RUTGERS UNIVERSITY
DEPARTMENT OF STATISTICS AND BIOSTATISTICS
HILL CENTER #501, BUSCH CAMPUS, PISCATAWAY

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Seminar

Speaker: Zongming Ma, Stanford University

Title: Sparse Principal Component Analysis and Iterative Thresholding

Date: Wednesday January 27, 2010

Time: 3:30p.m.

Place: 552 Hill Center

Abstract

Principal component analysis (PCA) is a widely used dimension reduction method, but difficulties can arise when it is applied to very high dimensional data. For example, in a natural model, classical PCA gives inconsistent estimators of the principal axes. In this talk, we suppose that there is a sparse representation of those principal axes. We find that a new iterative thresholding approach recovers the leading principal subspace consistently, even optimally, in the high dimensional settings. We study the properties of this approach and demonstrate its performance on simulated and real examples.