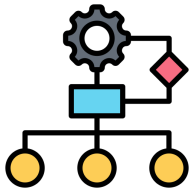
Theoretical Foundation

1. Probability and Statistics **(Lec 3)**
2. Linear Algebra **(Lec 3 & Lec 4)**
3. Set and Functions **(Lec 4)**
4. Optimization **(Lec 5 & 6 & 8)**



Models Designs

Supervised Learning (Lec 1)

1. Linear Model **(Lec 5,6)**
2. Polynomial **(Lec 6)**
3. Decision Tree **(Lec 9)**
4. Naive Bayes **(Lec 3)**
5. Neural Network **(Lec 12)**
6. Nearest Neighbor **(Lec 1)**

Unsupervised Learning (Lec 1)

1. Clustering (Lec 1 & Lec 11)

Tasks (Lec 1)

1. Regression
2. Classification

Data Engineering & Processing (Lec 2)

Wrangling & Cleaning & visualize

Model Training

Objectives

(1) Cost function **(Lec 5)** (2) Regularization **(Lec 6 & 7)**

Optimization

(1) Least Square **(Lec 5)** (2) Gradient Descent **(Lec 5 & 8)**

Model Evaluation

Evaluate or Refine the Model

Performance Measurements **(Lec 10)**
Underfitting & Over-fitting **(Lec 7)**
bias/variance trade-off **(Lec 7)**