

For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Departmental Seminar

Professor Oscar MADRID-PADILLA

Department of Statistics
University of California, Berkeley
USA

will give a talk
entitled

FUSED LASSO IN GRAPH ESTIMATION PROBLEMS

Abstract

The fused lasso, also known as (anisotropic) total variation denoising, is widely used for piecewise constant signal estimation with respect to a given undirected graph. In this talk I will describe theory and methods for the fused lasso. Two classes of problems will be discussed: denoising on graphs, and nonparametric regression on general metric spaces. For the first of these tasks, I will provide a general upper bound on the mean squared error of the fused lasso that depends on the sample size and the total variation of the underlying signal. I will show that such upper bound is minimax when the graph is a tree of bounded degree, and I will present a surrogate estimator that attains the same upper bound and can be found in linear time. The second part of the talk will focus on extending the fused lasso to general nonparametric regression. The resulting approach, which we call the K-nearest neighbors (K-NN) fused lasso, involves (i) computing the K-NN graph of the design points; and (ii) performing the fused lasso over this K-NN graph. I will discuss several theoretical advantages over competing approaches: specifically, the estimator inherits local adaptivity from its connection to the fused lasso, and it inherits manifold adaptivity from its connection to the K-NN approach.

on

Monday, September 9, 2019

(Refreshments will be served from 1:45 p.m. outside Room 301 Run Run Shaw Building)

2:00 p.m. – 3:00 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