Natural Language Processing

Single subject and programme course

6 credits

Natural Language Processing

729A27

Valid from: 2017 Spring semester

Determined by
The Quality Board at the Faculty of Arts
and Sciences

Date determined
2016-10-28

Main field of study

Cognitive Science

Course level

Second cycle

Advancement level

A1X

Course offered for

- Master Programme in Cognitive Science

Entry requirements

For admission to the course, the specific entry requirements that apply for the Master's Programme in Cognitive Science must be met. In addition, the student must have successfully completed a course in language technology worth at least 6 ECTS credits, or courses in programming, data structures, and algorithms worth at least 18 ECTS credits.

Intended learning outcomes

After completion of the course, the student should on an advanced level be able to:
- explain state-of-the-art natural language processing algorithms and analyse them theoretically
- implement natural language processing algorithms and apply them to practical problems
- design and carry out evaluations of natural language processing components and systems
- seek, assess and use scientific information within the area of natural language processing

Course content

Natural Language Processing (NLP) develops techniques for the analysis and interpretation of natural language, a key component of smart search engines, personal digital assistants, and many other innovative applications. The goal of this course is to provide students with a theoretical understanding of and practical experience with the advanced algorithms that power modern NLP.
The course focuses on methods that involve machine learning on text data. The course covers the following areas: State-of-the-art NLP algorithms for the analysis and interpretation of words, sentences, and texts. Relevant machine learning methods based on statistical modelling, combinatorial optimisation, and neural networks. NLP applications. Validation methods. NLP tools, software libraries, and data. NLP research and development.

Teaching and working methods

The course is taught in the form of lectures, lab sessions, and seminars in connection with a minor project. The student is expected to study independently, individually and in groups. The course is given in English.

Examination

The course is examined by lab assignments, project assignments, and a written exam. Detailed information can be found in the study guidelines.

   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 instead 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.

   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 carried out in such a way that both men´s and women´s experience and knowledge is made visible and developed.

Department

Institutionen för datavetenskap