

10-601 Machine Learning

Fall 2010

Instructor: Ziv-Bar Joseph
Machine Learning Department
School of Computer Science
Carnegie Mellon University

Topics

- General topics
- Supervised learning
- Unsupervised learning
- Probabilistic representations

Introduction to machine learning and probability

Density estimation

Classification

Bayes and Naive Bayes classifiers

Linear and logistic regression

Support vector machines

Boosting

Learning theory

Decision trees

Neural networks

Hierarchical clustering

Kmeans and Gaussian mixture model

Model selection

Feature selection

Semi-supervised learning

Bayesian networks

Hidden Markov models

Markov decision process

Principal components analysis

Singular value decomposition

Applications of machine learning in industry and computational biology