MICHIGAN STATE UNIVERSITY
Department of Statistics and Probability

COLLOQUIUM

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Significance testing for canonical correlation analysis in high dimensions

Tuesday, November 3, 2020
10:20 AM - 11:10 AM Eastern Daylight Time
Zoom

Abstract

This talk discusses the problem of testing for the presence of linear relationships between large sets of random variables based on a post-selection inference approach to canonical correlation analysis. The challenge is to adjust for the selection of subsets of variables having linear combinations with maximal sample correlation. To this end, we construct a stabilized one-step estimator of the square-root of Pillai's trace maximized over subsets of variables of pre-specified cardinality. This estimator is shown to be consistent for its target parameter and asymptotically normal provided the dimensions of the variables do not grow too quickly with sample size. We also develop a greedy search algorithm to accurately compute the estimator, leading to a computationally tractable omnibus test for the global null hypothesis that there are no linear relationships between any subsets of variables having the pre-specified cardinality. The talk is based on joint work with Xin (Henry) Zhang.

Zoom details can be found at: https://stt.natsci.msu.edu/stt-colloquium-zoom-info/

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