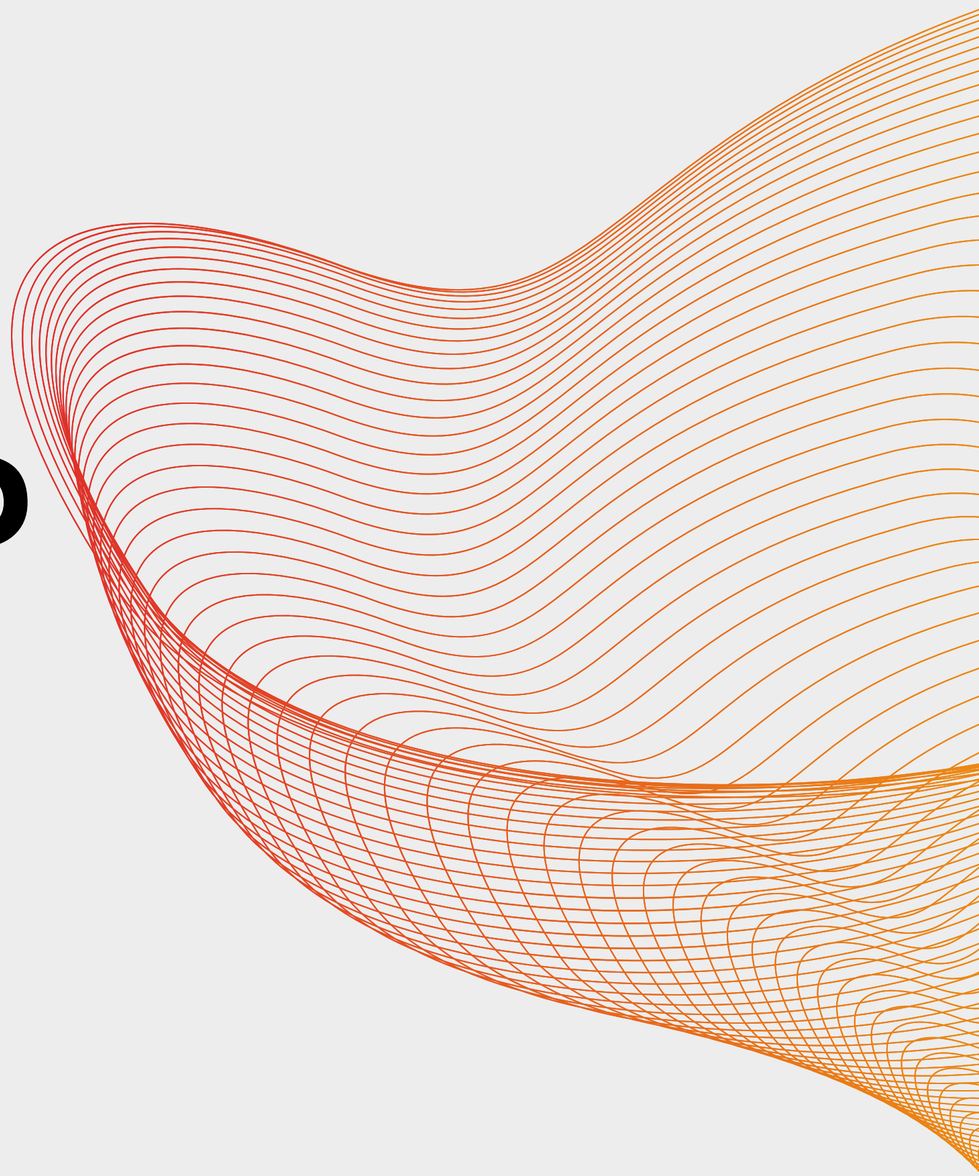
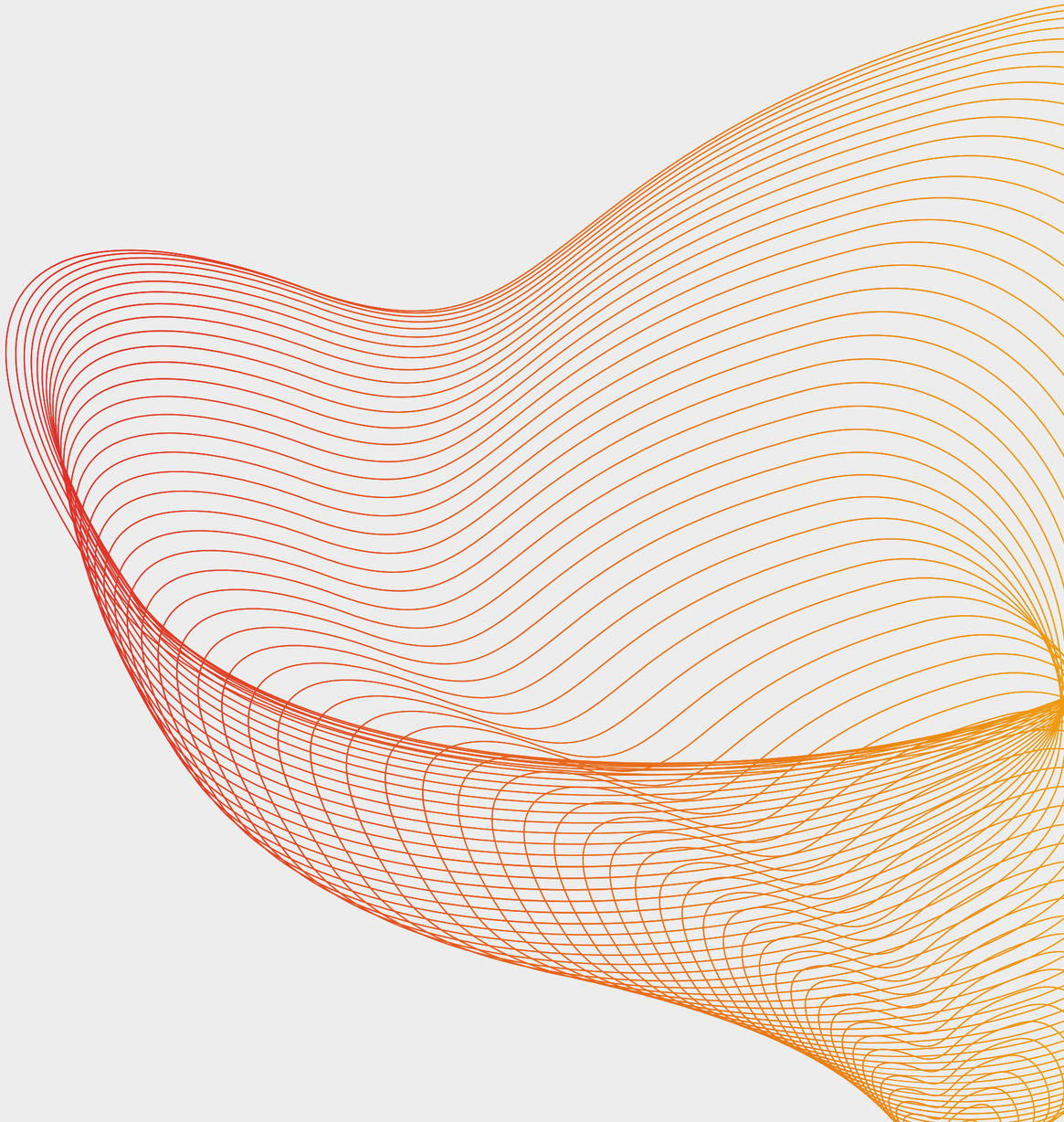
Google Developer Student Clubs
Maharishi Markandeshwar(Deemed to be University)

WELCOME TO AI/ML WORKSHOP



Google Developer Student Clubs
Maharishi Markandeshwar(Deemed to be University)

AI vs ML vs DL



AI

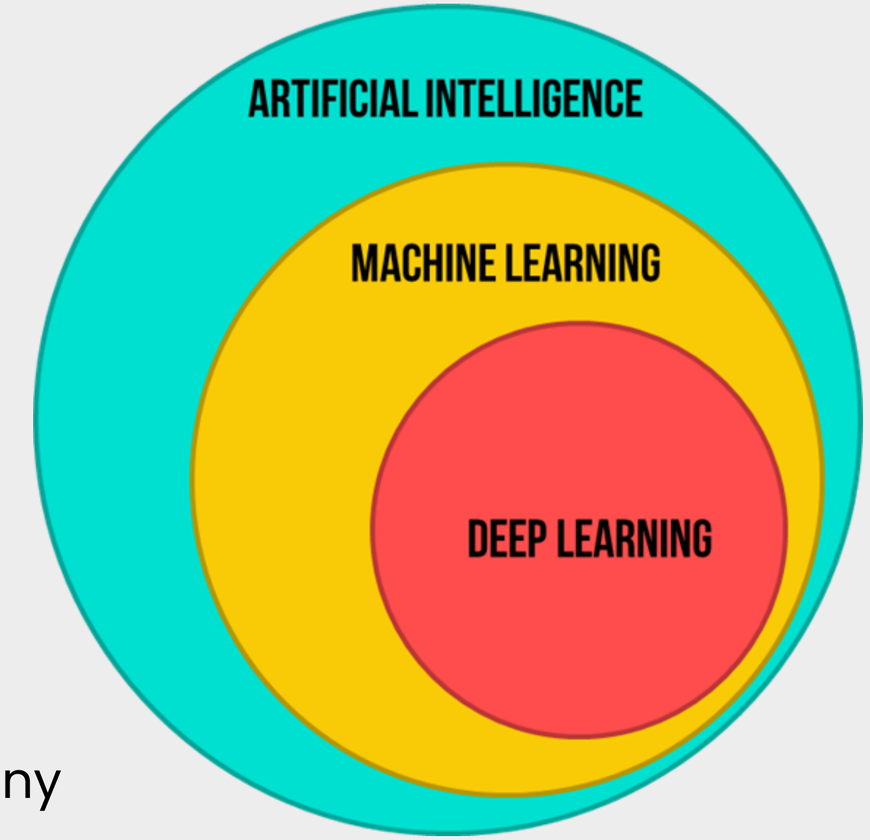
AI is the general field of creating machines that can perform intelligent tasks.

ML

ML is a subset of AI that involves using algorithms and models to learn from data.

DL

DL is a subset of ML that uses neural networks with many layers to learn hierarchical representations of data.



Framework for AI/ML

Diff types of ML techniques

Supervised Learning: A type of ML where the algorithm is trained on labeled data.
Performs tasks like Classification and Regression

Unsupervised Learning: A type of ML where the algorithm is trained on unlabeled data.
Performs task like clustering

Reinforcement Learning: A type of ML where an agent learns to make decisions in an environment by receiving rewards or punishments based on its actions.

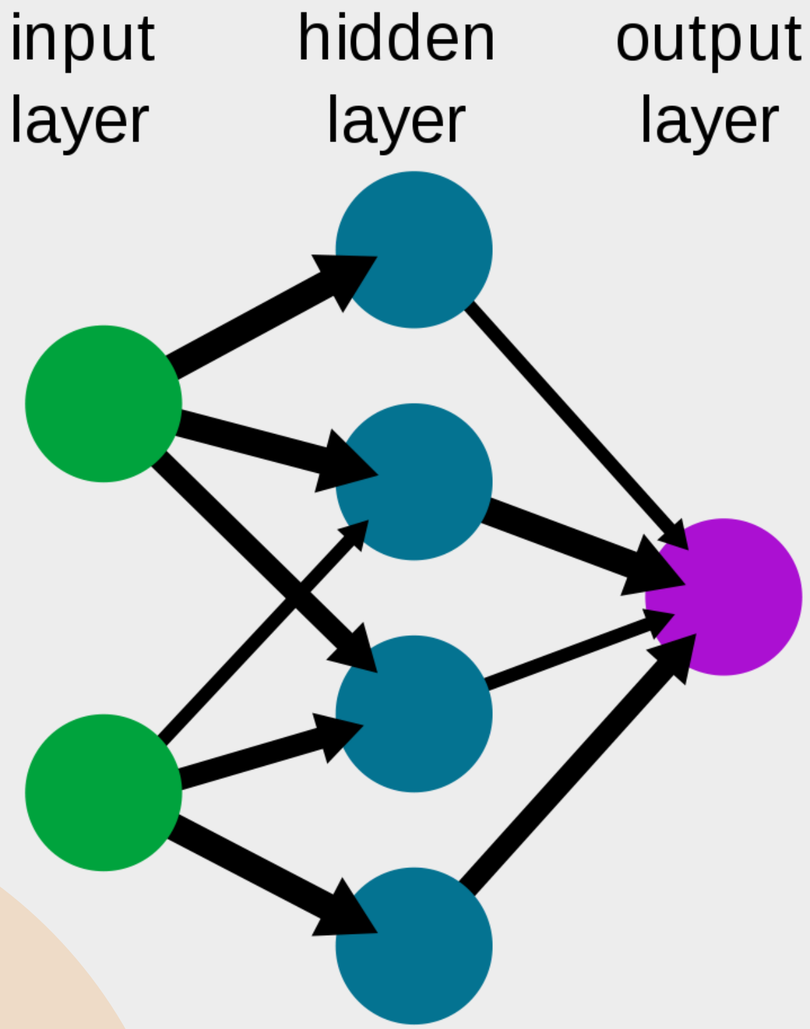
Diff types of DL techniques

Artificial Neural Network(ANN): Works on tabular data.
Performs tasks like Predictions, etc

Convolutional Neural Network(CNN): Works on images and videos.
Performs tasks like image classification,object detection,etc

Recurrent Neural Network(RNN): Works on textual data.
Performs tasks like NLP

Neural Networks



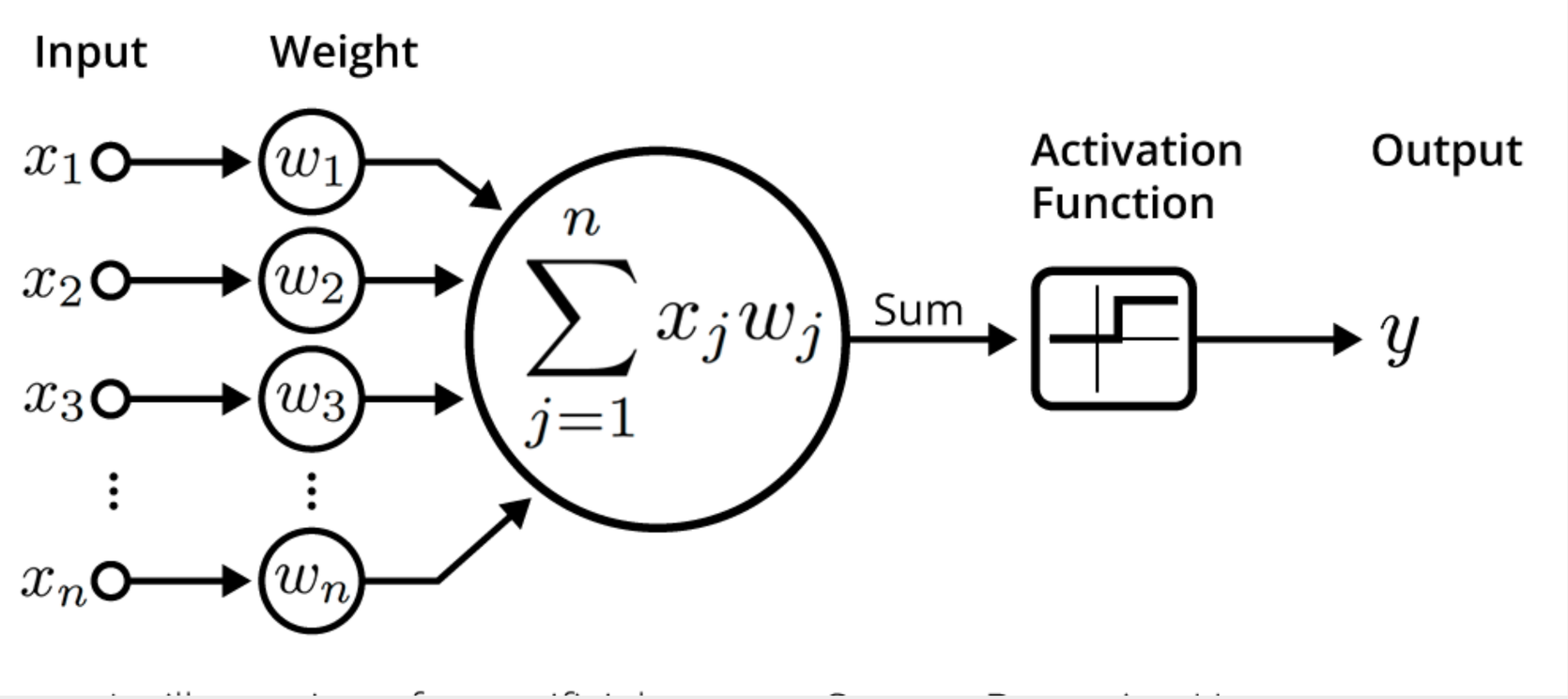
Input Layer: Information/feature passed in this layer

Hidden Layer: A neural network can have any no of hidden layer**.**

Output Layer: Can have 'n' no of nodes. It provides the output.

Visualize: How did you recogonise dog for first time?

How Neural Networks Work?



Activation Function

The activation function determines whether the neuron in the hidden layer should be activated or not based on whether the output of the neuron exceeds a certain value.

Sigmoid Activation fxn: It takes any input value and returns a value between 0 and 1.

ReLu Activation fxn: takes any input value and returns a value of either 0 or the input value itself, whichever is greater.

Visualize: Hot plate when touches your fingers

Back Propagation

In Easy language perform the above whole process in reverse direction.

Back Propagation is performed to inc the accuracy in the output which we've received.

We use 'OPTIMIZERS' for back propagation

Type of 'OPTIMIZERS' :
Adam, gradient descent, etc

How to make a model

Step 1: Loading the data

Step2: Visualizing the data

Step 3: Data Preprocessing

Step 4: Data Modelling