DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Mr. QIAO Xinghao

Marshall School of Business
University of Southern California
Los Angeles, USA

will give a talk

entitled

FUNCTIONAL GRAPHICAL MODELS

Abstract

Graphical models have attracted increasing attention in recent years, especially in settings involving high dimensional data. In particular Gaussian graphical models are used to model the conditional dependence structure among p Gaussian random variables. As a result of its computational efficiency the graphical lasso (glasso) has become one of the most popular approaches for fitting high dimensional graphical models. In this talk we extend the graphical models concept to model the conditional dependence structure among p random functions. In this setting, not only is p large, but each function is itself a high dimensional object, posing an additional level of statistical and computational complexity. We develop an extension of the glasso criterion (fglasso), which estimates the functional graphical model by imposing a block sparsity constraint on the precision matrix, via a group lasso penalty. The fglasso criterion can be optimized using an efficient block coordinate descent algorithm and our theoretical results demonstrate that, with high probability, the fglasso will correctly identify the true conditional dependence structure. Finally we show that the fglasso significantly outperforms possible competing methods through both simulations and an analysis of a real world EEG data set comparing alcoholic and non-alcoholic patients.

on

Tuesday, March 3, 2015

(Refreshments will be served from 3:15 p.m. outside Room 301 Run Run Shaw Building)

3:30 p.m. – 4:30 p.m.

at

Room 301, Run Run Shaw Building

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 3917 2466 for parking arrangement.

All interested are welcome