For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Dr. WANG Tao

Department of Biostatistics
Yale School of Public Health
USA

will give a talk

entitled

CONSTRUCTING PREDICTIVE MICROBIAL SIGNATURES AT MULTIPLE TAXONOMIC LEVELS

Abstract

Recent advances in DNA sequencing technology have enabled rapid advances in our understanding of the contribution of the human microbiome to many aspects of normal human physiology and disease. A major goal of human microbiome studies is the identification of important groups of microbes that are predictive of host phenotypes. However, the large number of bacterial taxa and the compositional nature of the data make the goal difficult to achieve using traditional approaches. Furthermore, the microbiome data are structured in the sense that bacterial taxa are not independent of one another and are related evolutionarily by a phylogenetic tree. To deal with these problems, we introduce the concept of variable fusion for high-dimensional compositional data and propose a novel tree-guided variable fusion method. Our method is based on the linear regression model with a tree-guided penalty function. It incorporates the tree information node-by-node, and is capable of building predictive models comprised of bacterial taxa at different taxonomic levels. A simulation study and a gut microbiome data analysis are presented to illustrate the good performance of the proposed method.

on

Tuesday, March 31, 2015

(Refreshments will be served from 9:15 a.m. outside Room 301 Run Run Shaw Building)

9:30 a.m. – 10:30 a.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