
Meeting Times and Locations

Saturday	13:00 pm–16:00 pm
Wednesday	7:00 pm – 10:00 pm

Instructor

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Course Description, Aim and Content

Data collection has become easier and cheaper with the advances in technology which motivate data mining research and applications. Data mining aims to turn the collected massive raw data into valuable knowledge, very similar to what conventional mining does. In the scope of this course we will cover various data mining methods, namely the associations, sequential patterns, temporal patterns, clustering and classification applied to different data types such as spatio-temporal and textual data. We will look at recommendation systems and personalization where data mining models play an important role. Since data mining research is fueled by applications mostly related to people, privacy issues need to be addressed. Privacy-preserving techniques such as data anonymization, sanitization, and data mining on private data will also be covered in this course. Students are expected to understand the fundamental theory behind each technique, as well as implementing them using an environment such as RapidMiner.

Topics

- Data Preparation
 - Data Cleaning
 - Handling Missing Values
 - Normalization
- Data Mining Models
 - Association Rules
 - Sequential Patterns
 - Temporal Patterns
 - Clustering algorithms
 - Classification Models
- Data Mining Techniques in Different Domains
 - Text Mining
 - Information Retrieval
 - Sentiment Analysis
 - Sapatio-Temporal Data Mining
- Data Mining for
 - Recommendation Systems
 - Personalization
- Privacy Preserving Data Mining
 - Data Anonymization
 - Data Sanitization
 - Data Mining on Private Data

Grading

Assignments (4)	40%
Course Project	30%
Final	30%

References

Data Mining Concepts and Techniques, Jiawei Han & Micheline Kamber, Morgan Kaufmann (2nd edition)

Announcements and SUCourse

Students are responsible for all announcements made during the regular class meetings. Students should follow the SUCourse site for this class regularly as they are responsible for all announcements and postings on this site.

This document may be modified during the semester (Spring 2014-2015) due to unforeseen reasons.