SYLLABUS

Programming for Machine Learning 7.5 credits D0036E

Programmering för maskininlärning

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2022-02-11

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LULEÅ TEKNISKA UNIVERSITET

Programming for Machine Learning 7.5 credits D0036E

Programmering för maskininlärning

First cycle, D0036E

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Datateknik	Computer Technology

Main field of study

Computer Science and Engineering

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and and completed courses of 60 credits, of which at least 7.5 credits programming and 22.5 credits mathematics. Mathematical knowledge must include Calculus, Linear Algebra and Logic or Statistics.

Good knowledge in English, equivalent to English 6

Selection

The selection is based on 1-165 credits.

Course Aim

After completion of the course, the student should be able to:

- Demonstrate knowledge in designing object-oriented programs and capacity to plan and carry out advanced tasks in the form of implementation of programs designed to solve specific machine learning problems.
- Demonstrate the ability to use data structures, algorithms and tools available in state-of-the-art machine learning libraries to solve problems in a modern object-oriented language.
- Demonstrate the ability to critically analyze and evaluate technical solutions in the form of existing programs for machine learning, as well as predict and evaluate sequences of events in these.

Contents

- Variables and program states, choice, iteration, recursion.
- Arithmetic and logic expressions, strings and text processing.
- Generalisation, parametrisation and function abstraction.
- Dynamic data structures, the file concept, error handling, and standard libraries for machine learning.
- Introduction to object-oriented program development and development environments.
- Problem solving, program structure and documentation.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures, read and view self-study material, mandatory quizzes, laboratory work in the form of computer programming exercises.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Written examination with differentiated numerical grades, as well as oral and written presentation of programming exercises.
Passing the programming exercises part of the course requires approval of all individual exercises.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term “unauthorized aids” refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Written exam	G U 3 4 5	4.5	Mandatory	A22	
0002	Programming exercises	U G#	3	Mandatory	A22	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Jonny Johansson, HUL SRT 2022-02-11

Syllabus established

by Jonny Johansson, HUL SRT 2022-02-11