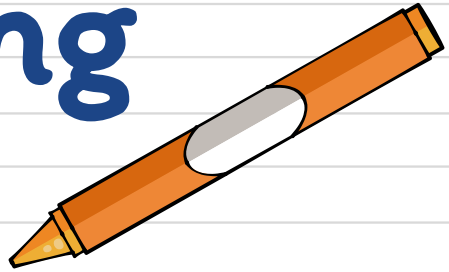
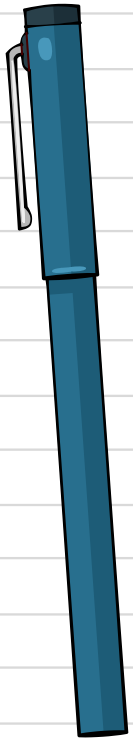
ONLINE NOTEBOOK

01

Introductin to machine learning



Introduction



what is machine learning?

It is an sub domain of computer science which focus on algorithms which help a computer learn from data without explicit programming.

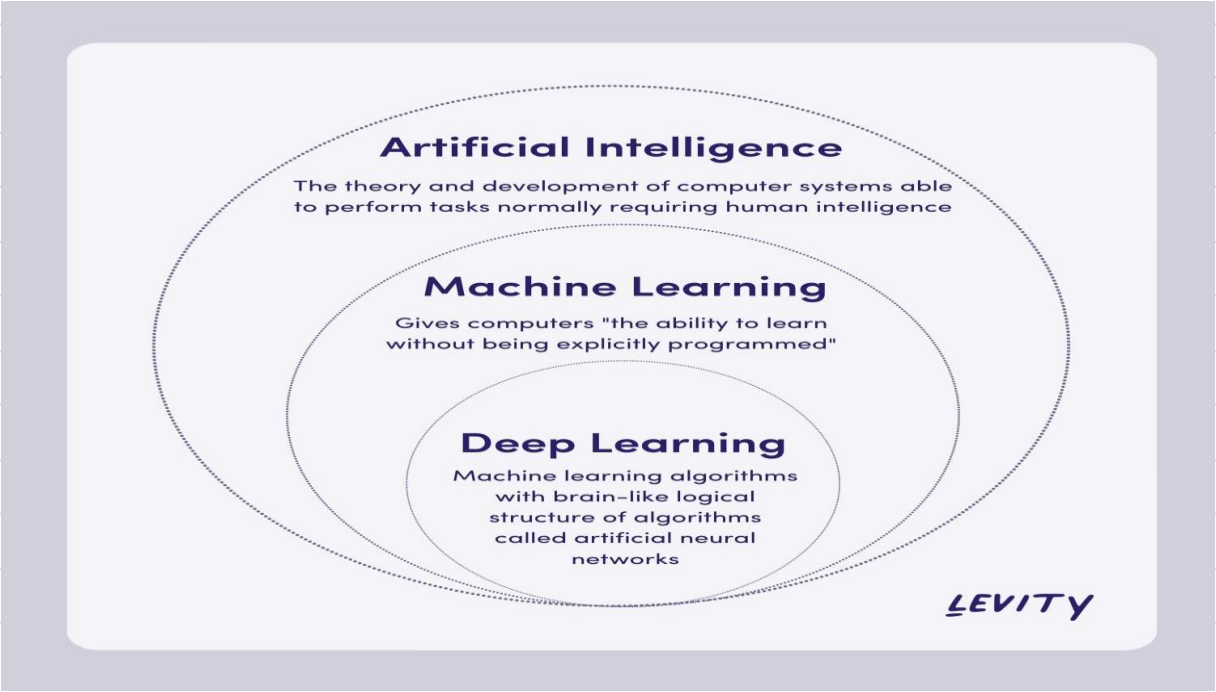
01

what is deep learning?

Deep learning is **a method in artificial intelligence (AI) that teaches computers to process data in a way that is inspired by the human brain**. Deep learning models can recognize complex patterns in pictures, text, sounds, and other data to produce accurate insights and predictions.

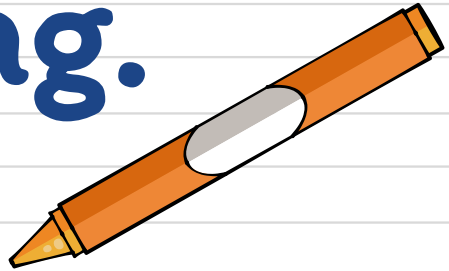
What id Artificial intelligence?

Artificial Intelligence is basically the mechanism to incorporate human intelligence into machines through a set of rules(algorithm)



02

Getting started with Machine learning.



Types of machine learning

Supervised ML:

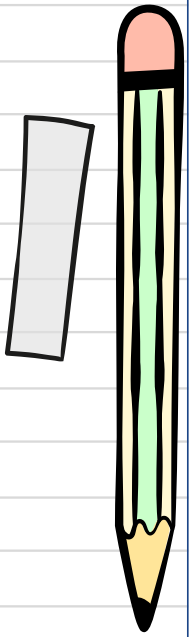
Uses labeled inputs(meaning the input has a corresponding output label)to train models and learn outputs.

Unsupervised ML:

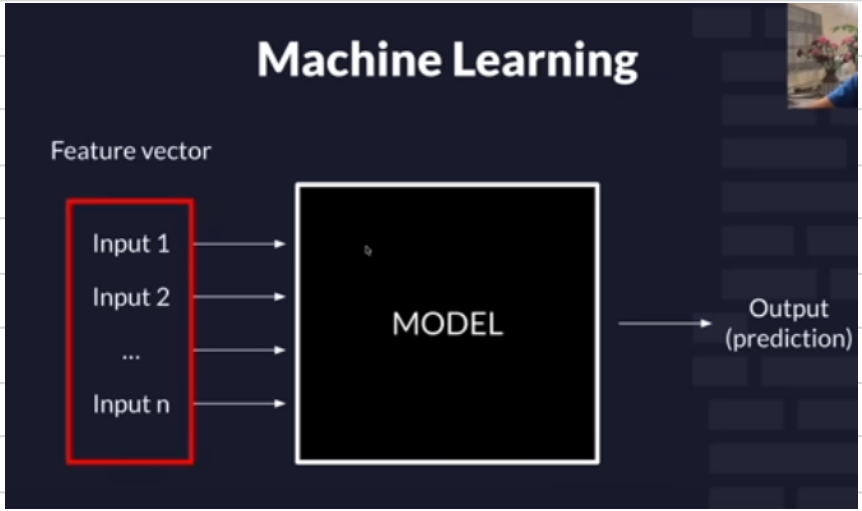
Uses unlabeled data to find pattern in data.

Reinforcement Learning:

Agent learning in interactive environment based on rewards and penalties.



Machine Learning:



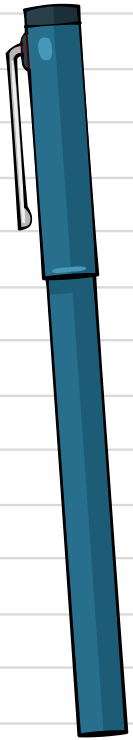
Features:

Qualitative: categorical data (finite no. of categories or group)

Can be Nominal: no inherent order. e.g a person belonging to a country.

Or Ordinal Data: inherent order
e.g rating or age distribution data

Quantitative : numerical valued data; eg. Length, count



Supervised ML:

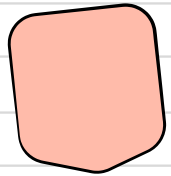
.Classification: predict discrete classes

Binary Classification	Multiclass classification
Positive/negative Cat/dog spam/not spam	Cat/dog/lizard/dolphin Orange/apple/pear Plant species

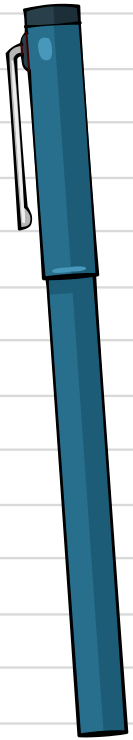
.Regression : predict continuous values

Example: weather report

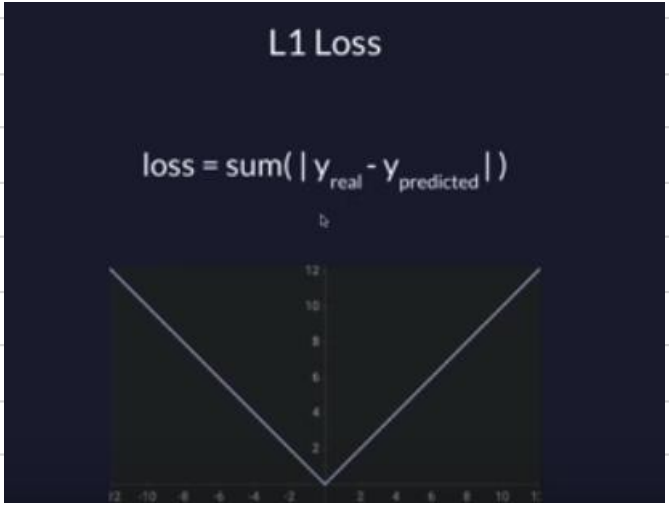
stock prices

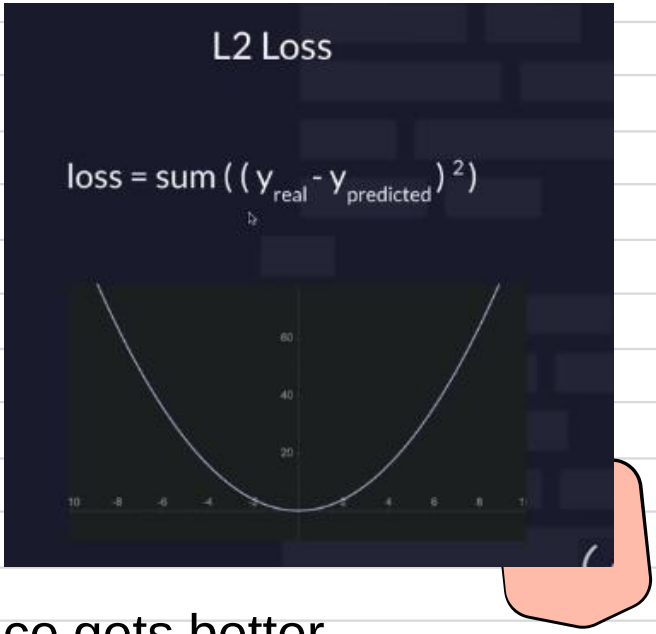


Measuring model performance:



Loss function:





Loss decreases as performance gets better.

Measuring model performance:

Accuracy: can be measured in percentage.