CMPT 741 - G100 Data Mining

Instructor(s): Martin Ester

Calendar Objective/Description:
The student will learn basic concepts and techniques of data mining. Unlike data management required in traditional database applications, data analysis aims to extract useful patterns, trends and knowledge from raw data for decision support. Such information are implicit in the data and must be mined to be useful.

Instructor’s Objectives:
This course introduces data mining, an area that plays a key role in Big Data analytics. The goal of data mining is the efficient discovery of useful patterns in large datasets. This course emphasizes data-driven thinking and focuses on fundamental data mining algorithms and key applications. Students taking this course are expected to have taken an algorithms course and to have an understanding of basic statistics equivalent to an entry-level course. This course will prepare students to conduct their own research in the area of data mining or to use data mining technology in other research areas.

Prerequisites:
None

Topics:
- Introduction
- Data preprocessing
- Cluster Analysis
- Classification
- Outlier Analysis
- Frequent Pattern Mining
- Social Network Analysis
- Recommender systems

Grading:
The grading scheme will be discussed in the first week of the class. Evaluation will be based on paper and pencil assignments, a course project, and a (midterm or final) exam.

Required Books:
Data Mining: The Textbook, Charu Aggarwal, Springer, 2015, 9783319141411

Academic Honesty Statement:
Academic honesty plays a key role in our efforts to maintain a high standard of academic excellence and integrity. Students are advised that ALL acts of intellectual dishonesty will be handled in accordance with the SFU Academic Honesty and Student Conduct Policies ( http://www.sfu.ca/policies/gazette/student.html ).