Syllabus P269 (68850)
Special Topics / Human Performance:
Computational Models of Memory

Time/Location. Spring Quarter 2003, Wednesday 9:30-12pm (tentatively). Organizational meeting: Wed. April 2, 9:30am in room ???. Contact instructor for additional information.

Instructor. Mark Steyvers. Office: 2109, SSPA. Email: msteyver@uci.edu.

Course Description. The goal of this course is to:

1) review some basic empirical findings in episodic (long-term) memory.
2) review several prominent computational memory models. We will contrast different modeling styles such as connectionist vs. Bayesian models and process oriented vs. descriptive models.
3) discuss new directions of research depending on the interests of students. One possibility is to review recent fMRI research relevant to memory modeling. Students are encouraged to propose relevant papers to read – in order to have time to discuss new papers, we might skip some papers on the current reading list.

The format of the course will be discussions and presentations by students. Implementation of various memory models is encouraged but not necessary.

Pdfs of all papers will be available on a website to be announced.

Grading Basis. A short paper will be due at final’s week. Papers can be written about any topic relevant to the course. One possibility is to report on a simulation of a computational memory model. Another is to report on empirical results (behavioral or brain imaging) that might constrain or inform theoretical models of memory. Finally, it is possible to write a review paper contrasting several memory models.

Reading List (subject to change)

Introduction


Global Memory Models (and alternatives)


Adaptive Nature of Memory – Models for the environment


Theories of Context


Semantic aspects of Language & Memory


Connectionist Models


Dual Process Models
