

# Machine Learning

## General

Concepts, Inputs & Attributes

Categorical Variables

Ordinal Variables

Numerical Variables

Cost functions and  
gradient descent

Overfitting / Underfitting

Training, validation  
and test data

Precision vs Recall

Bias & Variance

Lift

## Methods

Supervised Learning

Unsupervised Learning

Ensemble Learning

Reinforcement Learning

Regression

Linear Regression

Poisson Regression

Classification

Classification Rate

Decision Trees

Logistic Regression

Naive Bayes Classifiers

K-Nearest Neighbour

SVM

Gaussian Mixture Models

Q-Learning

Clustering

Hierarchical Clustering

K-Means Clustering

DBSCAN

HDBSCAN

Fuzzy C-Means

Mean Shift

Agglomerative

OPTICS

Association Rule Learning

Apriori Algorithm

ECLAT algorithm

FP Trees

Dimensionality Reduction

Principal Component Analysis (PCA)

Random Projection

NMF

T-SNE

UMAP

Boosting

Bagging

Stacking

## Use Cases

Sentiment Analysis

Collaborative Filtering

Tagging

Prediction

## Tools

Important libraries

scikit-learn

spacy (NLP)