CAP 6315 Social Networks and Big Data Analytics

Credits: 3 credits

Textbook, Title, Author, and Year: *Social Media Mining: An Introduction* , R. Zafarani, M. Abbasi, and H. Liu, Cambridge University Press, 2014

Reference Materials:
1. Matthew A. Russell, Mining the Social Web: Analyzing Data from Facebook, Twitter, LinkeeIn, and Other Social Media Sites, O'Reilly Media, 2011. ISBN-10: 1449388345

2. UC Berkeley, School of Information: Analyzing Big Data with Twitter

3. Research papers

Specific Course Information:

Catalog Description: This course teaches students basic concepts of big data analytics, with an application in social network analysis. The class will cover three major topics including big data analytics platform, MapRedue (hadoop) programming, and social network analytics. Detailed topics include MapReduce based computing framework, general algorithms for data analytics, trend and outbreak detection from social network streams. The lectures will include practical sessions dedicated to the implementation of big data analytics with selected programming language and tools.

Prerequisites: COP3530 Data Structures and Algorithm Analysis

Specific Goals for The Course: The goal of this class is for students to gain hands-on experiences on social networks and big data analytics. At the end of the class, students should be able to understand the whole process of building a big data analytics framework. We will use Twitter as the testbed and apply the framework for social media analysis, including social event detection, large scale social anomaly detection, and real-time social trend detection

Brief List of Topics to Be Covered:

Big Data Analytics

- Data Analytics Algorithms
- Mapreduce (Hadoop) programming

Social Network Analytics

- Introduction to Social Networks and Social Network Sites
- Social network analytics algorithms
- Social event and trend modeling

Big Data Analytics for Social Network

- Twitter streaming APIs for data collection
- Distributed framework for social sentiment analysis
- Online social events analysis and monitoring