



Introductory Course of Machine Learning



MACHINE LEARNING INTRODUCTORY COURSE

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Course Content

Section 1: Machine Learning Basics

- **Lesson 1:** Introduction
- **Lesson 2:** Linear Regression with One Variable
- **Lesson 3:** Linear Algebra Review
- **Lesson 4:** Linear Regression with Multiple Variables
- **Lesson 5:** Matlab for Machine Learning
- **Lesson 6:** Logistic Regression
- **Lesson 7:** Regularization



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- **Lesson 8:** Advice for Applying Machine Learning
- **Lesson 9:** Machine Learning System Design
- **Lesson 10:** Support Vector Machines
- **Lesson 11:** Clustering
- **Lesson 12:** Dimensionality Reduction
- **Lesson 13:** Anomaly Detection
- **Lesson 14:** Recommender Systems
- **Lesson 15:** Large Scale Machine Learning



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Section 2: Other Machine Learning Algorithms

- **Lesson 1:** K-Nearest Neighbor (KNN) Algorithm
- **Lesson 2:** Naïve Bayes Classifier Algorithm
- **Lesson 3:** Decision Tree Classification Algorithm
- **Lesson 4:** Random Forest Algorithm
- **Lesson 5:** Hierarchical Clustering
- **Lesson 6:** Apriori Algorithm



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- **Lesson 7:** Association Rule Learning
- **Lesson 8:** What is P-Value?
- **Lesson 9:** Cross-Validation in Machine Learning



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Section 3: Neural Networks

- **Lesson 1:** Basic Concepts
- **Lesson 2:** Building Blocks
- **Lesson 3:** Learning & Adaptation
- **Lesson 4:** Supervised Learning
- **Lesson 5:** Unsupervised Learning
- **Lesson 6:** Learning Vector Quantization
- **Lesson 7:** Adaptive Resonance Theory



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- **Lesson 8:** Kohonen Self-Organizing Feature Maps
- **Lesson 9:** Associate Memory Network
- **Lesson 10:** Hopfield Networks
- **Lesson 11:** Boltzmann Machine
- **Lesson 12:** Brain-State-in-a-Box Network
- **Lesson 13:** Optimization Using Hopfield Network
- **Lesson 14:** Other Optimization Techniques
- **Lesson 15:** Applications of Neural Networks
- **Lesson 16:** Implementation of Neural Networks in “**Matlab**”