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Abstract:

Artificial intelligence is a branch of computer science, which develops such machines who thinks and works same like humans. When we prepare a system who can perform all human activities are called artificial intelligence or we can say when a computer is programmed in such a way, so that it can perform all human tasks are called artificial intelligence. Intelligence power in human beings comes by thinking, seeing, touching & learning by previous experiences and intelligence in computer systems is developed through which Robotic system or computer system is prepared. The term Artificial intelligence was introduced by an American scientist John McCarthy. Artificial intelligence is called as our future but if we observe AI is our present because already we have started using AI Application in our daily routine for our convenience. For example Siri, Alexa Device, Google map, Google assistance etc. are the best examples of Artificial Intelligence. In this research paper we will discuss in detail about AI its types and real life application which is currently in use.

Keywords: Artificial Intelligence, Machine Learning, Technology, Innovations.

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Introduction:

Artificial Intelligence is one the top trending technology. In Computer Science Artificial intelligence is also called as Machine Learning but Machine Learning (ML) is a part of Artificial Intelligence. Human increases their intelligence power by previous experiences, AI program helps machine in learning process. Artificial Intelligence is an approach to make a computer, a robot, or a product to think how smart human think. AI is a study of how human brain think, learn, decide and work, when it tries to solve problems.

Research Methodology:

This research paper is based on the secondary data analysis and the information is fetched from the internet via websites, journals and research papers.

Objectives of the paper:

- To study the concept of Artificial Intelligence.
- To find out the working of AI & its sub fields.

Applications of AI:

1. Healthcare: For the past five to ten years, artificial intelligence has been of great help to the healthcare industry and will have a huge impact on the industry.
Artificial intelligence can help physicians with illness and inform them of where patients are getting worse so that medical care can reach the patient before hospitalization.

2. Gaming: Artificial intelligence can be used to play games. Artificial intelligence machines can play strategic games like chess, where the machine needs to think of a large number of possible moves.
3. Social media: Social networking sites like Facebook, Twitter and Snapchat have billions of user profiles, which need to be maintained and managed in the most efficient manner. Artificial intelligence can organize and manage large amounts of data. Artificial Intelligence can analyze a lot of data to identify the latest genres, hashtags and need for different users.
4. E-commerce: Artificial intelligence provides a competitive edge in the e-commerce industry, and is increasingly sought after in the e-commerce business. Artificial intelligence helps consumers find products that match the recommended size, color, or even product.
5. Education: Artificial intelligence can automate grading so that the teacher has more time to teach. Artificial intelligence chatbot can communicate with students as a teaching assistant. Artificial intelligence in the future can be a personal learning activity, which will be readily available at any time and in any place.
6. Travel & Transport: The demand for artificial intelligence by the tourism industry is increasing rapidly. Artificial intelligence is capable of performing a variety of travel-related tasks such as arranging travel arrangements for customers to take hotels, flights and routes.
7. Entertainment: we use many AI based applications in our daily life with some entertainment services like Netflix or Amazon. With the help of machine learning and artificial intelligence algorithms, these services show recommendations for programs or shows.
8. Robotics: Artificial Intelligence plays a significant role in Robots. Normal robots are usually programmed to be able to perform certain repetitive tasks, but with the help of ARTIFICIAL INTELLIGENCE, we can create intelligent robots that can perform tasks on their own without any pre-programmed design. Humanoid robots are excellent examples of Artificial Intelligence in robots, with the recent development of a clever Humanoid robot called Erica and Sophia that can speak and behave like humans.
9. Agriculture: Agriculture is a sector that requires different types of resources, labor, money and time for good results. Nowadays agriculture is going digital and artistic talent is emerging in this field. Agriculture uses artificial intelligence technology such as agricultural robots, robust monitoring and crop, forecast analysis. Artificial intelligence in agriculture can help farmers a lot.
10. Automated industry: Some automotive industries use Artificial intelligence to provide a visible helper to their user for better performance. Like Tesla introduced TeslaBot, a smart smart assistant. Various industries are currently working to develop self-driving vehicles that can make your trip safer and more secure.
11. Data Security: Data security is important for every company and cyber-attacks are growing rapidly in the digital world. Artificial intelligence can be used to make your data safer and more secure. AEG bot, the ARTIFICIAL INTELLIGENCE2 Platform, are used to detect software bugs and cyber-attacks in a better way.

Types of Artificial Intelligence:

Artificial Intelligence can be divided based on capabilities and functionalities.

There are three types of Artificial Intelligence-based on capabilities -

1. Narrow AI:

Narrow AI, also known as Weak AI, that concentrates on a single task and is limited in its capabilities. Apple Siri is an example of a Narrow AI that operates with a limited pre-defined range of functions. IBM Watson supercomputer is another example of a Narrow AI. Other examples of Narrow AI include google translate, image recognition software, recommendation systems, spam filtering, and Google's page-ranking algorithm.

2. General AI:

General AI also known as strong AI which is capable of understanding and learning any intellectual work that a person can. It enables a machine to apply its knowledge and talents in a variety of situations.

3. Super AI:

Super AI is smarter than humans and can accomplish any work better than them. Super AI's key traits are the ability to think, solve puzzles, make judgments, and make decisions on its own.

Sub Fields of Artificial Intelligence:

1. Machine Learning:

- Machine Learning is a sub-field of artificial intelligence that is based on the concept that systems/machines can learn from data, acknowledge patterns, and make decisions with little bit or no human interference. We give machines access to information and allow them to learn for themselves. It's simply getting a computer to perform a task without specifically programming it to do so.
- In the last several years, machine learning has brought us self-driving cars, picture and speech recognition, useful online search, and a number of other applications.

2. Neural Network:

- The neural network is a part of artificial intelligence that makes use of neurology (a part of biology that concerns the nerve and nervous system of the human brain). It includes cognitive science into machines to complete the tasks.
- The neural network imitate the human brain, which has an endless number of neurons, and the neural networks motive is to code brain-neurons into a system or computer.
- Neural Networks are widely used for risk analysis, fraud detection, stock-exchange, sales prediction, and many other purposes.

4. Natural Language Processing:

- NLP is a part of computer science and artificial intelligence that allows computers and humans to communicate using natural language.
- It's a method of computational analysis of human languages. By copying human natural language, it enables a machine/system to comprehend and interpret data.
- NLP is a methodology for searching, analyzing, comprehending, and fetching information from textual input. NLP libraries are used by programmers to instruct computers how to extract meaningful information from text input.
- Computer algorithms can verify whether an email is trash or not by looking at the subject of a line, or the content of an email, which is a typical example of NLP.

5. Deep Learning:

- It's a learning process in which the machine analyses and processes the input data in a variety of ways until it finds a single acceptable output.
- It's also called as self-learning of machines. To map the raw sequence of input data to output, the machine uses a variety of random programs and algorithms.

6. Cognitive Computing:

- The motive of Cognitive Computing is to initiate and enhance human-machine interaction to accomplish complex tasks and help in problem-solving.
- While working with humans on a variety of jobs, machines learn and comprehend human behavior and feelings in a variety of situations, and then recreate the human thought process in a computer model.

7. Computer Vision:

- Computer vision is crucial part of artificial intelligence because it allows the computer to identify, examine, and depict visual input from real-world images and visuals by capturing and intercepting it.
- It uses deep learning and pattern recognition to get visual information from any data, including videos, image files within PDF documents, Word documents, PowerPoint presentations, XL files, graphs, and photographs, among other formats.

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