CMPT 459 - D200 Special Topics Database Systs

Instructor(s): Keval Vora

Calendar Objective/Description: Special Topics Database Systs

Instructor's Objectives:

This is a seminar-style special topics course on recent advances in graph analytics and management systems.

Modern data analytics solutions (machine learning, data mining, etc.) often involve graph-based computations to infer useful results. The growing need of analyzing graph data, coupled with the rapid increase in the amount of graph data to be analyzed has led to the development of various large-scale graph analytics systems. Developing these systems requires careful design of fundamental components like graph data structures, concurrent execution models, scalable graph algorithms, as well as generic programming models.

In this course, we will focus on scalable solutions and systems for emerging graph mining applications. We will explore how challenges in mining large graphs are being solved in real-world systems as well as the limitations inherent in their designs. This is a seminar-style course, meaning that students are expected to give presentations on research papers. Background in software systems, databases and parallel computing is preferable.

Prerequisites:

see go.sfu.ca

Topics:

- Graph mining applications and their challenges
- Execution models
- Programming models
- Processing static and dynamic graphs
- Graph mining across different execution environments (e.g. shared memory, distributed, etc.)

Grading:

To be discussed in the first week of class.

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).