

Data Mining - Clustering and Association Analysis

Single subject and programme course

15 credits

Data Mining - Clustering and Association Analysis

732A31

Valid from:

Determined by

The Quality Board at the Faculty of Arts
and Sciences

Date determined

2008-09-10

Revision date

2013-03-18

Replaced by

732A75

Main field of study

Computer Science

Course level

Second cycle

Advancement level

A1X

Course offered for

- Master's Programme in Statistics and Data Mining

Intended learning outcomes

The course lays the foundation for professional work and research in which large amounts of data are explored, modified, modelled and assessed to uncover previously unknown patterns and trends. ‘

Having completed the course, the student should be able to:

- use the terminology used in unsupervised learning,
- give examples of applications in which clustering and association analysis are useful,
- 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,
- design and perform a data analysis task using clustering and association analysis for a given data mining problem and evaluate the results

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 (e.g. K-means), hierarchical clustering methods, density-based clustering methods (e.g. DBSCAN), cluster evaluation, outlier analysis (e.g. K-means), hierarchical clustering methods, density-based clustering methods (e.g. DBSCAN), cluster evaluation, outlier analysis

Teaching and working methods

The teaching comprises lectures, seminars, computer laboratory and project work. Lectures are devoted to theory, concepts and techniques. The techniques are practised in the computer laboratory and project work. The seminars comprise student presentations and discussions of assignments. In addition to those, the students are expected to perform self-studies.

Language of instruction: English.

Examination

- written examination
- laboratory and project work

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.

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Department

Institutionen för datavetenskap