Artificial intelligence (AI) is the simulation of human intelligence in machines. AI is a field of study in computer science that develops and studies intelligent machines. Artificial intelligence leverages computers and machines to mimic the problem-solving and decision-making capabilities of the human mind

Artificial Intelligence INNNNNINTinIInteligence

***Types ::-: :::-***

YOU KNOW?

It is very hard to write programs that solve problems like recognizing a face. • We don’t know what program to write because we don’t know how our brain does it. • Even if we had a good idea about how to do it, the program might be horrendously complicated. 2. Instead of writing a program by hand, we collect lots of examples that specify the correct output for a given input. 3. A machine learning algorithm then takes these examples and produces a program that does the job. • The program produced by the learning algorithm may look very different from a typical hand-written program.

* ***ML...***

# Clustering and its methods....

1. Form a Hypothesis

2. Find the Data

3. Reshape the Data

4. Clean the Data

5. Error Metric

6. Split the Data

7. Train a model

Neural Network Concepts

ANN is an efficient computing system whose central theme is borrowed from the analogy of biological neural networks [2].

The main objective of ANN is to develop a system to perform various computational tasks faster than traditional systems.

Bias — is a constant value added to each layer. It implies that even if there are no inputs, the model will be activated with a default value of the bias.

Activation function — It is used to determine the output of neural network like yes or no. It maps the resulting values in between 0 to 1 or -1 to 1 etc..Note: weights and biases are the trainable parameters in NN, that is, the network learns patterns by tuning these parameters to get the best predictions.

Deep Learning (DL) [4]

⮚ Deep Learning has neural networks which perform unsupervised learning from unstructured data.

⮚ The learning can be either unsupervised, supervised, or semisupervised in DL.

⮚ The learning in this field is using the complex structure of artificial neural networks, which comprise multiple layers, making the learning ‘deep’ for solving specific problems.

⮚ The DL models work on their own and automatically uncover patterns / features, unlike the ML models which need to manually extract features.

Types of Neural Networks [4]

Feedforward Neural Network (FNN)

⮚ Convolutional Neural Network (CNN)

⮚ Recurrent Neural Network (RNN)

⮚ Autoencoders