

CAP-5771 Principles of Data Mining

Catalog Description

Principles of data mining concepts, knowledge representation, inferring rules, statistical modeling, decision trees, association rules, classification rules, clustering, predictive models, and instance-based learning. (3 credits)

Prerequisites

Graduate Standing

Type

Elective graduate courses

Course Objectives

After completing this module, students will be able to

- Demonstrate an understanding of principles and theoretical foundations behind major data mining approaches
- Demonstrate an understanding of current research issues in data mining
- Undertake the systematic and comparative evaluation of data mining procedures
- Select and apply data mining techniques to the solutions of real world problems

Topics

- Data Mining Introduction
- Data Exploration and Visualization
- Data Preprocessing
- Classification
- Association Analysis
- Sequential pattern mining
- Advanced pattern mining
- Cluster Analysis
- Anomaly Detection

Textbook

- Pang-Ning Tan, Michael Steinbach and Vipin Kumar. Introduction to Data Mining. Addison Wesley, 2005.

References

- Jiawei Han and Micheline Kamber. Data Mining: Concepts and Techniques. Morgan Kaufmann Publishers, 2006, Second Edition.
- Tom Mitchell. Machine Learning. McGraw Hill, 1997.
- Hastie, Tibshirani and Friedman. The Elements of Statistical Learning. Springer-Verlag, 2001.

Last Update

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