

## CS 584: Machine Learning

### Objectives

- Covers basic algorithms and techniques used in Machine Learning, to give the student a good basis for work in this highly relevant field.

### Prerequisites

- CS 480, linear algebra, probability theory.

### Syllabus

• Introduction	1.5 hours
• Version space learning; Computational learning theory	4.0 hours
• PAC-learning; VC-dimension; On-line learning; Winnow	4.0 hours
• Perceptrons; Neural Networks; Backpropagation	6.0 hours
• Genetic algorithms	3.5 hours
• Bayesian learning	3.5 hours
• Experimental design	3.0 hours
• Decision-tree learning	3.5 hours
• Covering algorithms for learning rule sets	3.0 hours
• Minimum description length	3.5 hours
• Clustering algorithms	3.0 hours
• Reinforcement learning	3.5 hours
• Markov decision processes	3.0 hours
Total	45 hours

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