

Data Mining

Goal

The goal of this course is to introduce/survey the concepts and technologies in knowledge engineering. Topics included are data warehousing, association rule mining, classification, clustering, neural network, genetic algorithm, sequence and graph mining, spatial and multimedia data mining, and Web mining.

Instructor

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Office hour

By appointment

Textbook

Data mining: concepts and techniques, 2nd ed., J. Han and M. Kamber, Morgan Kaufmann, 2006. (ISBN-13: 978-0-12-373584-3)

References

Introduction to data mining, P. Tan, M. Steinbach, V. Kumar, Addison-Wesley, 2005.

Journal papers from the Decision Support Systems, Information Systems Research, Management Science, IEEE transactions, ACM transactions, VLDB journal.

Conference papers from the proceedings of IEEE international conferences, ACM international conferences, international conference on very large databases (VLDB).

Topics included

- ◆ Overview
- ◆ Data preprocessing (Ch. 2)
- ◆ Data warehouse and OLAP technology for data mining (Ch. 3 & Ch. 4)
- ◆ Mining frequent patterns & association rules (Ch. 5)
- ◆ Classification and prediction, neural network, genetic algorithm (Ch. 6)
- ◆ Cluster analysis (Ch. 7)
- ◆ Mining stream, time-series, and sequence data (Ch. 8)
- ◆ Graph mining, social network analysis, and multi-relational data mining (Ch. 9)
- ◆ Mining object, spatial, multimedia, text, and Web data (Ch. 10)
- ◆ Applications and trends in data mining (Ch. 11)

Grading

Class participation	10%
Term project (June 26, proposal: May 22)	20%
Homework	20%
Midterm and Final exams	50%