



EP236U Machine Learning in Production 5.0 credits

Maskininlärning i produktion

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

Establishment

Course syllabus for EP236U valid from Spring 2022

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

- Knowledge in the equivalent IX1304 of one variable calculus Mathematics 7.5 credits
- Knowledge in linear algebra equivalent SF1672 Linear Algebra 7.5 credits
- Knowledge in probability theory equivalent SF2940 Probability Theory 7.5 credits
- Knowledge in Programming equivalent DD1315 programming and Matlab 7.5 credits
- The upper secondary course English B/6

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:

- summarise a real machine learning ecosystem in production where the model is one of many different components
- explain the entire end-to-end data pipeline i.e. from data collection and storage to model deployment and monitoring
- deploy a machine learning model
- interpret data and handle properties of real data
- develop batch and online interfaces
- discuss model versioning and testing
- evaluate privacy and security in machine learning
- discuss edge learning and applications of machine learning for Internet of Things

Course contents

- Lecture 1: Introduction
- Lecture 2: Data ingestion and analysis
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- Lecture 3: High-performance machine learning development
- Lab 2: Model development
- Lecture 4: Model deployment and testing
- Lab 3: Model deployment and testing
- Lecture 5: Observability
- Lab 4: Observability
- Lecture 6: Privacy and security
- Lecture 7: Machine learning at the edge

Examination

- INL1 - Home assignments, 4.0 credits, grading scale: P, F
- DEL1 - Workshop, 1.0 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.

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

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.