STAT 881 Advanced Statistical Learning
Spring 2008

Lecture: MW 9:00 -10:18AM in SO 241

Instructor: Yoonkyung Lee
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Office Hours: M 3:30 - 4:18PM, W 10:30 - 11:18AM or by appointment
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Text: No textbook is required for this course.
References: *A Probabilistic Theory of Pattern Recognition* by Devroye, Györfi, and Lugosi.
Statistical Learning Theory by Vapnik.
The following survey papers on statistical learning theory are available at the course web page:
Learning Pattern Classification - A Survey by Kulkarni, Lugosi, and Venkatesh.
Introduction to statistical learning theory by Bousquet, Boucheron, and Lugosi.

Web page: `http://www.stat.osu.edu/~yklee/881/`
The course web page will be linked from the Statistics department's web page and the instructor's personal web page.

Prerequisites: Some knowledge of statistical learning methods (760, previously 894) and probability theory (722) or permission of instructor.

Course Description: Statistics 881 aims to provide an introduction to statistical learning theory. It will focus on formulation of prediction problems, in particular, classification in a probabilistic framework and how to estimate and analyze the performance of statistical and computational learning methods. Concepts and techniques for the theoretical analysis of such methods will be developed. Topics include notion of consistency, concentration inequalities, uniform convergence, empirical risk minimization, convex optimization, and general treatment of kernel methods and boosting among others.

Grading: There will be no in-class written exam. Course grades will be assigned on the basis of performance on homework assignments (70%) and the take-home final (30%).

Homework assignments: Homework will involve mostly analytical exercises. Assignments will be given approximately biweekly, and only selected problems will be graded. Homework assignments and solutions will be posted on the course web page.