**Tak 2 : My notes**

1.1

Machine learning is a subset of AI, Deep Learning is a subset of Machine Learning.

Ai: is a branch of Computer Science that is concerned with building smart & intelligent Machines.

Machine Learning: is a technique to implement AI that can learn from DATA by themselves without being explicitly programmed.

Deep Learning: is a subfield of ML that uses Artificial Neural Networks to learn from the data.

1.2

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

Types of Machine Learning:

* Supervised Learning: the ML algorithm learns from **Labelled** Data
* Unsupervised Learning: the ML algorithm learns from **Unlabeled** Data
* Reinforcement Learning: is an area of ML concerned with how intelligent agents take actions in an environment to maximize its rewards
  1. Environment (chess board)
  2. Agent (computer)
  3. Action
  4. Reward (each step that come closer to win)

1.3

Types of Supervised Learning (2 main types)

* Classification: is about predicting a class or discrete values (Male or Female; True or False)
  + Algorithm:
    1. Decision Tree Classification
    2. Random Forest Classification
    3. K-nearest Neighbor
* Regression: is about predicting a quantity or continuous values (Salary; Age; price)
  + Algorithm:
    1. Logistic Regression
    2. Polynomial Regression
    3. Support Vector Machines

1.4

Types of Unsupervised Learning

* Clustering: is an unsupervised task which involves grouping the similar data points
* Association: is an unsupervised task that is used to find important relationship between data points

Algorithm:

* K-means Clustering
* Hierarchical Clustering
* Principal Component Analysis (PCA)
* Apriori
* Eclat