1. Introduction to Machine Learning: What and Why, Applications of Machine Learning, Types of Machine Learning, Challenges in Machine Learning
2. End-to-end Machine Learning: Framing the ML Problem. Data Types, Pre-processing, Visualization and Analysis
3. End-to-end Machine Learning: Model Selection and Training for Prediction and Classification, Evaluation, Machine Learning Pipeline.
4. Linear Prediction Models: Linear Regression, Gradient Descent and Variants, Regularization, Bias Vs. Variance
5. Classification Models I: Naïve Bayes classification, Applications in text and image classification
6. Classification Models I: Logistic Regression, Log Loss error function, Optimization using gradient descent, Feature transformation for nonlinear classification
7. Classification Models I: Support Vector Machine. Margin maximization. Non-linear SVM. Kernel Function.