Supervised Learning - Machine Learning Algorithms -

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Supervised Learning

- Each dataset point has a target variable
- Supervised learning is to build a model to predict the target variable with the feature values
- Two types of supervised learning
 - ➤ Regression Analysis
 - The target variable is continuous
 - **→**Classification
 - The target variable is discrete (classes)

Machine Learning Algorithms for Regression Analysis

- Parametric
 - Non-Probabilistic
 - Linear regression LSS approach
 - **→** Probabilistic
 - Parameters are not random variables
 - ✓ Linear regression MLE approach
 - Parameters are random variables
 - ✓ Bayesian regression
- Non-Parametric
 - **→** Probabilistic
 - Gaussian process (*)

Machine Learning Algorithms for Classification

- Parametric
 - ► Non-Probabilistic
 - Support Vector Machine (SVM)
 - Binary Decision Tree
 - **→** Probabilistic
 - Parameters are not random variables
 - ✓ Logistic Regression
 - Parameters are random variables
 - ✓ Bayer's Classifier
- Non-Parametric
 - ► Non-Probabilistic
 - K-Nearest Neighbors (KNN)
 - **→**Probabilistic
 - Gaussian process (*)