**Decision Tree**

Decision tree learning uses a decision tree as a predictive model to go from observations about an item (represented in the branches) to conclusions about the item's target value (represented in the leaves). It is one of the predictive modelling approaches used in statistics, data mining, and machine learning.

Tree models where the target variable can take a discrete set of values are called classification trees; in these tree structures, leaves represent class labels and branches represent conjunctions features that lead to those class labels. Decision trees where the target variable can take continuous values (typically real numbers) are called regression trees. In decision analysis, a decision tree can be used to visually and explicitly represent decisions and decision making. In data mining, a decision tree describes data, but the resulting classification tree can be an input for decision making.

Decision Trees (DTs) are a ***supervised learning*** technique that predicts values of responses by learning decision rules derived from features. They can be used in both a regression and a classification context. For this reason they are sometimes also referred to as Classification and Regression Trees

The ***goal*** of this algorithm is *to create a model that predicts the value of a target variable*, for which the decision tree uses the tree representation to solve the problem in which the leaf node corresponds to a class label and attributes are represented on the internal node of the tree.

Decision trees are among the most popular machine learning algorithms given their intelligibility and simplicity

**Support-vector machines (SVMs)**

Support-vector machines (SVMs), also known as support-vector networks, are a set of related ***supervised learning*** methods used for classification and regression. Given a set of training examples, each marked as belonging to one of two categories, an SVM training algorithm builds a model that predicts whether a new example falls into one category or the other.  An SVM training algorithm is a non-probabilistic, binary, linear classifier, although methods such as Platt scaling exist to use SVM in a probabilistic classification setting. In addition to performing linear classification, SVMs can efficiently perform a non-linear classification using what is called the kernel trick, implicitly mapping their inputs into high-dimensional feature spaces.