
DOMAINS OF
ARTIFICIAL
INTELLIGENCE

Three Domains of Artificial Intelligence

In A.I. ,We feed data into the computer then analyse that data and gives out the prediction.

A.I. intelligence has three domains:-

Data

Computer Vision

Natural Language Processing

DATA

DATA CAN BE IN FORM OF :-

NUMERICAL FACTS

IMAGES

DATA

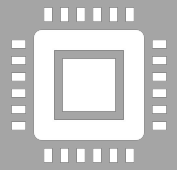
AUDIO

VIDEO

MUSIC

DATA

AI needs only data. The more the data, the better will be the analysis done and more accurate will be the predictions.



If the data is in form of Image or video, then it is related to computer vision.

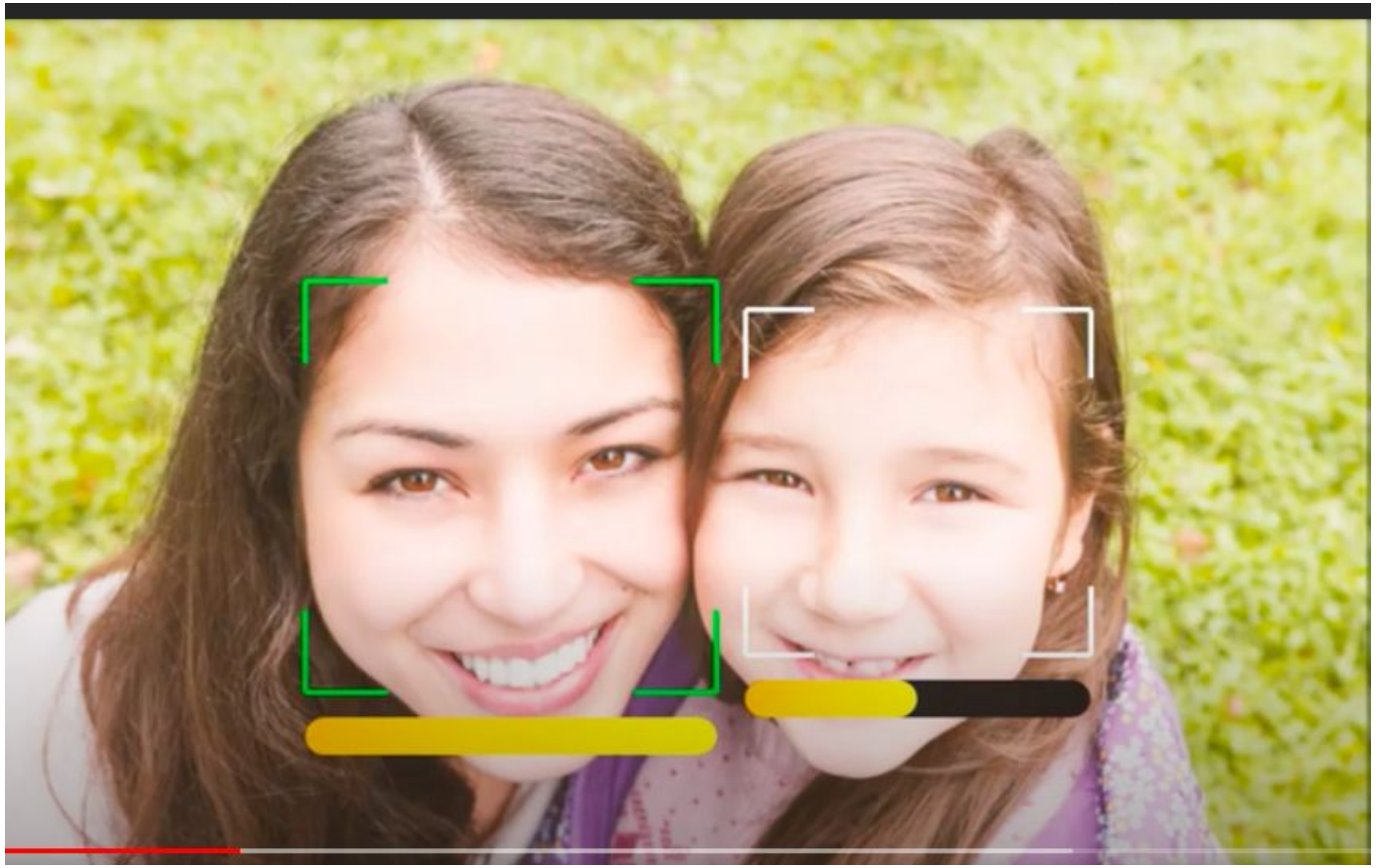
If the data is in form of voice or audio or music ,It is related to natural Language Processing.

Computer Vision

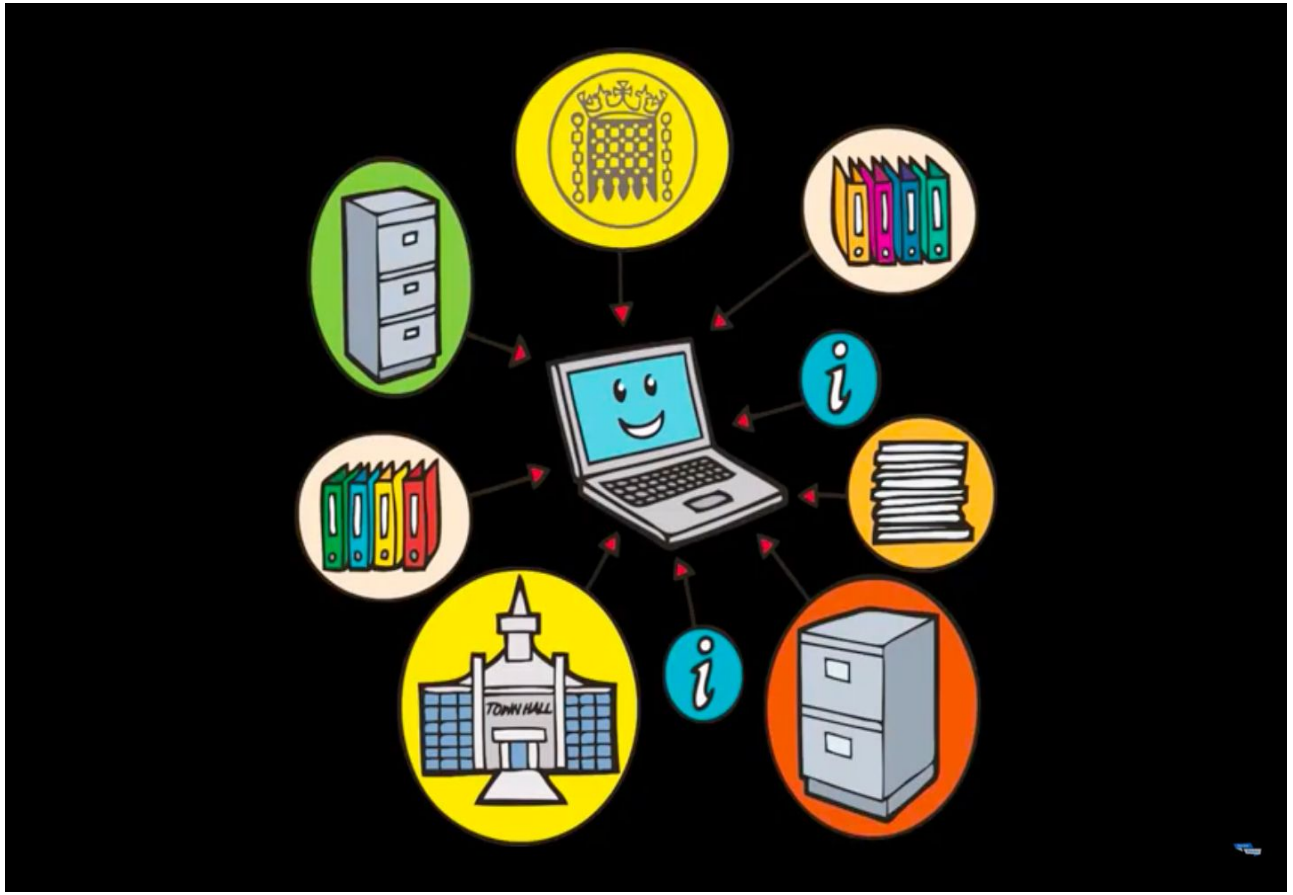
When we process graphics and video to recognize some pattern or trend.

Example: When we watch a cctv footage and try to match the criminal face for finding the culprit then we are using computer vision.

Computer Vision



Computer Vision



Computer Vision

Computer Vision

Natural Language Processing

- When we try to understand the language spoken by the user for communication purpose then it is AI using natural Language

Link for domain games

- Rock paper scissor:- https://www.afiniti.com/corporate/rock-paper-scissors
- Mystery animal game:-
- Scavenger Hunt:- https://emojiscavengerhunt.withgoogle.com/
- Computer vision:- https://www.youtube.com/watch?v=Cgxsv1riJhI

WHY WE NEED ARTIFICIAL INTELLIGENCE?

With the help of AI, we can create such software or devices which can solve real-world problems easily and with utmost accuracy such as health issues, marketing, traffic issues etc.

With the help of AI, we can create your personal virtual Assistant, such as Cortana, Google Assistant, Siri, etc.

With the help of AI, we can build such Robots which can work in an environment where survival of humans can be at risk like freezing zones, political boundaries, risky terrain, etc.

Thus we can say that AI opens a new path for other new technologies, new devices, and new Opportunities for human being.

SOME FAMOUS ROBOTS MADE USING AI

- Sophia is a humanoid robot that has the capability of displaying human like expressions. Her behaviour is similar to a human and she can interact with other people as a human does. She was made by Hong Kong based company Hanson Robotics. Sophia was activated on February 14, 2016. She is able to display more than 60 facial expressions. On October 25, at the Future Investment Summit in Riyadh, the robot was granted Saudi Arabian citizenship, becoming the first robot ever to have a nationality

SOME FAMOUS ROBOTS MADE USING AI : Rashmi

- Ranjit Srivastava developed the world's first Hindi speaking realistic humanoid robot named Rashmi. Rashmi, who can speak Hindi, Bhojpuri and Marathi along with English,embodies linguistic interpretation, artificial intelligence, visual data and facial recognition systems.

SOME FAMOUS ROBOTS MADE USING AI : MANAV

- Manav is India's first humanoid robot which was developed in the laboratory of A-SET Training and Research Institutes by Diwakar Vaish (Head of Robotics and Research,A-SET Training and Research Institutes) in late December 2014. It debuted at the IIT-Bombay Techfest 2014-15 in Mumbai. Manav stands at 2 feet tall and has a weight of 2 kilograms. It is equipped with onboard sound processing and visual processing so it can respond to commands. The Robot was designed in a span of 2 months

TURNING TEST

Turing test is a measure to find the success of the system built using Artificial Intelligence. In this test, two persons and a machine are used to participate in the test for evaluation. Out of the two persons, one plays the role of the tester. One person and the machine sits in different rooms. The tester is unaware of who is machine and who is a human. He interrogates through the questions

by typing and sending them to both and in return it receives typed responses.

This test aims at fooling the tester. If the tester fails to determine machine's response from the human response, then the machine is said to be intelligent. Alan Turing introduced this test in 1950.

ADVANTAGES OF ARTIFICIAL INTELLIGENCE

AI machines have high accuracy with less errors: AI machines or systems have high accuracy since it takes decisions as per pre-experience or information. This is why such systems or machine gives output with less errors.

AI machines have high-speed: AI systems have high-speed and makes fast-decision. An example of this can be seen through the machine that was able to beat a chess champion in the Chess game.

AI machines has high reliability: AI machines are highly reliable and can perform the same action multiple times with accuracy.

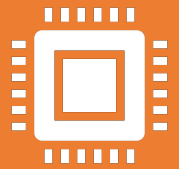
ADVANTAGES OF ARTIFICIAL INTELLIGENCE

AI machines are best suited for risky areas: AI machines can be helpful in situations where employing humans can be risky such as defusing a bomb, exploring the ocean floor, keeping an eye on the international border of a country, etc.

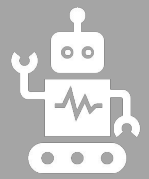
AI machines can give digital assistant: AI machines can give digital assistant to the users like it is doing in the field of E-commerce websites for showing the products as per customer requirement.

AI machines can be useful as a public utility: AI machines can be very useful as public utilities such as a self-driving car for making our journey safer and hassle-free, facial recognition for security purpose, Natural language processing to communicate with the human in human-language, etc.

DISADVANTAGES OF ARTIFICIAL INTELLIGENCE



AI machines are high in cost: The hardware and software requirement of AI machines is quite high. The high cost also includes the maintenance cost of the AI machines.



AI machines can't think out of the box: With the emergence of AI Technology, the machines can do the task as per the instruction and algorithm given but still they cannot think or work out of the box e.g., a robot will only do that work for which they are trained, or programmed.

DISADVANTAGES OF ARTIFICIAL INTELLIGENCE

AI machines have no feelings and emotions: AI machines can only work on the instructions and algorithm given. These machines cannot feel or react so it cannot make any kind of emotional attachment with human and may even harm the users if proper care is not taken.

AI machines increase human dependency on machines: AI is a new technology, but it has made humans more dependent on the machines or devices and as a result humans are losing their mental capabilities.

DISADVANTAGES OF ARTIFICIAL INTELLIGENCE

- **AI machines does not have original creativity**: God has blessed humans with intelligence and creativity so humans created the AI machines but on the contrary the AI machines does not have their own intelligence and so they cannot beat the power of human intelligence and cannot be creative and imaginative.