University of California, Irvine
Statistics Seminar

"Matrix Data Modeling:
Smoothing and Covariance Estimation"

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Join via Zoom: https://uci.zoom.us/s/99193076115

Matrix-valued data has received an increasing interest in applications such as neuroscience, environmental studies and sports analytics. In this talk, I will discuss two recent projects. The first project is on estimating the covariance of matrix data. Unlike previous works that rely heavily on matrix normal distribution assumption and the requirement of fixed matrix size, I will introduce a class of distribution-free regularized covariance estimation methods for high-dimensional matrix data under a separability condition and a bandable covariance structure. For the second project, I will discuss a nonparametric matrix response regression model to characterize the nonlinear association between 2D image outcomes and predictors such as time and patient information. Computational algorithms, theoretical results, and applications will be discussed.