Seminar Series: Mathematical Statistics Seminar

Date: Thursday, March 2, 2017
Time: 3:30 – 4:20 p.m.
Location: UNIV 003

Speaker: Zuofeng Shang
Affiliation/Organization: Binghamton University

**STATISTICAL INFERENCE ON PANEL DATA MODELS: A KERNEL RIDGE REGRESSION METHOD**

Abstract: We propose statistical inferential procedures for panel data models with interactive fixed effects in a kernel ridge regression framework. Compared with traditional sieve methods, our method is automatic in the sense that it does not require the choice of basis functions and truncation parameters. Model complexity is controlled by a continuous regularization parameter which can be automatically selected by generalized cross validation. Based on empirical processes theory and functional analysis tools, we derive joint asymptotic distributions for the estimators in the heterogeneous setting. These joint asymptotic results are then used to construct confidence intervals for the regression means and prediction intervals for the future observations, both being the first provably valid intervals in literature. Marginal asymptotic normality of the functional estimators in homogeneous setting is also obtained. Simulation and real data analysis demonstrate the advantages of our method.

This is a joint work with Shunan Zhao and Ruiqi Liu at Binghamton.