International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 03 | March - 2023 Impact Factor: 7.185 ISSN: 2582-3930

Artificial Intelligence

Authors: Sudesh Niungare

Abstract :

The term artificial intelligence(A.I.) broadly refers to applications of technology to perform tasks that resemble human function. It is generally defined as the capability of a machine to imitate intelligent human behavior. The purpose of this article is to educate people about AI and motivate them to make use of it as a tool in many disciplines to rethink how we combine data, analyze it, and make choices.We quickly covered what artificial intelligence is, how it works, and how we can applied in our daily lives.

Introduction :

Artificial Intelligence is a method of making a computer-controlled robot, or a software think intelligently like the human mind. AI is accomplished by studying the patterns of the human brain and by analyzing the process. The outcome of these studies develops intelligent software and systems. In 1956, John McCarthy coined the term ‘artificial intelligence’ and had the first AI conference. In 1969 Shakey was the first general-purpose mobile robot built. In layman's terms, intelligence is the computational component of one's capacity to attain goals in the real world. Intelligence is defined as the capacity to think, envision, memorize, and comprehend, see patterns, make decisions, adapt to change, and learn from experience. Artificial intelligence is focused with making computers behave more human-like and in a fraction of the time i As a result, it is known as Artificial Intelligence.t takes a person to do it.

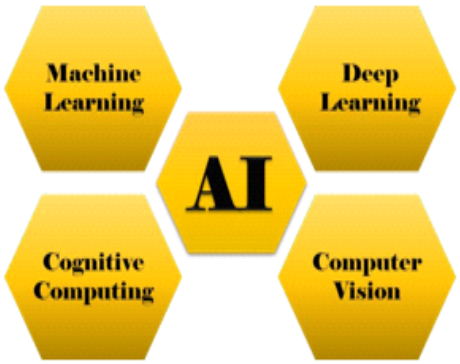
OVERVIEW OF AI

Software intelligence is referred to as artificial intelligence. Understand+ Analyze + React = Intelligence. Artificial intelligence is a subject of information technology and computer science that is swiftly gaining popularity since it has improved human existence in a variety of ways. Artificial intelligence has substantially enhanced the performance of manufacturing and service systems during the previous two decades. Expert systems are a fast emerging technology that originated from artificial intelligence research. Intelligent machines will replace human capabilities in many sectors in the future.

WORKING OF AI

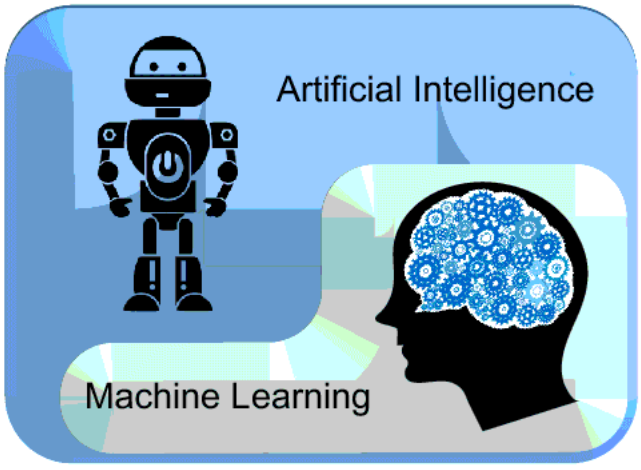
AI works by combining large amounts of data with fast, iterative processing and intelligent algorithms, allowing the software to learn automatically from patterns or features in the data. AI Engineering is a field of research and practice that combines the principles of systems engineering, software engineering, computer science, and human-centered design to create AI systems in accordance with human needs for mission outcomes. his method, however, overlooks one of artificial intelligence's most important practical applications: analyzing the massive volumes of data created every day. Insight gathering and job automation

may be done at a previously inconceivable velocity and scale by carefully applying AI to particular activities. AI systems execute sophisticated searches through the mountains of data generated by people, deciphering both text and pictures to detect patterns in complicated data and then acting on their findings. Computer systems that can grasp the meaning of human language, learn from experience, and make predictions, thanks to cutting-edge technologies.



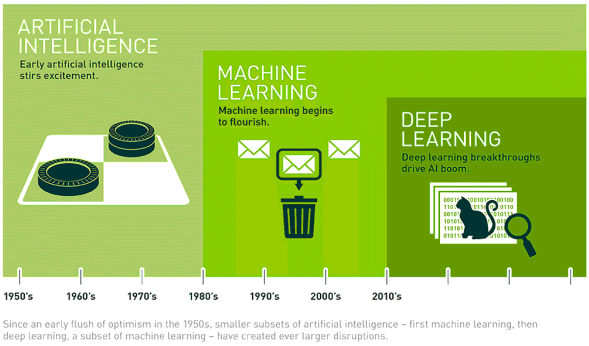
Machine learning

Machine learning is a branch of artificial intelligence (AI) and which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy. Machine learning is being utilized in the healthcare, pharma, and life sciences sectors to improve illness detection, medical picture interpretation, and medication acceleration, in addition to predicting what Netflix movies you would like.



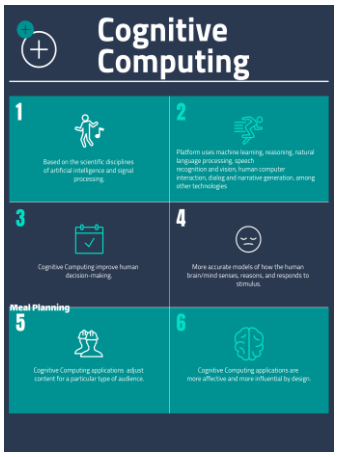
Deep Learning

Deep learning is a subset of machine learning, which is essentially a neural network with three or more layers. These neural networks attempt to simulate the behavior of the human brain and allowing it to “learn” from large amounts of data. The machines learn by receiving positive and negative reinforcement for the tasks they perform, which necessitates ongoing processing and reinforcement in order for them to advance .



Cognitive Computing

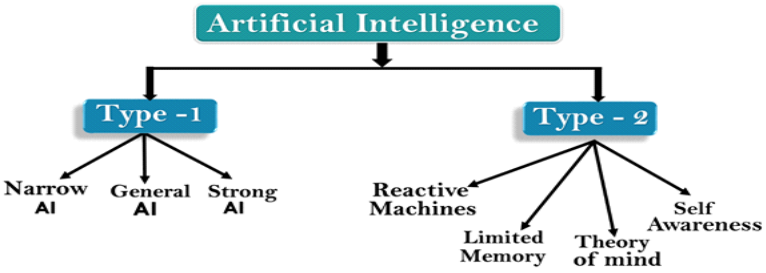
Cognitive computing is another important component of AI. Its purpose is to imitate and improve interaction between humans and machines.Cognitive computing is the use of computerized models to simulate the human thought process in complex situations where the answers may be ambiguous and uncertain. Another form of deep learning is speech recognition, which enables the voice assistant in phones to understand questions like, “Hey Siri, how does artificial intelligence work?”



Computer Vision

Computer vision is a field of artificial intelligence (AI) that enables computers and systems to derive meaningful information from digital images, videos and other visual inputs — and take actions or make recommendations based on that information. This technology's applications have already begun to transform areas such as research and development and healthcare.

TYPES OF AI



Type-1: Based on Capabilities

- **Narrow artificial intelligence** : Narrow AI is a specific type of artificial intelligence in which a learning algorithm is designed to perform a single task, and any knowledge gained from performing that task will not automatically be applied to other tasks.

- **General artificial intelligence** : It is a sort of intelligence that is capable of doing any intellectual work as well as a human. The goal of general AI is to create a system that can learn and reason like a person on its own. Currently, no system exists that can be classified as general AI and execute any work as well as a person.

- **Strong artificial intelligence** : Aims to create intelligent machines that are indistinguishable from the human mind. But just like a child, the AI machine would have to learn through input and experiences, constantly progressing and advancing its abilities over time.

Type-2 Based on Functionality

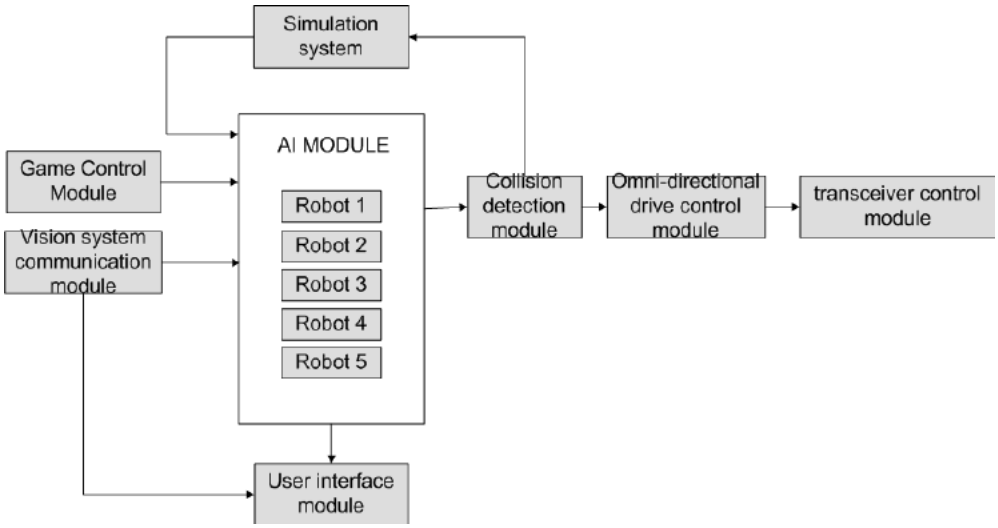
- **Reactive Machines**: The most basic kinds of Artificial Intelligence are pure reactive robots. Such AI systems do not keep track of memories or previous experiences in order to make decisions in the future.

- **Limited Memory**: This sort of AI, like Reactive Machines, has memory capabilities, allowing it to leverage prior data and experience to make better judgments in the future.

- **Theory of Mind** : While the first two categories of AI have been and continue to be abundant, the next two types of AI exist only as an idea or a work in progress for the time being. The next level of AI systems that researchers are actively working on is theory of mind AI.

- **Self-Awareness**: This is the last step of AI development, which exists only in theory at the moment. Self-aware AI is an AI that has matured to the point where it is so similar to the human brain that it has gained self-awareness.

AI SYSTEM ARCHITECTURE

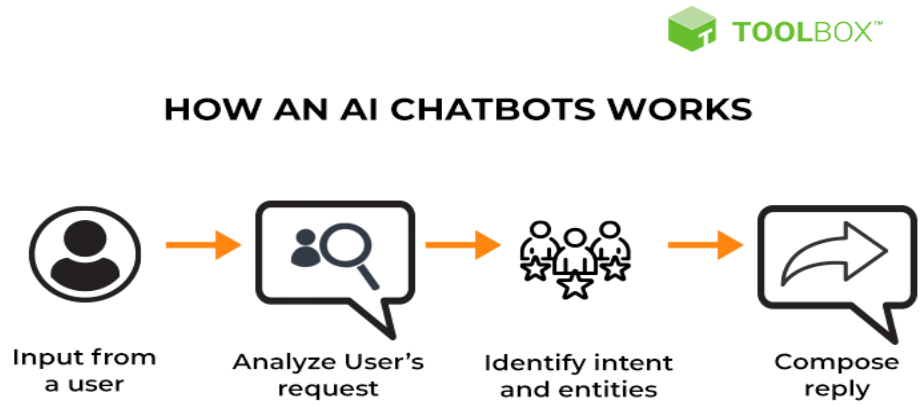


The core concept of AI is the use of algorithms to analyze data and generate models to describe it in ways that are useful. Algorithms are written by developers and data scientistsusing programming code.

APPLICATIONS OF AI

There are many ways in which the average technology consumer interacts with artificial intelligence technologies in their daily lives, but most people don't realize what technologies actually use AI. Here are a few examples of artificial intelligence technologies that many people encounter in their lives.

Chat bots: If you've ever come across a chat bot on a website or social media messenger, it is powered by AI. Chat bots are one of the more simple examples of AI, since they are simply coded to send messages based on rules about how they should interact with users. Sort of an "if this, then that" type of programming.



Conclusion :

While concluding, it can be analyzed that AI has benefited computer science because it is the artificial psychology that made the machines to focus on the philosophical arguments. AI performs tasks faster than human beings and the major goal of artificial intelligence is to create the technology in an intelligent manner. It is proved that artificial intelligence is the computer knowledge that has human traits, however, these computers and robots help the environment to grow, and they respond rationally to help human beings. AI has already impacted lives of people in various fields and will surely continue to do more in the future.

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