

For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Dr. JIANG Fei

Department of Statistics
The University of South Carolina
U.S.A.

will give a talk

entitled

EXTENSIONS OF THE SUFFICIENT DIMENSION REDUCTION

Abstract

The talk will cover two extensions of the sufficient dimensional reduction method. In one project, we develop a semiparametric functional single index model to study the relation between a univariate response and multiple functional covariates. The parametric part of the model integrates the linear regression modeling for functional data and the sufficient dimension reduction structure. The nonparametric part of the model further allows the response-index dependence or the link function to be unspecified. We use B-splines to approximate the coefficient function in the functional linear regression model part and reduce the problem to a familiar dimension folding model. We develop a new method to handle the subsequent dimension folding model by using kernel regression in combination with semi-parametric treatment. In another topic, we study the relation between a response variable and high dimensional covariates through a combination of factor analysis and sufficient dimension reduction. To take advantage of the flexibility in traditional factor models where the latent factors are not required to be normal, we recommend using semiparametric sufficient dimension reduction methods in the joint estimation of the combined model. The resulting estimator is more flexible and has improved performance. We also quantify the asymptotic performance of the parameter estimation and analyze a GTEx data set concerning gene-SNPs relation in lung tissues and discovered new significant SNPs.

on

Tuesday, April 5, 2016

(Refreshments will be served from 11:15 a.m. outside Room 301 Run Run Shaw Building)

11:30 a.m. – 12:30 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