ARTIFICIAL INTELLIGENCE

What is Artificial Intelligence?

It is a branch of Computer Science that pursues creating the computers or machines as intelligent as human beings.

It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence,

Artificial Intelligence is the study of how to make computers do things, which, at the moment, people do better.

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.

History of Artificial Intelligence

1950, This is where it all started.
A computer scientist posed a question: “Are there imaginable digital computers which would do well in the imitation game?

In 1956: It became “Artificial Intelligence”
John McCarthy, an American Computer Scientist — who is widely described as the father of AI — coined the term ‘Artificial Intelligence’ as part of his proposal for the 1956 Dartmouth Conference

1959: saw the first lab being established
MIT establishes the first AI Lab in 1959. Since then, it has merged with the MIT Lab for Computer Science to become: CSAIL and remains one of the world’s most important labs

In1975: Saw the First powerful use-case of AI
Stanford University developed MYCIN in 1975

1987: AI Interest drops
A second drop of interest and investments hits AI.
This was due to an increased cost of computing power and a lack of public knowledge about what AI could do.
It was also around this time where some started to worry about whether or not machines will eventually take over our society

1997: saw the first computer to beat a chess champion
IBM’s chess-playing computer beat the world chess champion in one game of chess in 1996, and then winning an entire match in 1997.

In 2002: Robots replaced humans
Amazon made the big decision of replacing human editors with basic AI systems in 2002 and arguably led the way in showing the business how AI could be utilised

2011: saw the use of Voice
In 2011, Apple introduced Siri to the world. Arguably the first (substantial) voice-based conversational interface, which catalysed the race towards the best voice assistant

2016: AI moved to the Next level capability
In 2016, Google’s AlphaGo AI machine beat the world champion of ‘Go’ — the world’s most difficult strategy game which has 1080 possible outcomes

2020 and Beyond
AI will be integral, to every part of the business

Techniques and Approaches in AI

A. Symbolic AI (Good Old-Fashioned AI):
Relies on human-defined rules and logic. Used in early AI systems and expert systems. Example: Decision-tree.
B. Machine Learning (ML):
Enables systems to learn patterns from data without explicit programming. Types of Machine Learning:
Supervised Learning: Training with labeled datasets. Example: Predicting house prices based on features like size and location. Unsupervised Learning: Finding patterns in unlabeled data. Example: Customer segmentation in marketing.

C. Deep Learning:

A subset of ML using multi-layered neural networks. Achieves state-of-the-art performance in image recognition processing, and language translation.

D. Natural Language Processing (NLP):

Focuses on enabling machines to understand, interpret, and generate human language. Applications include chatbots, and machine translation.

E. Computer Vision:

Extracting meaningful information from visual inputs like images or videos. Applications include facial recognition, medical imaging, and autonomous vehicles.

F. Robotics:

Integration of AI to create intelligent machines that interact with the physical world. Applications include industrial automation and disaster response robots.