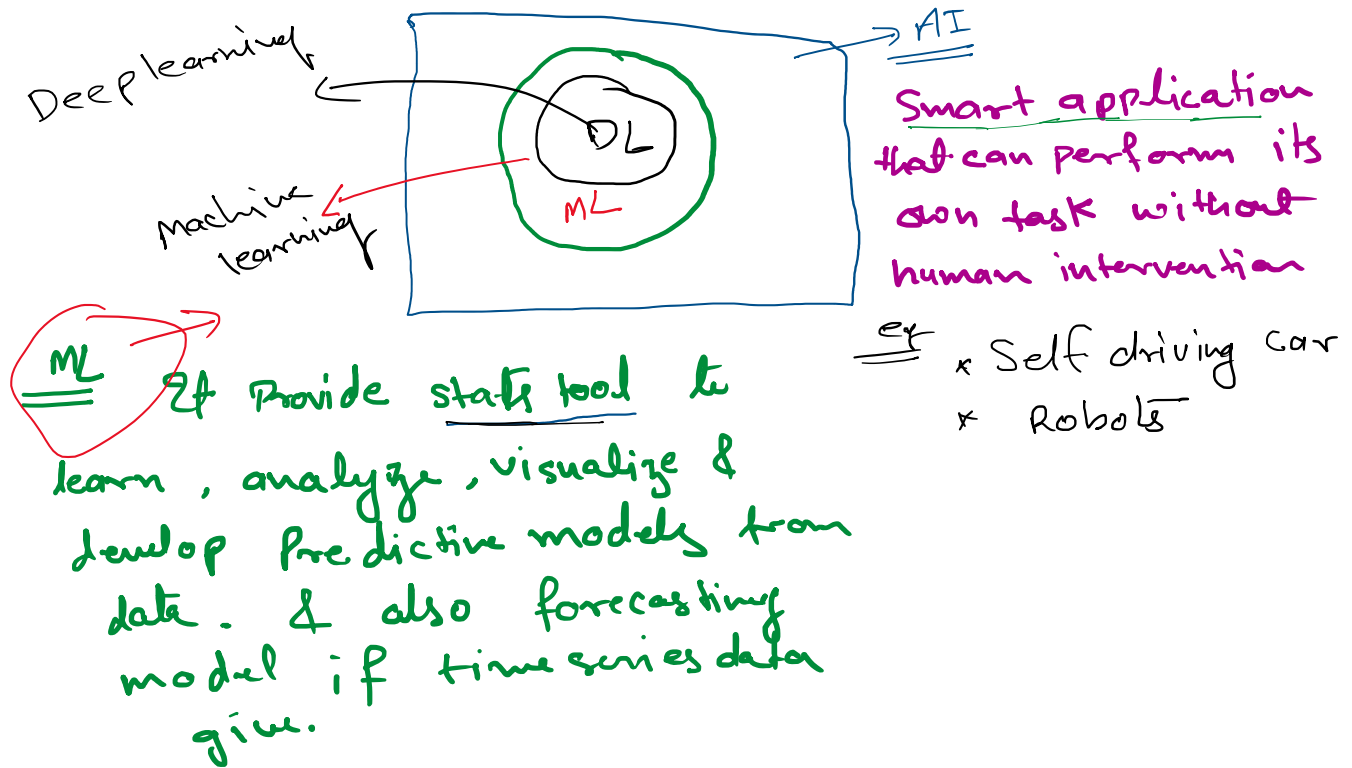


AI vs ML vs DL

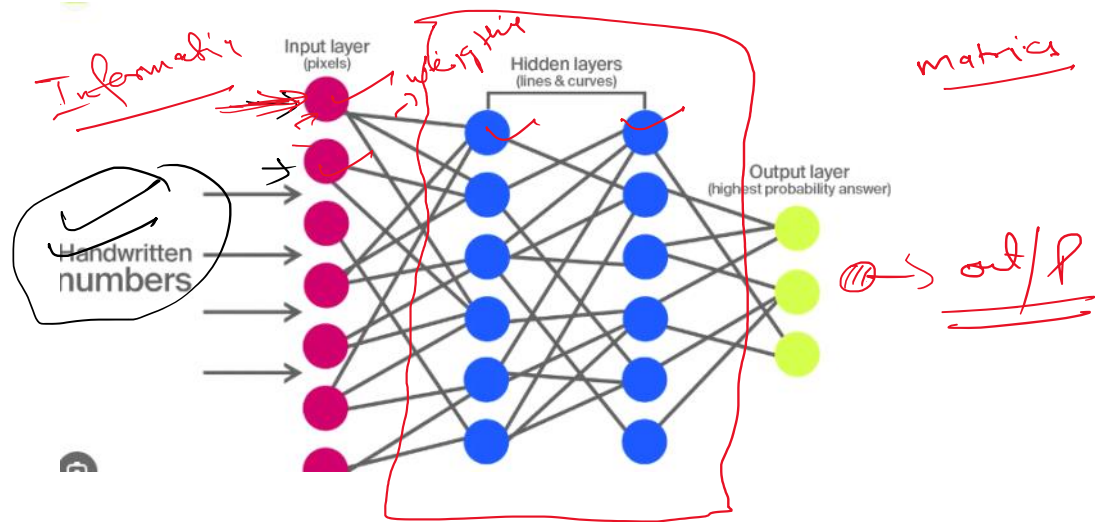


ex

- * Recommendation system
- * Email spam filtering

(a) Regression Application
(b) Classification Application

DL mimic the human brain using multi layered Neural Network



- eg
- * Object detection
 - * Image Recognition
 - * cheatbots →
 - * Recommendation

What Is Machine Learning?

Machine Learning is the science (and art) of programming computers so they can learn from data.

Here is a slightly more general definition:

[Machine Learning is the] field of study that gives computers the ability to learn without being explicitly programmed.

—Arthur Samuel, 1959

And a more engineering-oriented one:

A computer program is said to learn from experience E with respect to some task T and some performance measure P , if its performance on T , as measured by P , improves with experience E .

—Tom Mitchell, 1997

Types of ML

- ① Supervised Machine learning
- classification
 - Regression

① Supervised Machine learning \rightarrow Regression

② Unsupervised machine learning

③ Semi supervised machine learning

④ Reinforcement learning

① Supervised ML

Dataset \rightarrow o/p

a) Classification

No. of hr played

No. of hr study

Pass/fail

8

2

fail

6

4

fail

7

3

fail

5

5

Pass

4

6

Pass

o/p \rightarrow Pass / fail

Regression

Size of house No. of rooms

o/p

Price of house

Size of house	No. of rooms
120 sqft	2
200 sqft	3
300 sqft	4
<u>350 sqft</u>	<u>5</u>

Price
12L
15L
20L
25L

Input \rightarrow model \rightarrow O/P (Price)

- Exam \rightarrow
- \rightarrow K-Nearest Neighbors
 - \rightarrow Linear Regression
 - \rightarrow Logistic Regression
 - \rightarrow Support Vector Machine (SVM)
 - \rightarrow Decision Trees & Random Forest

② Unsupervised ML

The training data is unlabeled

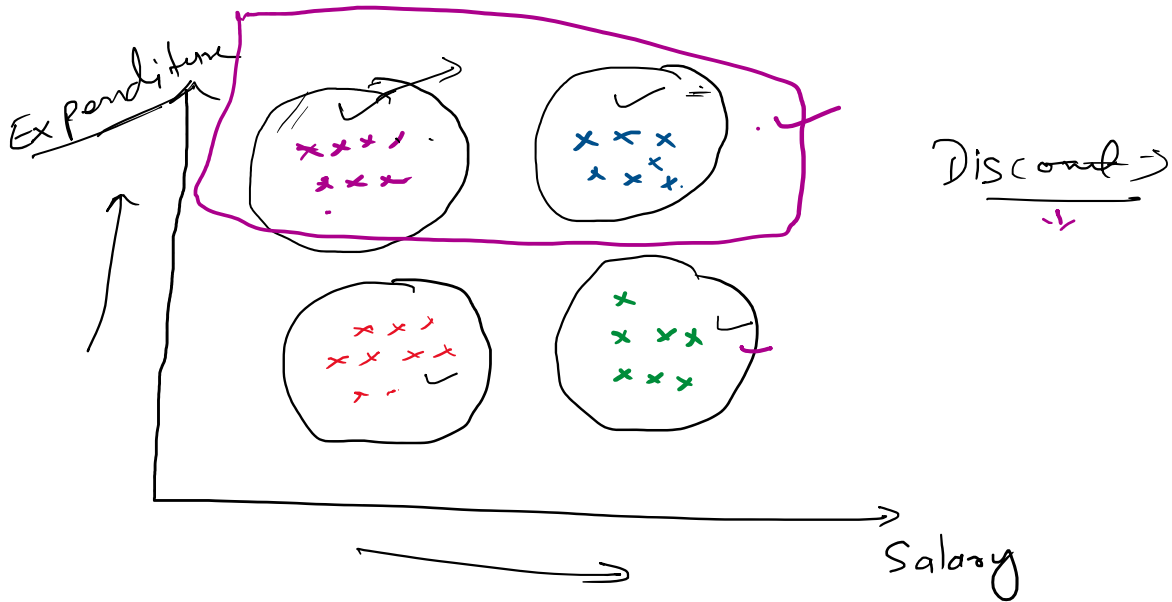
ex Customer Segmentation

Input \rightarrow O/P

Mo \rightarrow o/p

* clusters

\rightarrow group of similar data



ex

① clustering

- \rightarrow K - means
- \rightarrow DBSCAN
- \rightarrow Hierarchical cluster Analysis (HCA)

② Anomaly detection

- \rightarrow One - class SVM
- \rightarrow Isolation forest