DD2610 Deep Learning, advanced course 7.5 credits

Djupinlärning, fortsättningskurs

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

The official course syllabus is valid from the spring semester 2025 in accordance with the decision by the Faculty Board: J-2024-2258.
Date of decision: 2024-10-08

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

Knowledge in basic deep learning, 7.5 higher education credits, equivalent completed course DD2424 or DD2437.

Language of instruction

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

Intended learning outcomes

On completion of the course, the student should be able to

- explain and justify the subareas of deep learning
- account for the theoretical background for advanced deep-learning techniques
- identify needs of additional research in the area
- implement several deep-learning methods based on new research
- analyse advanced research in the area and critically evaluate the methods' weaknesses and strengths

in order to:

- be prepared for a degree projects/postgraduate studies in deep learning
- better be able to meet the industry's need for cutting-edge competence in the area.

Course contents

- Basic theory of deep networks
- Probabilistic deep learning
- Types of learning in deep learning
- Deep learning with imperfect labels
- Reliable deep learning

Examination

- LAB1 - Laboratory work, 4.5 credits, grading scale: P, F
- PRO1 - Project work, 3.0 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.