DD2434 Machine Learning, Advanced Course 7.5 credits

Maskininlärning, avancerad kurs

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

On 04/15/2021, the Head of the EECS School has decided to establish this official course syllabus to apply from autumn semester 2021, registration number: J-2021-0915.

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Language of instruction

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

Intended learning outcomes

After passing the course, the student should be able to

- explain and justify several important methods for machine learning
- give an account of several types of methods and algorithms that are used in the field of deterministic inference methods
- implement several types of methods and algorithms that are used in the field based on a high-level description
- extend and modify the methods that the course deals with

in order to be able to do a degree project in deterministic inference methods.

Course contents

The basics of the probabilistic method.

Probabilistic modelling.

Dimensionality reduction.

Graphical models.

Hidden Markov models.

Expectation-Maximization.

Variational Inference.

Networks in variational inference.

Specific prerequisites

Completed courses in machine learning equivalent DD2421/DD2431 and probability theory and statistics equivalent SF1901.

Active participation in a course offering where the final examination is not yet reported in Ladok is considered equivalent to completion of the course.

Registering for a course is counted as active participation.

The term 'final examination' encompasses both the regular examination and the first re-examination.

Examination

- LAB1 - Labs, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Exam, 3.5 credits, grading scale: A, B, C, D, E, FX, 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.

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.