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Artificial Intelligence –A Modern Approach

*Prof. Duggal S.A.
**Prof.Pawar S.D

Introduction:

AI is accomplished by studying how human brain thinks, and how humans learn, decide, and work while trying to solve a problem, and then using the outcomes of this study as a basis of developing intelligent software and systems.

According to the father of Artificial Intelligence, John McCarthy, it is **"The science and engineering of making intelligent machines, especially intelligent computer programs**".

Artificial Intelligence is a way of **making a computer, a computer-controlled robot, or a software think intelligently**, in the similar manner the intelligent humans think.

There is a way to think of how smart artificial intelligence is for computers, robots or products.How human brain thinks is the study of Artificial Intelligence.It can learn, decide and work, when it tries to solve problems. AI's goal is to improve the computer functions related to human knowledge, for example, reasoning, learning, and problem-solving.

The intelligence is intangible. It is composed of

- Reasoning
- Learning
- Problem Solving
- Perception
- Linguistic Intelligence

The objectives of AI research are as follows

1 Reasoning.
2. Knowledge representation.
3. Planning
4. Learning
5. Natural language processing
6. Realization
7. Ability to move

Approaches include statistical methods, computational intelligence, and traditional coding AI. During the AI research related to search and mathematical optimization, artificial neural networks and methods based on statistics, probability, and economics, we use many tools. Computer science attracts AI in the field of science, mathematics, psychology, linguistics, philosophy and so on.

Major Goals

- Knowledge reasoning
- Planning
- Machine Learning
- Natural Language Processing
- Computer Vision
- Robotics

Application Of AI:

1. Google just gave us making voice call.

The technology is directed towards completing specific tasks, such as scheduling certain types of appointments. For such tasks, the system makes the conversational experience as natural as possible, allowing people to speak normally, like they would to another person, without having to adapt to a machine." Google says that it wants to be clear about where and when duplex is being used, as a voice that sounds this genuine and convincing is certain to raise some questions.

2.Amazon introduces Alexa

Amazon Alexa is a virtual assistant that controls smart devices, but it seems that there's nothing artificial about its intelligence. Firstly AI is used in the Amazon Echo, sometimes it is capable of such clever voice

* BBA(CA) Dept.C.D.Jain College of Commerce,Shrirampur.
**Commerce Department C.D.Jain College of Commerce,Shrirampur.

interaction, and it feels there's a human mind behind it.From trying to learn new things to finding clever ways of making people leave the house, this hilarious list by **Bored Panda** proves Alexa would easily pass the Turing test.

3. Tech companies should stop pretending AI won't destroy jobs

It will soon be obvious that half our tasks can be done better at almost no cost by AI. This will be the fastest transition humankind has experienced, and we're not ready for it.

4. Artificial Intelligence Recreates Images From Inside the Human Brain

The research, which has not yet been peer-reviewed, was conducted by scientists from Kyoto University in Japan and led by Yukiyasu Kamitani. Using functional magnetic resonance imaging (fMRI), the team said they were able to reconstruct images seen by our brains.The images were projected onto a screen in an fMRI scanner, with the heads of the subjects secured in place with a bar for them to bite down on. Each then took part in multiple scanning sessions, each lasting a maximum of 2 hours, over 10 months.

The participants stared at each image for a number of seconds before having a rest in the first experiment. In the next experiment, they had to simply remember one of the images they had seen previously and picture it in their mind.

5. Skin Cancer Detection Using Artificial Intelligence

"Early detection is critical to the management of skin cancers," said Rajiv Bhatnagar, a senior staff dermatologist and geographic medical director at Palo Alto Medical Foundation. "Even the most serious skin cancers are often cured if detected early."

6.Gaming

AI plays crucial role in strategic games such as chess, poker, tic-tac-toe, etc., where machine can think of large number of possible positions based on heuristic knowledge.

7. Natural Language Processing

It is possible to interact with the computer that understands natural language spoken by humans.

8.Expert Systems

There are some applications which integrate machine, software, and special information to impart reasoning and advising. They provide explanation and advice to the users.

9. Vision Systems – These systems understand, interpret, and comprehend visual input on the computer. For example,

- A spying aero-plane takes photographs, which are used to figure out spatial information or map of the areas.
- Doctors use clinical expert system to diagnose the patient.
- Police use computer software that can recognize the face of criminal with the stored portrait made by forensic artist.

10. Speech Recognition

Some intelligent systems are capable of hearing and comprehending the language in terms of sentences and their meanings while a human talks to it. It can handle different accents, slang words, noise in the background, change in human's noise due to cold, etc.

11. Handwriting Recognition

Handwriting recognition software reads the text written on the paper. These letters can recognize the size and convert them to editable text.

12. Intelligent Robots – Robots are able to perform the tasks given by a human. They have sensors to detect physical data from the real world such as light, heat, temperature, movement, sound, bump, and pressure. They have efficient processors, multiple sensors and huge memory, to exhibit intelligence. In addition, they are capable of learning from their mistakes and they can adapt to the new environment.

Conclusion:

Artificial Intelligence is nothing but a replica of human brain. The quality of mind is made of capabilities to learn from past experience which is used to adapt new technologies, new situations, handling various abstract ideas and the ability to change the environment using gained knowledge.

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