DD2380 Artificial Intelligence 6.0 credits

Artificiell intelligens

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for DD2380 valid from Autumn 2008

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completing this course the student will be able to

- analyse and solve problems involving various forms of search algorithms, including the design of heuristic functions to improve the efficiency of such solutions
- formulate and process knowledge in propositional and first-order logic
- formulate and solve problems with uncertain information using Bayesian approaches
- explain the basics for communication between agents and work with grammars to parse and generate languages and compute models for probabilistic language processing.
- relate the material to some of the currently active research problems in computer vision and robotics
- develop systems that utilize artificial intelligence.

Besides the purely technical aspects, the course also provides the student with

- practical experience in working with problems both individually and in groups
- experience in presenting results both in writing and orally
- experience with project based work

Course contents

The following areas will be treated in the course: problem solving with search algorithms, heuristics and games, knowledge representation (logic), representing uncertain knowledge and reasoning (Bayesian networks), decision and utility theory. Examples of using artificial intelligence methods in computer vision, robotics, etc will be given.

Course literature

Artificial Intelligence: A Modern Approach (Second Edition) by Stuart J. Russell and Peter Norvig, Prentice Hall (2003), ISBN 0-13790-395-2

Examination

- INL1 - Assignment, 3.0 credits, grading scale: P, F
- PRO1 - Project, 3.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Assignments (INLA; 3 university credits) and an examination project (PROA; 3 university credits).

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.