1. Supervised Machine Learning

Definition:

Supervised learning requires a teacher and involves feeding of data to a model with known outputs that are in tandem with the input data.

Example:

In categorizing emails, specifically in separating the spam ones from the genuine ones. The model involves a data set of examples which are tagged either as ‘spam’ or ‘not spam.’ The features may include content, subject information of the email, and details of the sender among others.

2. Unsupervised Machine Learning

Definition:

unsupervised learning is a technique of training a model on a data set that contains response inputs not labelled. What is sought here is the natural structure that exists between a set of values.

Example:

Clustering is an example of unsupervised learning, therefore, falls under the classification of unsupervised learning tasks. For example, while using clustering, a firm may find out that, it’s customers can be grouped depending on their buying habits. Every customer’s individual data including the purchase history, browsing history and the demographics of the customer will help form groups of customers with similar characteristics in the model.

3. Reinforcement Learning

Definition:

The reinforcement learning (RL) is a method of training an agent in sequence of decisions wherein for correct decision it is rewarded and punished for wrong decisions. The agent can obtain the goal that he wants by accumulating as much reward as possible.

Example:

One of the familiar examples of reinforcement learning would be, training a computer to play a certain game such as chess. It is an RL agent that revises many games and adapts its actions concerning the rewards (winning the game) and penalties (losing the game).

4. Classification, Regression and Clustering:

These are three basic types of predictive models Classification means that it will divide data into different set of classes while regression means that data will be analysed and placed into corresponding value or range of values.

Classification:

Definition:

Classification is one of the classes of supervised learning that involves being in a position to label an input according to the features it has or characteristics that define it.

Example: Being able to decide what genre an image is given that it has present a cat or a dog. The labels are two different classes; either the cat or the dog.

Regression:

Definition:

Regression is one of the types of Supervised learning technique deals with the process of providing estimate of continuous variables on provided input data.

Example:

For instance, one might make a forecast as to what the price of a house might be depending on attributes such as size, location, the number of bedrooms, etc. The resulting measure is a single value, but it is of a continuous nature, which in this case is the price of the house.

Clustering:

Definition:

Clustering for example is an example of an unsupervised learning technique where there is need to categorize a set of objects in a way that actually defines the maximum level of similarity originating from objects belonging to different groups.

Example:

This can be from a mere customer segmentation as explained above. This is done here with an aim of clustering the customers regarding their buying pattern in the supermarket.