

Supervised Learning: -

For given (X, Y):

Training data X and the desired output (label) Y.

Supervised Machine learning models are designed to learn from examples. The output label is known in supervised machine learning models.

Unsupervised learning: -

Training data is X, but there is no target label Y given to us.

Unsupervised Machine learning draw inferences from the training data itself and the final label is not known to us.

Online Learning: -

Training method in which the model is sequentially trained, and training data set is updated during the training phase unlike training the model on whole data set at once. It is usually used in situations where the training data is generated as a function of time. e.g. stock price prediction.

Batch Learning: -

Batch learning is a training method in which the entire training data set is considered into a single step. In Batch learning we consider all the examples for every step of gradient descent.

Model Based Learning: -

Model Based learning is a training approach seeks to create a bespoke solution tailored to each new application. In this approach agent tries to understand the world and tries to create a representation of it. The approach seeks to create a model specific to the problem we're trying to solve instead of trying to solve a problem with one of the fixed set of algorithms.

Instance Based Learning: -

Instance Based learning is a training approach in which a class label/prediction is based on the similarity of the query of its nearest neighbor in the training set. Instance based learning methods do not create an abstraction from specific instances rather it stores all the data and at query, extract the answer by examining the query nearest neighbor