Statistical Machine Learning Seminar
Hosted by Department of Mathematical Sciences

- Date: Tuesday, September 27, 2016
- Time: 12:00-1:00
- Room: WH-100E
- Speaker: Wei Qian (Rochester Institute of Technology)
- Title: Sufficient Dimension Reduction in High Dimension

Abstract

Sufficient dimension reduction (SDR) is known to be a powerful tool to achieve data reduction and data visualization in regression and classification problems. In this work, we study the high-dimensional SDR problems and propose a unified solution with regularization. Under the setting p»n, consistency results are investigated for important SDR methods. Special sparse structures of large predictor and error covariance are considered for potentially improved performance. In addition, the proposed approach is equipped with a new algorithm to efficiently solve the regularized objective functions and a data-driven procedure to determine structure dimension, without the need to inverse a large covariance matrix. Simulations and real data analysis are performed to demonstrate promising applications of our proposal in high-dimensional settings.