Types of ALgorithms in ML

Supervised Learning

Logistic Regression

Logistic regression is a statistical analysis method used to predict a data value based on prior observations of a data set. ... A logistic regression model predicts a dependent data variable by analyzing the relationship between one or more existing independent variables.

K- Nearest Neighbours (K-NN)

K Nearest Neighbour is a simple algorithm that stores all the available cases and classifies the new data or case based on a similarity measure. ... 'k' in KNN is a parameter that refers to the number of nearest neighbours to include in the majority of the voting process.

Support Vector Machines (SVM)

SVM or Support Vector Machine is a linear model for classification and regression problems. It can solve linear and non-linear problems and work well for many practical problems. The idea of SVM is simple: The algorithm creates a line or a hyperplane which separates the data into classes.

Kernel SVM

Kernel Function is a method used to take data as input and transform into the required form of processing data. “Kernel” is used due to set of mathematical functions used in Support Vector Machine provides the window to manipulate the data

Naives Bayes

It is a classification technique based on Bayes' Theorem with an assumption of independence among predictors. In simple terms, a Naive Bayes classifier assumes that the presence of a particular feature in a class is unrelated to the presence of any other feature.

Decision Tree Classification

Decision Trees (DTs) are a non-parametric supervised learning method used for classification and regression. The goal is to create a model that predicts the value of a target variable by learning simple decision rules inferred from the data features.

Random Forest classifcation

The random forest is a classification algorithm consisting of many decisions trees. It uses bagging and feature randomness when building each individual tree to try to create an uncorrelated forest of trees whose prediction by committee is more accurate than that of any individual tree.

Unsupervised Learning

K-means Clustering

k-means clustering tries to group similar kinds of items in form of clusters. It finds the similarity between the items and groups them into the clusters

Hierarchical Clustering

Hierarchical clustering, also known as hierarchical cluster analysis, is an algorithm that groups similar objects into groups called clusters. The endpoint is a set of clusters, where each cluster is distinct from each other cluster, and the objects within each cluster are broadly similar to each other.

Probabilistic Clustering

In probabilistic clustering the assignment of points to clusters is “soft”, in the sense that the membership of a data point x in a cluster Ck is given as a probability, denoted by pk(x). These are subjective probabilities, indicating strength of belief in the event in question.

Semi supervised Learning

Reinforcement Learning

Model Free reinforcement learning

model-free methods primarily rely on learning In reinforcement learning (RL), a model-free algorithm (as opposed to a model-based one) is an algorithm which does not use the transition probability distribution (and the reward function) associated with the Markov decision process (MDP), which, in RL, represents the problem to be solved.

Policy Optimization

Q- Learning

Model Based Reinforcement learning

“Model-based methods rely on planning as their primary component,

Learn the Model

Given the model