**Supervised Learning**

* Regression
  + Linear Regression
    - Ordinary Least Squares Regression (OLSR)
  + Stepwise Regression
  + Regularization algorithms
    - Least Absolute Shrinkage and Selection Operator (LASSO)
    - Elastic Net
    - Ridge Regression
    - Least-Angle Regression (LARS)
  + Multivariate Adaptive Regression Splines (MARS)
  + Locally Estimated Scatterplot Smoothing (LOESS)
  + Polynomial Regression
  + Polynomials and splines
  + Regularized Linear Models
  + Splines
  + Gradient Descent
* Classification
  + Logistic Regression
  + Decision Trees
    - Classification and Regression Tree (CART)
    - Interative Dichotomiser 3 (ID3)
    - C4.5 and c5.0
    - Chi-squared Automatic Interaction Detection (CHAID)
    - Decision Stump
    - M5
    - Conditional Decision Trees
  + Ensemble Models
    - Boosting
    - Bagging (Bootstrapped Aggregation)
    - AdaBoost
    - Weighted Average (Blending)
    - Stacked Generalization (Stacking)
    - Gradient Boosting Machines
    - Gradient Boosted Regression Trees
    - Random Forests
* Support Vector Machines
* Bayesian
  + Naïve Bayes
  + Gaussian Naïve Bays
  + Multinomial Naïve Bays
  + Average One-Dependence Estimators (AODE)
  + Bayesian Belief Network (BBN)
  + Bayesian Network (BN)
* Discriminant Analysis
  + Linear Discriminant Analysis
  + Nonlinear Discriminant Analysis
  + Flexible Discriminant Analysis
  + Mixture Discriminant Analysis
  + Quadratic Discriminant Analysis

**Unsupervised Learning**

* Clustering
  + K-Means Clustering
  + K-Medians
  + DBSCAN
  + K-Nearest Neighbors
  + Nearest Shrunken centroids
  + Expectation Maximization (EM)
  + Hierarchical Clustering
* Associated Rule Learning Algorithms
  + Apriori Algorithm
  + Market basket analysis
  + Eclat algorithm
* Gaussian Mixture models
* Dimensionality Reduction
  + Principal Component Analysis (PCA)
  + Principal Component Regression (PCR)
  + Partial Least Squares Regression (PLSR)
  + Multidimensional Scaling (MDS)
  + Projection Pursuit

**Other**

* Kernel Methods
* Manifold Learning
* Markov graphs
* Markov Models
* Network Graphs
* Undirected Graphical models
* Neural Networks
* Outlier Detection
* Partial Least Squares
* Penalized Models

Introduction to Machine Learning with Python

* Supervised Learning
  + K-Nearest-Neighbors
  + Linear Models
  + Naïve Bayes Classifiers
  + Decision Trees
  + Ensembles of Decision Trees
  + Support Vector Machines
  + Neural Networks
* Unsupervised Learning
  + Principal Component Analysis
  + Clustering
  + DBSCAN

Hands on Machine Learning

* Linear Regression
* Gradient Descent
* Polynomial Regression
* Regularized Linear Models
  + Ridge Regression
  + Lasso Regression
  + Elastic Net
* Logistic Regression
* Support Vector Machines
* Decision Trees
* Ensemble models and random forests
* PCA
* Clustering
  + K-Means
  + DBSCAN
* Gaussian
* Neural Networks

Data Science for Business

* Regression Analysis
* Trees
* Linear Discriminant Functions
* Support Vector Machines
* Neural Networks
* Nearest-Neighbors
* Clustering

Data Smart

* Cluster Analysis
  + K-means
* Naïve Bayes
* Network Graphs
* Regression
* Ensemble Models
* Outlier Detection
* K-Nearest Neighbors

Applied Predictive Modeling

* Linear Regression
* Neural Networks
* Multivariate Adaptive Regression Splines
* Support Vector Machines
* K-nearest neighbors
* Regression trees
* Logistic Regression
* Linear Discriminant Analysis
* Partial Least Squares
* Penalized Models
* Nearest Shrunken centroids
* Nonlinear Discriminant Analysis
* Neural Networks
* Flexible Discriminant Analysis
* Naïve Bayes
* Classification trees

Machine Learning with Python Cookbook

* PCA
* Linear Regression
* Trees and Forests
* K-Nearest Neighbors
* Logistic Regression
* Support Vector Machines
* Naïve Bayes
* Clustering
* Neural Networks

Python Data Science Handbook

* Naïve Bayes
* Linear Regression
* Support Vector Machines
* Decision trees and random forests
* PCA
* Manifold Learning
* K-means clustering
* Gaussian Mixture models
* Kernel Density Estimation

Pattern Recognition and Machine Learning

* Linear regression
* Logistic regression
* Neural Networks
* Kernel Methods
* Bayesian Networks
* K-means clustering
* Mixtures of Gaussians
* PCA
* Markov Models

Machine Learning for Predictive Analytics

* Decision Trees
* K-Nearest Neighbors
* Naive Bayes
* Linear Regression

Intro to Statistical Learning

* Linear regression
* Classification
  + Logistic Regression
  + Linear Discriminant Analysis
  + K-Nearest Neighbors
* Polynomial regression
* Splines
* Tree-based methods
* Support Vector Machines
* PCA
* Clustering

Elements of Statistical Learning

* Linear Regression
* Linear Discriminant Analysis
* Logistic Regression
* Polynomials and splines
* Kernel Smoothing methods
* Tree-based methods
* Neural Networks
* Support Vector Machines
* Flexible discriminants
* K-means clustering
* Gaussian mixtures
* K-Nearest Neighbors
* Association Rules
  + Market basket analysis
  + Apriori Algorithm
* Cluster Analysis
* Principal Components
* Random Forests
* Ensemble learning
* Undirected Graphical models
  + Markov graphs

2018\_DataScienceAndPredictiveAnalytics

* Dimensionality Reduction
  + PCA
  + Singular Value Decomponsition (SVD)
* K-Nearest Neighbors
* Naïve Bayes
* Linear Discriminant Analysis
* Decision Trees
* Multivariate linear modeling
* Neural Networks
* Support Vector Machines
* Apriori Association Rules
* Clustering
  + K-Means
  + Hierarchical
  + Gaussian mixture

2017\_TheDataScienceDesignManual

* Linear Regression
* Logistic Regression
* Nearest Neighbor classification
* Graphs, networks, and distances
* Clustering
  + K-Means
  + Agglomerative
  + Compairing clusterings
  + Similarity Graphs
* Naïve Bayes
* Decision Trees
* Boosting and ensemble Learning
* Support Vector Machines
* Deep Learning

2017\_IntroductionToDataScience

* Support Vector Machines
* Random Forest
* Regression Analysis
* Clustering
* Network Analysis

2017\_AnIntroductionToMachinelearning

* Bayesian Classifiers
* Nearest-Neighbor Classifiers
* Linear and Polynomial Classifiers
* Neural Networks
* Decision Trees
* Ensembles (voting assemblies)
* Cluster Analysis
  + K-Means
  + Hierarchical Aggregation

2016\_StatisticalLearningFromARegressionPerspective

* Linear Regression
* Splines, Smoothers, and Kernels
* Classification and Regression Trees
* Bagging
* Random Forests
* Boosting
* Support Vector Machines

2016\_PrinciplesOfDataMining

* Classification
  + Naïve Bayes
  + Nearest Neighbors
* Decision Trees
* Ensemble Classification
* Association Rules
  + Apriori
* Clustering
  + K-Means
  + Agglomerative Hierarchical Clustering
* Classifying Streaming Data

MLBOOK

* Neural Networks
* Nearest Neighbors
* Decision Trees
* Clustering Methods
* Temporal-difference learning
* Delayed Reinforcement Learning

Machine Learning – A Probabilistic Perspective

* Generative models
  + Bayesian concept learning
  + Beta-binomial model
  + Dirichlet-multinomial model
  + Naïve Bayes classifiers
* Gaussian models
  + Discriminant analysis
  + Linear Gaussian systems
* Bayesian statistics
  + Bayesian model selection
  + Priors
  + Hierarchical Bayes
  + Empirical Bayes
  + Bayesian decision theory
* Linear Regression
  + Maximum likelihood estimation (least squares)
  + Ridge regression
  + Bayesian linear regression
* Logistic Regression
  + Bayesian logistic regression
  + Online learning and stochastic optimization
  + Generative vs discriminative classifiers
* Directed graphical models
* Mixture models and the EM algorithm
* Latent linear models
  + Factor analysis
  + PCA
* Kernels
* Gaussian processes
* Adaptive basis function models
  + Classification and regression trees (CART)
  + Generalized additive models
  + Boosting
  + Feedforward neural networks
  + Ensemble learning
* Markov and hidden Markov models
* State space models
* Undirected graphical models (Markov random fields)
* Inferences
  + Exact inference for graphical models
  + Variational
  + Monte Carlo
  + Markov chain Monte Carlo
* Clustering
* Graphical model structure learning
* Latent variable models
  + Latent Dirichlet allocation (LDA)
  + LVMs for graph structured data
  + LVMs for relational data
  + Restricted Boltzmann machines
* Deep Learning