University of California, Irvine
Statistics Seminar

Object Oriented Data Analysis with Application to Neuroimaging Studies

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4 p.m., 6011 Bren Hall
(Bldg. #314 on campus map)

In this talk, I will first briefly introduce my research on object oriented data analysis with application to neuroimaging studies. I will then talk about a detailed example on imaging genetics. In this project, we develop a high-dimensional matrix linear regression model to correlate 2D imaging responses with high-dimensional genetic covariates. We propose a fast and efficient screening procedure based on the spectral norm to deal with the case that the dimension of scalar covariates is much larger than the sample size. We develop an efficient estimation procedure based on the nuclear norm regularization, which explicitly borrows the matrix structure of coefficient matrices. We examine the finite-sample performance of our methods using simulations and a large-scale imaging genetic dataset from the Alzheimer's Disease Neuroimaging Initiative study.

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