THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON STATISTICS

High-Dimensional Simultaneous Model Selection and Estimation: Wisdom or Folly?

By

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Abstract

In this talk, I will consider estimation and prediction problems in linear sparse models when there number of predictors are larger than data points, and some predictors in the model may have no and/or weak impact in predicting the response of interest. In the context of two competing models where one model includes strong signals, and other with weak signals and no signals. We propose a high-dimensional post-shrinkage strategy to improve the prediction performance of a submodel based on the strong signals only. We investigate the relative performances of the post-shrinkage and penalty estimators with respect to the weighted ridge estimator. The asymptotic properties of the estimators are established. We demonstrate that the proposed high-dimensional shrinkage strategy performs better than the penalized methods in many cases. The relative performance of the proposed strategy is appraised by both simulation studies and the real data analysis. Some open research problems will be discussed, as well.

Reference: S. Ejaz Ahmed, Feryaal Ahmed and B. Yuzbasi (2023). Post-Shrinkage Strategies in Statistical and Machine Learning for High Dimensional Data. CRC Press, USA.

Date   : 29 September 2023 (Friday)
Time   : 10:00am
Venue : Room 3598 (Lifts 27/28)

All are Welcome!