields in the future. In the coming years, the use of AI across the world will increase in counter fields, resulting in billions of business transactions through artificial intelligence technology.

AI is unmatched in many respects. But a disadvantage is that it may not be very emotional like a human or it may be emotionless. In many existing and futuristic business, the decline in human skills, performance and efficiency in business transactions has opened the new door of opportunity for Multitasking machines and artificial intelligence. Application of artificial intelligence in social, economic, health care, law, cyber law, transport connectivity, and more, policies, governance, moral responsibility, protection of technological values at Global level, cyber security etc.

1. To giving more importance to digital education.
2. To carrying out more research in the field of artificial intelligence.
3. Presentation of principles, techniques and theories in related fields.
4. Monitoring, control and management.

Future growth and perspectives

Technological revolution can be said to be one of the most important revolutions of the 21st century. When is the progress in science and technology..? Where..? How..? It is very difficult to say that it will come. It is the result of technological, scientific, innovation initiatives. The reality of artificial intelligence is inevitable and necessary in future developments. As industry and businesses grow the adoption and use of modern technologies and artificial intelligence to streamline internal operations is intensifying. It is a reflection of internet of things (IOT), robotics, big data and other technologies. Artificial intelligence is making its strides even in emerging fields by adopting technological innovations at every stage. This artificial intelligence is closely related to fields such as scientific, technical, social, medical, etc. to generate large-scale information and influence through innovative technologies. Artificial intelligence is spreading like a virus across the globe, and we all must have experienced its enormity. Today, with the help of artificial intelligence, world-shattering achievements are being made. It is the innovation of industrial technology. Solutions to complex problems can be found in the field of science and technology. Digitizing business processes by adopting artificial intelligence in business areas in enterprises. Artificial intelligence can have its own impact on digitization and infrastructure development in industrial sectors. Replication of probabilistic values, and modern development, validation of predictions, Internet searches on phones, applications, gaming systems in the wake of the arrival of the 6th and 7th generations.

Human beings can be created artificially according to human imagination, filled with mind and nature, action-processes like human. But it can be said that the philosophy and morals of mankind have been hidden by such methods. Communication, perception, learning, reasoning, reasoning ability,



comparative bases, mathematical theory and sources, tools, methods, in fact intelligence along with human behavior and nature are attempted. Artificial intelligence has again emerged as an essential part of any industry. Almost all industries and industries are adopting artificial intelligence to provide faster, more accurate and better services. It has emerged as one of the most important themes of the late 21st century. The role of artificial intelligence in reshaping the new social and economic is very important. A closer look at the changes taking place in the industrial, organizational and service sectors reveals that artificial intelligence and robotics are deeply rooted. This may allow redefinition of individual zones. As many scientists, technologists and geniuses have already mentioned, this can lead to disruptive and destructive developments. New theories, practices, models, strategies, are integrated into economic and business development processes. Desired changes are also taking place in public arenas. Artificial intelligence provides insight into goal-oriented, results-oriented, research-based innovation. It can be said that artificial intelligence and robotics are the fields that are being researched more and more.

Artificial intelligence has different approaches and applications in following social sciences, pure sciences, life sciences and applied sciences. Namely, in hierarchically, sociology, social work, education, economics, law, anthropology, political science, psychology, geography, chemistry, biology, zoology, physics, anthropology, botany, zoology, microbiology, bio technology, genetics, neuroscience, engineering, mathematics, technology, research and development. Through application and pragmatism there has been a change and excitement within and beyond these fields of knowledge.

The contribution of artificial intelligence in the fields of science and technology, medical and engineering, aerospace and industrial technology is immense and it cannot be ignored.

1. Cyber security

Cyber Security Artificial intelligence is becoming the most widely used in the field of cyber security. With the rise in online crimes across the world, there is a huge demand for artificial intelligence. Engineers, scientists, are recommending adoption of state-of-the-art artificial intelligence in every cyber organization. Artificial intelligence can help detect crimes, understand the exact nature of crime and provide security against them.

2. Communications

The use of artificial intelligence in the field of communication is important. It helps generate verbal, visual and other information through natural language processing.

3. Automated business process

The use of artificial intelligence is becoming increasingly important in many organizations, businesses and entrepreneurs. Artificial intelligence is helpful in making every activity and process efficient, such as recruitment, manufacturing, marketing technology, economic development, and other aspects of business. To reduce work stress for employees in workplaces, increase in productivity and efficiency, adoption of digital technology, enhancement of automated environment processes.

4. Ethical AI

It speaks to the ethical quality of artificial intelligence. There is a need to think about how artificial intelligence can provide services to large organizations with ethical commitment.



5. AI for Good

Here, Ensuring Artificial Intelligence to Achieve Global Betterment is important task. Technologically, every organization is calling for automated artificial intelligence adoption. Solving problems and creating a healthy environment is encouraging technology use. The technological use of artificial intelligence is essential in every field.

6. Health care and AI

Global usage of artificial intelligence robotics in the healthcare sector is expected to be high. The use of artificial intelligence robots has become widespread for better patient care, time saving, monitoring of patients and records, diagnosis and treatment, emergency treatment, operations, and handling high workloads. It provides complementary assistance to doctors, patients and staff in the hospital setting. The use of artificial intelligence in the healthcare sector is multifaceted. Health care, therapy, nursing, uses robots for the purpose of operations, personalized and person oriented services etc. we need to introduce the all concepts of artificial intelligence to all persons in the healthcare field.

Contribution and advantages of AI for the changing world

Despite the global change, technological revolution, and changes most people are not very familiar with the concept of artificial intelligence. Many people do not have a clear understanding of its application in industrial and business sectors and how to utilize its contribution to the development of the industrial environment. However, artificial intelligence is a series of technology that can bring about change in almost every sector. Artificial intelligence is carried out through machine learning, data analytics etc. Artificial intelligence systems have the ability to adapt according to the situation. Functions are Navigation, determinants and integrators. Application in drones and intelligence agencies, detection of crimes and finding handwriting, determining the ability of machines to perform tasks, systematic reasoning, clear prediction of future situations, driving a car like a human, searching web series, launching a spaceship, being able to act consciously etc. Technology, scientism can only understood when measured on the foundation of logical consensus and the difference and philosophical gap between artificial intelligence and human intelligence. It includes technologies that can predict future events and avoid risks. For example, vehicles, transport links, railways, airlines etc. can give drivers advance warning about possible traffic and hazards. Unmanned vehicles, drones and railway, aircraft are proof of this.

AI expected to bring changes in all aspect of society, including science. *Gozde ozsezer, (2022)*. The world is experiencing change in areas like, social, economical, political, cultural and technological. (*Gozde ozsezer, 2022, The Future of Artificial intelligence in nursing*). Whether we know it or not, we are living very closely with artificial intelligence in the ups and downs of our daily lives. This may have come to our knowledge a few times. Virtual assistant's, Chat bots and other tech support methods are useful to us in many situations. Artificial intelligence coupled with technology will be an integral and inevitable part of our daily lives. It will certainly lead the society and the country to a higher level.

We can identify the advantages of AI as follows

1. Minimization of human errors
2. Improved health care services
3. It oversimplifies life.
4. Accuracy of whether forecast
5. Increase trade and turnover
6. Personalized and centralized shopping systems
7. Defense system of the country including space.



Key findings

1. In this 21st century, AI is a part and product of technological revolution. It is occupying step by step in all the sectors of society.
2. Some special features and benefits of AI are speed, accuracy, deeper security, productivity, time saving and cost saving, environmental and human friendly.
3. Ethics of AI remains much talked and controversial at global community level.
4. AI is not only helping in reaching the goals of an organization, but also helps in rapid revenue growth.
5. AI in race has benefits along with adverse effects.
6. AI works with supportive to human and helps to solve complex problems.
7. From a research perspective, developed countries are in global frontrunner in AI, and consequently, that helps to technological development and research.
8. All sectors and industries are trying to adopt AI as their initiative, ranging from education, finance, defense and healthcare.
9. Most of scientists and technological experts (Elon Musk, Stephen Hawking) believe that application of AI is threaten to humanity.
10. Whatsoever the matter is, the supervision of human is essential.

Conclusion

It is literally true that artificial intelligence is transforming the entire world. It is a collection of technologies. There is no doubt that artificial intelligence can think, learn and perform tasks like humans. We see him in superhuman form. Any item that comes to the market has its own qualities and characteristics. With the use of artificial intelligence, even tasks that are difficult for humans can be easily performed. It is a technological leap beyond human imagination. World geniuses such as *Stephen Hawking* and *Elon Musk* have spoken about its dangers in the future. He warns that artificial intelligence is the biggest fear for civilization that one day it may overtake us and threaten us.

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