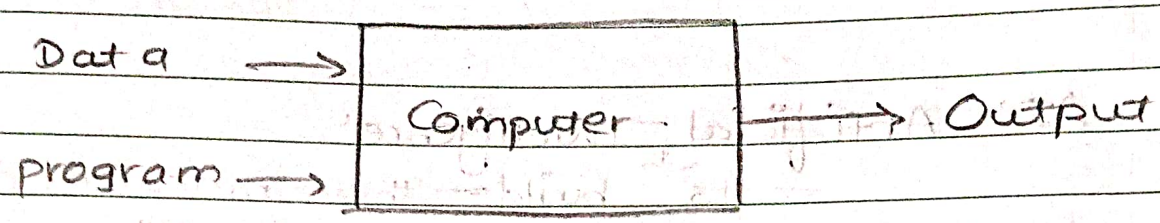
100 days of machine learning
Playlist :- Campusx.

Day-1 → (30/12/25)

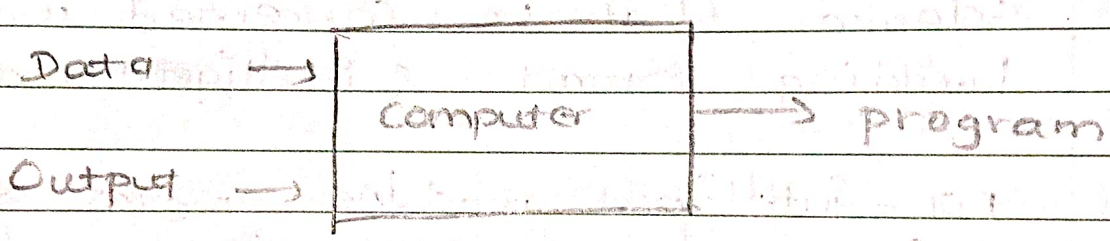
Video 1

Machine learning :- Learning from the data.

Traditional programming



Machine learning

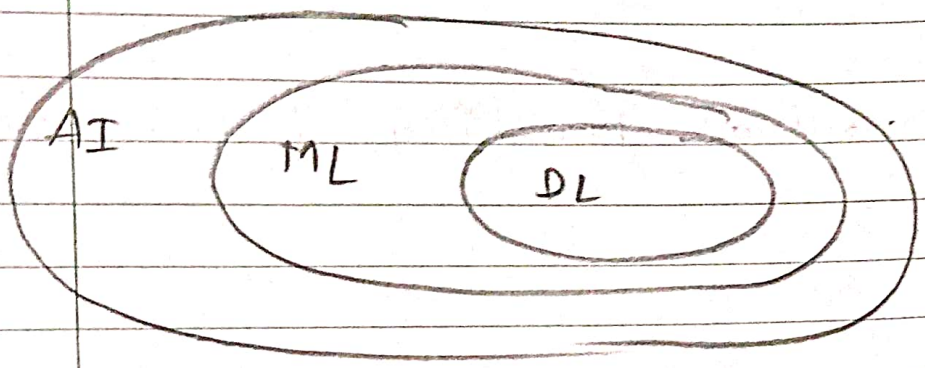


History :-

↳ existing from long in industry

from 2010 there was boom in Machine learning

Video-2 AI vs ML vs DL



* AI:- Artificial Intelligence:-
to build the machines that can mimic human intelligence.
It is a branch of computer science that is concerned with building Smart & intelligent machines.

non-intelligent machines means ~~google Assista~~ like clock, bike etc.

Intelligent Machines means:- Google Asistant, Alexa, Siri etc.

* ML:- Machine learning:-
Machine learning is a AI that provides machines the ability to automatically learns from the data & past experiences while identifying patterns to make predictions with

minimal human interventions.

OR

ML is a technique to implement AI that can learn from data by themselves without being explicitly programmed.

* DL - Deep learning

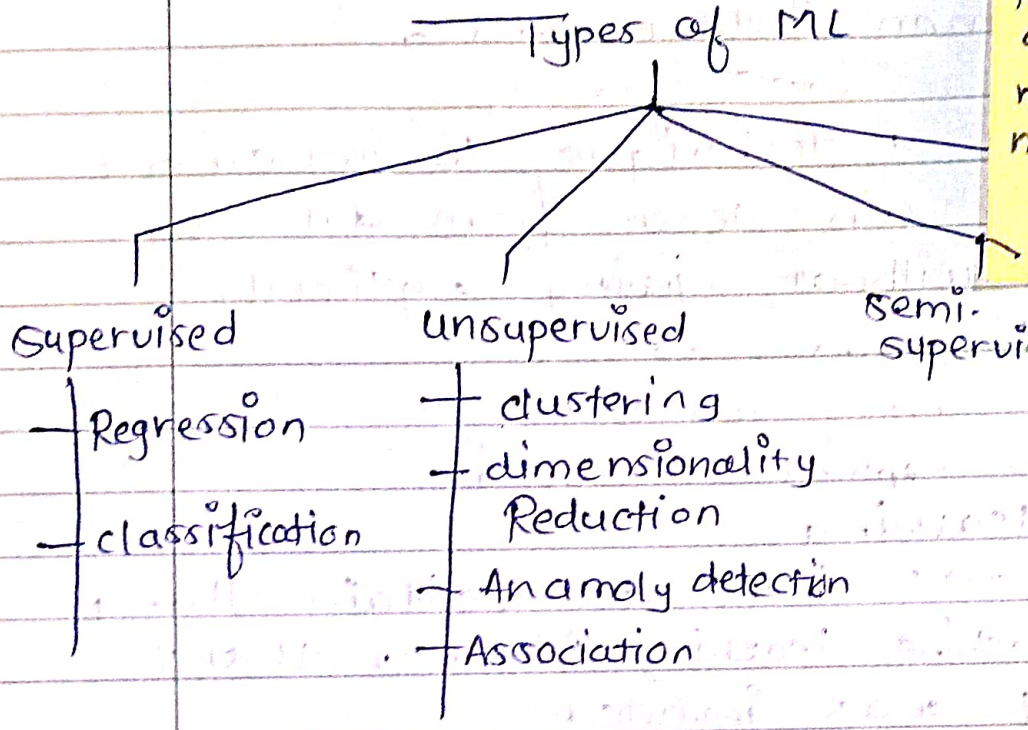
Why ? ⇒ There are certain thing where machine learning stucks, that's why DL was invented.

(inspired by our biology) → but it is a mathematical model, they create their own features.

Deep learning is a subfield of ML that uses AI neutral network to learn from data.

Types of Machine Learning:-

The type of ML depends upon different thing.
In this we classify ML based on amount of supervision needed to train model.



* Supervised ML:-

In supervised learning the machine algorithm learns from the labelled data

The data which has both i/p & o/p & based on that we train ML model.

e.g. Suppose we have data which consist of iq, cgpa, & placement happens or not, in this the iq & cgpa will decide placement will happen or not So we train the model with this data so in such way that when a new iq & cgpa arrives it can predict where student will place or not

Data is generally of 2 types
- Numerical
  - age
  - cgpa
- Categorical
  - gender
  - Nation.

Supervised learning
- Regression → o/p column is numerical
- classification → o/p column is categorical
  - logistic
  - polynomial
  - SVM
  - Decision tree
  - Random forest
  - K-nearest neighbour

* Unsupervised Machine learning:-
It learns from unlabelled data

* unlabelled data:- the data consist of only i/p column & not the o/p columns regarding to it.

In this we try to find patterns in the data & train the model based on that

- Clustering → creates a cluster (group have similiar properties)
- Dimensionality reduction → It combines the columns with same features to reduce the no. of col in data
- Anamoly detection → If there is any anomaly we detect it (outliers basically)
- Association rule learning:-

we call it feature extraction

Types of machine learning.
based on how machine learning model is train (production)

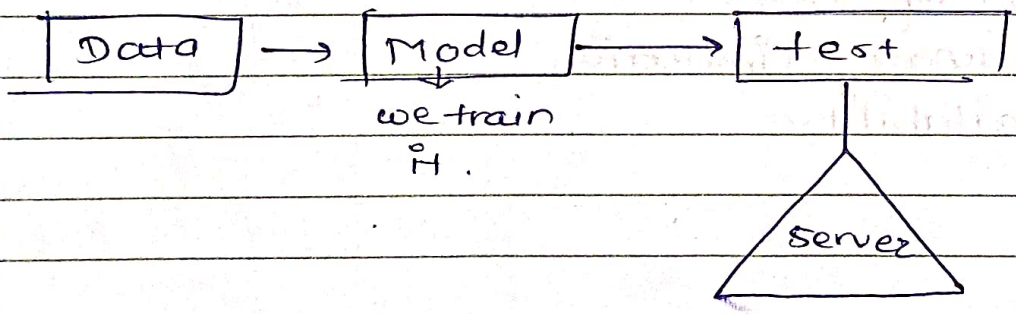
Video-4

Batch learning. (Also known as offline learning)

What is batch learning:-

It is a type of conventional (entire) learning where we use all the data to train the model. (machine learning model).

(you train your model in an offline system once the model it train you deploy it on the server)



The problem:

1] model is static. (static in the case means it has learn from previous data & now a days data changes continously

(~~the~~ आता यामध्ये जो update data आहे म्हणजे आपण 24 तासानंतर इच्छा किंवा एक संख्या द्या new data वर model सा train करतो).

Summary:

In case of batch learning, we use the entire data to train our model, once it is test, we deploy it on server.

& if new data comes we take out that model offline, train it again on data, test it & again deploy it on the server.

* Disadvantages of Batch ML

1] Lots of data
2] Hardware limitation
3] Availability