

For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Professor Heping ZHANG

Susan Dwight Bliss Professor of Public Health (Biostatistics)
and
Professor in the Child Study Center and of Statistics
Yale School of Public Health
New Haven, USA

will give a talk

entitled

VARIABLE SELECTION WITH PRIOR INFORMATION FOR GENERALIZED LINEAR MODELS VIA THE PRIOR LASSO METHOD

Abstract

LASSO is a popular statistical tool often used in conjunction with generalized linear models that can simultaneously select variables and estimate parameters. When there are many variables of interest, as in current biological and biomedical studies, the power of LASSO can be limited. Fortunately, so much biological and biomedical data have been collected and they may contain useful information about the importance of certain variables. This talk proposes an extension of LASSO, namely, prior LASSO (pLASSO), to incorporate that prior information into penalized generalized linear models. The goal is achieved by further penalizing the LASSO criterion function with a measure of the discrepancy between the prior information and the data. For linear regression, the whole solution path of the pLASSO estimator can be found with a procedure similar to the Least Angle Regression (LARS). Asymptotic theories and simulation results show that pLASSO provides significant improvement over LASSO when the prior information is relatively accurate. When the prior information is less reliable, pLASSO shows great robustness to the misspecification. We illustrate the application of pLASSO using a real data set from a genome-wide association study.

This is a joint work with Yuan Jiang and Yunxiao He.

on

Thursday, October 15, 2015

(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