Machine Learning and AI

- Methods and Algorithms -

Personnal Notes

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Todo list

Intro

This document will use the following classification for the machine learning algorithms. However their might be some changes. For exemple, some of them will be part of the commons algorithms and not from their real class.

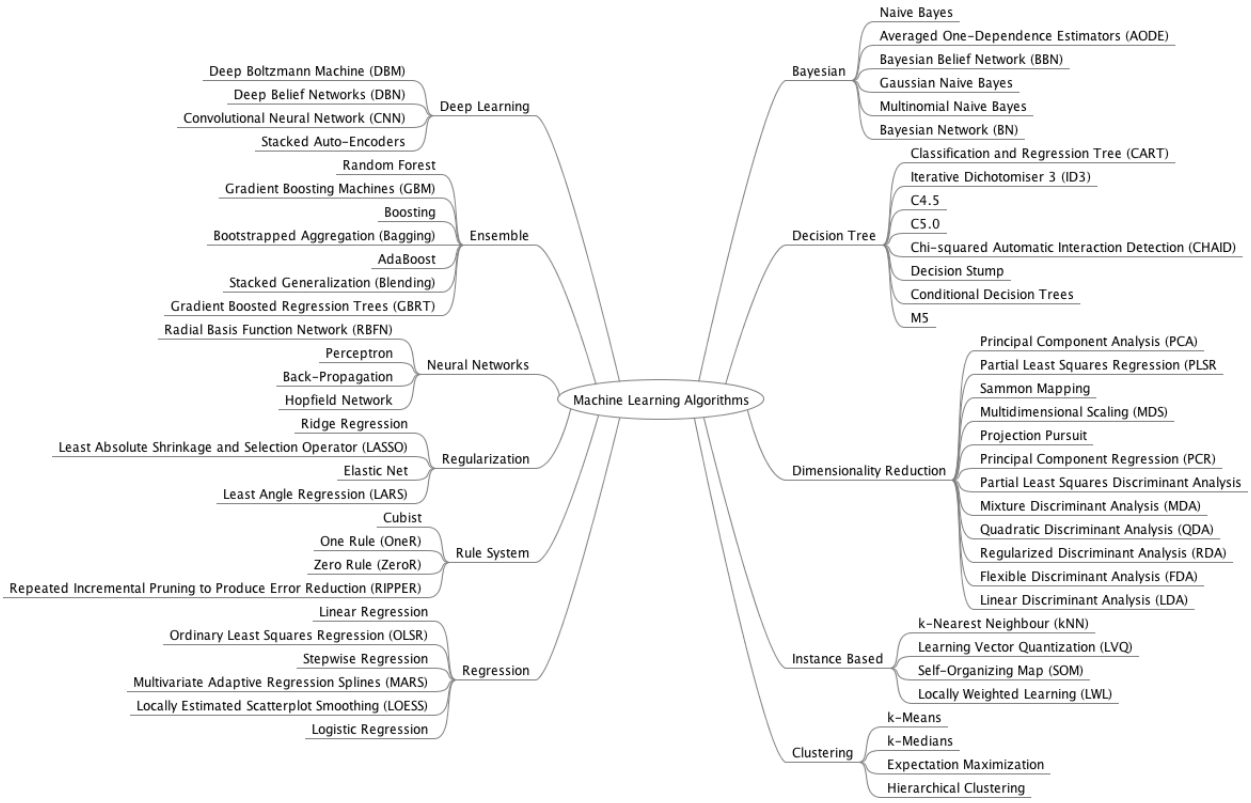

Figure 1 – Simple graph for algorithms classification in ML

Chapter 1

Common Machine Learning algorithms

This chapter is dedicated to the most common ML algorithms, a major part of the notes come from the mml-books.com

Add bibtex reference

1.1 Linear Regression

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1.1.1 Maximum Likelihood Estimation (MLE)

Closed-Form Solution

- Problem to Solve
- Algorithm
- Properties
- Use Cases

Maximum A Posteriori Estimation (MAP)

1.2 Gradient Descent

1.2.1 Simple Gradient Descent

1.2.2 Gradient Descent with Momentum

1.2.3 Stochastic Gradient Descent

1.3 Model Selection and Validation

1.3.1 Cross-Validation

1.3.2 Marginal Likelihood

1.4 Bayesian Linear Regression

1.4.1 Mean and Variance

1.4.2 Sample function