

CS 559: Machine Learning: Fundamentals and Applications

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Textbook

Pattern Classification (2nd Edition) (Hardcover)
by Richard O. Duda, Peter E. Hart and David G. Stork
Publisher: Wiley-Interscience; 2 edition (October 2000)
ISBN-10: 0471056693
ISBN-13: 978-0471056690

Office Hours: TBD (e-mail me with your preference if you can't make the first class)

Evaluation

Project 35%

4 homework sets 20%

Midterm 20%

Final 25%

Week 1: Introduction, including probability theory background (DHS Ch. 1 + Appendix A.4)

Week 2: Bayesian decision theory (DHS Ch. 2)

Weeks 3-4: Maximum likelihood, Bayesian parameter estimation, Expectation Maximization (DHS Ch.3)

Week 5: Principal Component Analysis (DHS Ch.3 + notes)

Week 6: Nonparametric techniques (DHS Ch. 4)

Week 7: Linear Discriminant Functions and Perceptron (DHS Ch. 5)

Week 8: Midterm and Support Vector Machines (DHS Ch. 5 + notes)

Week 9: Project proposals and Support Vector Machines (DHS Ch. 5 + notes)

Week 10: Graphical Models and Markov Random Fields (notes)

Week 11: Bags of features and learning for computer vision (notes)

Week 12: Boosting (DHS Ch.9 + notes)

Week 13: Unsupervised methods and clustering (DHS Ch.10)

Week 14: Project presentations