

Syllabus

COMPUTATIONAL MODELS OF MIND (COGS511 - 1)

Course Objectives:

Suitable for graduate students interested in using computational modelling for a better understanding of cognition.

Online Contents:

Face to face contents:

- Cognitive Modelling: general overview
- Symbolic, Connectionist and Dynamic Modelling Paradigms
- Cognitive Architectures, SOAR and ACT-R
- Cognitive Modelling Tools: COGENT
- Evaluation of Cognitive Models
- Problems with Cognitive Modelling
- Modelling in Various Domains: Language Acquisition, Neuropsychology, Analogical Reasoning etc.

Text Book:

No textbook

References:

- Sun, R. (ed), 2008. The Cambridge Handbook of Computational Psychology. Cambridge University Press. (Relevant chapters will be made available in addition to course pack).
- Polk, T. and C. M. Seifert (eds), 2002. Cognitive Modeling. MIT Press. (Various articles from this book are already in the course pack; on 3-day reserve)
- Cooper, R. et al., 2002. Modelling High-Level Cognitive Processes. L. Erlbaum Associates.
- Scarborough and Sternberg (eds.), 1998. An Invitation to Cognitive Science - 2nd Edition: Vol. 4: Methods, Models, and Conceptual Issues. Cambridge, MA: MIT Press.
- Russell and Norvig, 2003. Artificial Intelligence: A Modern Approach, 2nd Edition (on 3-day reserve, for background in Artificial Intelligence techniques)
- McLeod, Plunkett and Rolls, 1998. Introduction to Connectionist Modelling of Cognitive Processes. Oxford, UK: Oxford University Press.
- Lecture slides will be available from METU Online.

Grading Policy:

Group Project 40% (Presentation 15%, Final Version of the Written Paper 20%, Progress 5%, groups notes possibly individualized)

Individual Modeling Reviews 40% (Discussion 15%, Written Report 25%)

Homework 10%

Participation (including online and inclass activities): 10%