

# UW CENTER FOR PATTERN ANALYSIS AND MACHINE INTELLIGENCE

## GRADUATE SEMINAR SERIES

### The Commercialization of Data Mining and Machine Learning Technologies

**Speaker:** Gary Li (Data Mining Scientist, Ph.D. and Tech Entrepreneur)

**Date:** January 29, 2014

**Time:** 4:00 pm – 5:00 pm

**Place:** DC-1304 (Refreshments will be served)

#### **Abstract :**

In this talk, I present my teams' works on commercializing data mining and machine learning techniques in oil sands and finance industries. In the oil sands application, Canada has large oil sands reserves. However, oil sand extraction is less efficient and produces more greenhouse gases than conventional oil extraction. Using massive amounts of sensors data collected from oil sands plants, Pattern Intelligence Inc. developed a prediction model that estimates the level of bitumen recovery before such expensive operations as shoveling and moving dump trucks. The method also reveals factors that could improve the recovery efficiency. In the finance application, we tackled the classical financial forecasting problem using models derived from massive amounts of time series and/or unstructured data. Unlike chemical data, the properties of financial data are constantly changing. Patterns and strategies, once profitable, can become risky if they are fully exploited by the public. This makes consistent risk-adjusted return after spreads, commission and slippages challenging. KFL Investment Management Inc. (formerly Knowledge Funds Ltd.) attempts to develop algorithmic trading methods that address this problem. This talk also discusses the opportunities, satisfaction and challenges of working in startups, characterized by high return and high risk, direct communication with top management and/or investors, fast paced environment, wearing multiple hats, tight deadlines, limited resources and funding, etc. Mistakes and lessons learned will be presented.

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