Psychology 135 A,B,C / Psych 235 A,B,C
Memory and Decision-Making Research

Instructors: Mark Steyvers

Overview

This course covers a broad range of theoretical, empirical and modeling topics concerning research in memory and decision-making, including (i) optimal and human decision-making on reinforcement learning problems, (ii) Bayesian and other accounts of reconstructive memory, including applications to memory assessment (iii) sequential sampling model of human decision-making, (iv) learning memory representations from similarity and judgment data, (v) modeling individual differences in memory and decision-making, (vi) topic models and machine learning methods for extracting information from corpora, (viii) large scale modeling of human behavior from real-world databases, and (ix) Bayesian graphical modeling methods, including hierarchical and latent mixture modeling.

Requirements

Graduate (4.0 unit course)

- *Weekly meetings.* Students will be required to attend weekly 1.5-hour meetings. These meetings will involve presentations on topics relevant to current research, and research progress updates. Students are expected to participate in meeting discussions. (25% of grade)
- *Oral presentations.* Students will be required to give conference-style presentations on their research progress at least twice each quarter, including a question-and-answer session. Students are required to hand in the slides and other materials used in these presentations. (25% of grade)
- *Lab practicum.* Students are expected to put in a minimum of 6 hours per week in hands on laboratory research, which may involve stimulus development, experiment set up, subject testing, and data analysis. (25% of grade)
- *Research paper.* At the end of each quarter, students will turn in a written research report describing their research during that quarter, including background, methods, results, and discussion. Ideally, this paper will take the form of a manuscript suitable for submission to a peer reviewed conference or journal. For students whose projects are not yet complete, the report can take the form of a proposal or literature review. (25% of grade)

Undergraduate (4.0 unit course)

- *Weekly meetings.* Students will be required to attend weekly 1.5-hour meetings. These meetings will involve presentations on topics relevant to current research, student presentations of research papers, and research progress updates. Students are expected to participate in meeting discussions. (20% of grade)

- *Oral presentations*. Students will be required to give conference-style presentations on their research progress each quarter, including a question-and-answer session. Students are required to hand in the slides and other materials used in these presentations. (40% of grade)
- *Research paper.* At the end of each quarter, students will turn in a written research report describing their research during that quarter, including background, methods, results, and discussion. For students whose projects are not yet complete, the report can take the form of a proposal or literature review. (40% of grade)

Grading

Grades will be based on level of participation (attendance, completion of requirements, involvement in group discussions), and quality of work (clarity and thoroughness of presentations and written reports, quality of lab work) using the percentages detailed above.