Advanced Data Mining

Single subject and programme course

6 credits
Avancerad data mining
732A75
Valid from: 2018 Spring semester

Determined by
Course and Programme Syllabus Board
at the Faculty of Arts and Sciences

Date determined
2018-03-20
Main field of study
Statistics

Course level
Second cycle

Advancement level
A1X

Course offered for
- Master’s Programme in Statistics and Data Mining

Entry requirements
A bachelor’s degree, 18 ECTS credits, in one of the following subjects: statistics, mathematics, applied mathematics, computer science, engineering, or equivalent. Completed courses in calculus, linear algebra, statistics and programming are required. Documented knowledge of English equivalent to Engelska B/Engelska 6

Intended learning outcomes
After completion of the course, the student should on an advanced level be able to:
- use the terminology used in unsupervised learning
- account for applications in which clustering and association analysis are relevant
- account for the algorithms used in clustering and association analysis
- use cluster analysis in order to perform outlier analysis
- utilize an appropriate software for cluster and association analysis and interpret the obtained outcome

Course content
Association analysis: concepts and methods related to frequent item sets and association rules such as Apriori principle, FP-growth, evaluation of association rules.
Clustering: concepts and methods related to partitional clustering methods, hierarchical clustering methods, density-based clustering methods, cluster evaluation, outlier analysis.

Teaching and working methods
The teaching comprises lectures, seminars and computer laboratory. Homework and independent study are a necessary complement to the course. Language of instruction: English.
Examination
The course is examined by an individual written exam and laboratory assignments.
Detailed information about the examination can be found in the course's study guide.
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
ECTS, EC

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