Statistics 260: Statistical Inference with Missing Data

MW 2:00-3:20pm, ICS 243

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Office hours: Tuesday 3:00-3:50pm (at Bren Hall 2228)

Course goals: Methods for handling missing data sets with general patterns of missing data, emphasizing likelihood-based and Bayesian approaches. Theory and application of iterative maximization methods (e.g., EM and ECM algorithms), iterative simulation methods (i.e., Markov chain Monte Carlo), and multiple imputation. Examples under discussion include applications from the health sciences and social sciences.

Prerequisites: A course in intermediate probability theory (Stat 200A), a course in theoretical statistics (Stat 200B), knowledge of linear algebra, and some exposure to statistical computing packages such as R.

Grading and Course Requirements: There will be 3 assignments (each worth 15% of your total grade) and a final project. Students are to present assignments in class. In addition, each student or group of students will prepare a written project. You will be given a project topic (and the corresponding dataset), though you may work on a project of your choosing conditional on the instructor’s approval. The written project is worth 40% of the total grade. Each student or group of students will give a short presentation on his/her project, and the presentation is worth 15% of the total grade.

Textbook: