Department of Statistics

MASTER'S THESIS PRESENTATION

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# Covariance Estimation for High-Dimensional Data by Thresholding

WEDNESDAY, May 9, 2018, at 10:00 AM
Jones 304, 5747 S. Ellis Avenue


## ABSTRACT

There are multiple applications of estimation of covariance matrices using multivariate data and therefore it has been a consistent topic of research and study today. It is deduced that the sample covariance matrix for sample size n by a p-variate Gaussian distribution, N($\mu$, Σ!), is not a good estimator of the population covariance when p is sufficiently large. This paper is concerned with the regularization of sample covariance matrix by hard thresholding the estimator, which will show improvement of the estimators in our simulation study by examining the 1-norm, 2-norm and Frobenius norm with the theoretical covariance.


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