

Data-centric Artificial Intelligence

Datacentrisk artificiell intelligens
6 credits

Programme course

726G03

Valid from: 2026 Autumn semester

Determined by	Main field of study	
Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Programming	
Date determined	Course level	Progressive specialisation
2026-04-01	First cycle	G1F
Revised by	Disciplinary domain	
	Technology	
Revision date	Subject group	
	Informatics/Computer and Systems Sciences	
Offered first time	Offered for the last time	
Autumn semester 2026		
Department	Replaced by	
Institutionen för datavetenskap		

Course offered for

- Bachelor's programme in Information Systems Analysis
- Master Programme in IT and Management
- Bachelor's programme in Information Systems Analysis

Entry requirements

General entry requirements for undergraduate studies and Social Studies and Mathematics corresponding to the level in Swedish upper secondary education (Samhällskunskap 1b or 1a1 and 1a2 or Samhällskunskap nivå 1b or nivå 1a2 and Matematik 2a/2b/2c or Matematik B or Matematik nivå 2a or nivå 2b or nivå 2c).
and
at least 10 ECTS credits in Programming, including at least 3 ECTS credits in Python

Intended learning outcomes

After completing the course, the student should be able to:

- explain and apply basic concepts in data-centric artificial intelligence
- explain and systematically reflect on the applicability of different methods in data-centric artificial intelligence for different types of learning problems
- use existing tools to construct, train, and analyze deep neural network models
- develop and adapt code to preprocess, analyze and improve the quality of data sets

Course content

The course provides basic methodological knowledge in data-centric artificial intelligence through the following content:

- basic concepts in artificial neural networks for deep learning
- methods and tools for construction and adaptation, training, and evaluation of models (like Python, Keras, Tensorflow, Colab)
- data-centric methods for detailed error analysis of models and underlying data
- structured approach to managing and correcting (curating) data

Teaching and working methods

The teaching consists of lectures, laboratory sessions and project work.

Examination

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

Three-grade scale, U, G, VG

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly, or as a whole, in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.