



ID2222 Data Mining 7.5 credits

Datautvinning

Course syllabus for ID2222 valid from Autumn 16

This is a translation of the Swedish, legally binding, course syllabus.

Grading scale: A, B, C, D, E, FX, F

Education cycle: Second cycle

Main field of study: Computer Science and Engineering

Intended learning outcomes

The course studies fundamentals of data mining, data stream processing, and machine learning algorithms for analyzing very large amounts of data. We will use big data processing platforms, such as MapReduce, Spark and Apache Flink, for implementing parallel algorithms, as well as computation systems for data stream processing, such as Storm and InfoSphere.

After this course, students will be able to mine different types of data, e.g., high-dimensional data, graph data, and infinite/never-ending data (data streams); as well as to program and build data-mining applications. They are also expected to know how to solve problems in real-world applications, e.g., recommender systems, association rules, link analysis, and duplicate detection. Moreover, they will master various mathematical techniques, e.g., linear algebra, optimization, and dynamic programming.

Course main content

- Introduction to Data Mining
- Frequent Itemsets
- Finding Similar Items
- Clustering
- Recommendation Systems
- Mining Data Streams
- Dimensionality Reduction
- Large-Scale Machine Learning

Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

Eligibility

Literature

The contents of the course are derived from the following two textbooks:

A. Rajaraman and J. D. Ullman, Mining of massive datasets. Cambridge University Press, 2012 (alternative: J. Han, M. Kamber, J. Pei, Data Mining: Concepts and Techniques, 3-rd Ed., Morgan Kaufmann, 2012)

Examination

- LAB1 - Programming Assignments, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Written examination. Laboratory tasks.