Prior Knowledge

Date	17 November 2022
Team ID	PNT2022TMID46686
Project Name	Developing a Flight Delay Prediction Using Machine Learning

Supervised and unsupervised learning:

Supervised learning:

Supervised learning, as the name indicates, has the presence of a supervisor as a teacher. Basically supervised learning is when we teach or train the machine using data that is well labelled. Which means some data is already tagged with the correct answer. After that, the machine is provided with a new set of examples(data) so that the supervised learning algorithm analyses the training data(set of training examples) and produces a correct outcome from labelled data.

Unsupervised learning:

Unsupervised learning is the training of a machine using information that is neither classified nor labeled and allowing the algorithm to act on that information without guidance. Here the task of the machine is to group unsorted information according to similarities, patterns, and differences without any prior training of data.

Regression Classification and Clustering :

Regression:

Regression is often confused with clustering, but it is still different from it. With a regression, no classified labels (such as good or bad, spam or not spam, …) are predicted. Instead, regression outputs continuous, often unbound, numbers. This makes it useful for financial predictions and alike. A common known sample is the prediciton of housing prices, where several values (FEATURES!) are known, such as distance to specific landmarks, plot size,… The algorithms could then predict a price for your house and the amount you can sell it for.

Clustering:

Clustering is an unsupervised technique. With clustering, the algorithm tries to find a pattern in data sets without labels associated with it. This could be a clustering of buying behaviour of customers. Features for this would be the household income, age, … and clusters of different consumers could then be built.

Flask:

Flask is a web framework, it's a Python module that lets you develop web applications easily. It's has a small and easy-to-extend core: it's a micro framework that doesn't include an ORM (Object Relational Manager) or such features.It does have many cool features like url routing, template engine. It is a WSGI web app framework.

Decision Tree:

A decision tree is **a** flowchart-like tree structure where an internal node represents feature(or attribute), the branch represents a decision rule, and each leaf node represents the outcome. The topmost node in a decision tree is known as the root node. It learns to partition on the basis of the attribute value.