CS 269: Mathematical Frameworks for Social Computing
Winter 2012

Course Overview

This seminar-style course will explore theoretical models and frameworks for social computing. We will examine ways in which techniques from learning theory, game theory, and theoretical computer science can be used to model and analyze social computing systems such as prediction markets, crowdsourcing markets, and question and answer forums. Students will be expected to read and present research papers on these topics and complete an open-ended course project.

Who should take this course? This course is primarily intended for students interested in learning about the latest research on theoretical issues that arise in social computing systems. Students who enroll should be very familiar with the basics of probability theory (roughly at the level of the first half of CS 112), comfortable reading and writing formal mathematical proofs, familiar with concepts from algorithms (e.g., big O notation), comfortable reading and understanding mathematical research papers, and eager to get involved in class discussions. A background in learning theory and/or game theory will be helpful, but is not required.

Who should not take this course? This course requires students to read and actively discuss several theoretical research papers each week. Students without the mathematical background or interest to do so will struggle with this course. If you are unsure about your background, try reading some of the papers from the reading list and see what you think.

Meeting Times

Lectures: Tuesdays & Thursdays, 2:00-3:50pm, Boelter 5422
Attendance at lectures is required.

Staff Contact Info and Office Hours

Instructor: Prof. Jenn Wortman Vaughan
Office Hours: Email Jenn for an appointment
Contact: jenn at cs

Breakdown of Grades

Grades will be based on the following components:

- *Paper Reviews* (35%): Students are required to complete the required reading and submit a summary by 11:59pm on the night before each class using the form provided on the website. To receive full credit, you must make a reasonable attempt at answering every question. Half credit will be assigned to students who submit incomplete responses. No credit will be given for responses submitted after midnight. Reviews must contain an answer to every question, and these answers must be in your own words, not copied from the text of the paper. You may not need more than 1-2 sentences per answer, but it should be clear that you have put thought into every question.

- *Presentation and Leading of Discussion* (25%): Each student will be required to present a research paper and lead the class discussion twice during the quarter. Presentations may be done in groups of two or three, depending on the size of the class.
- *Research Project* (40%): Projects consist of a written report and in-class presentation. Depending on the size of the class, it might be required that projects be completed in groups of 2-3 students. Detailed guidelines will be made available later in the quarter.

Textbook & Reading Material

There is no required textbook for this course. Links to required reading material and additional reading material are posted on the course website.

Academic Honesty Policy

All students are expected to meet the guidelines laid out in UCLA's Student Guide to Academic Integrity. Any student suspected of academic dishonesty will be referred to the Dean of Students for disciplinary action.

Course Website

All of this information and more is available on the course website:

`http://www.cs.ucla.edu/~jenn/courses/W12.html`

Please check this website regularly for reading assignments and announcements.