CPSC 532D: Topics in Artificial Intelligence

Stochastic Search Algorithms

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General information

Web page: www.cs.ubc.ca/labs/beta/Courses/CPSC532D-05

Time: Tue+Thu 11:00-12:30

Resources:

- course web page,
- box in the ICICS Reading Room,
- β-Lab (www.cs.ubc.ca/labs/beta),
- Holger’s brain – pick it :-)}
Course Outline (1)

Part 1: Foundations and Basics

- Module 1: Introduction
- Module 2: “Simple” SLS Algorithms
- Module 3: Hybrid SLS Algorithms
- Module 4: Population-based SLS Algorithms
- Module 5: Generalised Local Search Machines
- Module 6: Empirical Analysis of Stochastic Search Algorithms
- Module 7: Search Space Analysis
Course Outline (2)

Part 2: Applications

- Module 8: SAT and Constraint Satisfaction
- Module 9: MaxSAT (and MaxCSP)
- Module 10: The Travelling Salesperson Problem
- Module 11: Scheduling Problems
- Module 12: Other Combinatorial Problems
Final grades are determined as follows:

- **homework assignments** (simple problems and questions, hands-on use of tools, literature research; approx. one every 2–3 modules) – ca. 25%
- **topic presentation and discussion** (students prepare the presentation and lead discussions on course topics, based on book chapters and papers) – ca. 15%
- **course project** (reports and presentations) – ca. 60%
Course Projects

Project groups:
Ideally, 2 students; group size 1–3 may be possible

Timetable for course projects:

01/18  project ideas available
02/08  students submit short project proposals
03/15  students submit short progress report
04/14  students submit final report

Second half of April: project presentations