CS 5960/6960: Nonparametric Methods
Administrative Details and Syllabus
Spring 2009

Course Web Page: http://www.coe.utah.edu/~cs5960-02/

Introduction. The focus of this class is computationally intensive methods in statistics, most of which are nonparametric, that is, they do not require the input data to come from a known parametric distribution. These techniques are important in computer science applications including simulation, visualization, graphics, computer vision, and image processing. We will use R, an open-source statistical software package and programming language (http://www.r-project.org).

Instructor. Tom Fletcher. Office: 4686 WEB. Email: fletcher@cs.utah.edu. Office Hours: Wed. 2:00-3:00pm, or by appointment.

Class Meetings. Mondays and Wednesdays, 10:45 am – 12:05 pm, in MEB 3147.

Mailing List. Important announcements, such as assignment corrections or deadline changes, will be sent to the class mailing list (cs5960-02@list.eng.utah.edu). Only the instructor may send email to this address. Sign up for the mailing list here: https://sympa.eng.utah.edu/sympa/info/cs5960-02.


Grading Policy. The final course grade is based on the homework assignments (40% total), quizzes (25% total), and the final project (35%). Letter grades are assigned as follows:

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Homework assignments are due at 11:59pm on the given due date. All assignments must be submitted electronically via handin. Written assignments should be in pdf format, while coding assignments should be R files.

If you believe there is an error in grading (homeworks or quizzes), you may request a regrading within one week of receiving your grade. Requests must be made in writing, explaining clearly why you think your answer is correct.

Working Together. You are welcome to discuss the homework problems with your fellow classmates. However, you must write up your own solutions. Do not read another person’s write-up, and do not show your write-up to anyone else. Copying another student’s solutions will be considered cheating. Also, it is important that you first try to solve problems on your own, and discuss them only when you are stuck or to reassure yourself about your answer. If you are unable to solve problems on your own, you will not perform well on the quizzes.

Of course, there must be no collaboration during examinations. If a student is caught cheating on a homework or exam, they will receive a failing grade for the course. For a detailed description of
the university policy on cheating, please see the University of Utah Student Code: http://www.admin.utah.edu/ppmanual/8/8-10.html.

**Students with Disabilities.** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

**Syllabus.** The following topics will be covered. See the course web page for a detailed schedule.

- *Generating Random Variables*
- *Monte Carlo Methods*
- *The Bootstrap*
- *The Jacknife*
- *Permutation Tests*
- *Nonparametric Density Estimation*
- *Nonparametric Regression*
- *Markov Chain Monte Carlo*
- *Robust Statistics*