CSP 581: Applied AI Programming

Texts

- Peter Norvig, *Paradigms of AI Programming: Case Studies in Common Lisp*
- Steven L. Tanimoto, *The Elements of Artificial Intelligence Using Common Lisp*
- Abelson, Sussman, and Sussman, *The Structure and Interpretation of Computer Programs*

Objectives

- To learn AI programming algorithms and techniques in Common Lisp.
- Time is split between Common Lisp topics and discussions of implementation strategies for AI algorithms.

Prerequisites

- CS 440 or equivalent.

Syllabus

- Common Lisp basics: 3 hours
- First-Class and Higher-Order Functions: 3 hours
- Anonymous Functions and Closures: 3 hours
- CLOS: 2 hours
- Symbolic Mathematics: MACSYMA: 3 hours
- Constraint Satisfaction: 3 hours
- Natural Language Processing and Parsing: 5 hours
- Macros and Microlanguages: 3 hours
- Rule-Based Expert Systems and RETE: 5 hours
- Memoization: 2 hours
- Partial Evaluation: 2 hours
- Meta-Circular Evaluation: 4 hours
- Compiling LISP Programs: 4 hours

Total: 42 hours