Joint Statistics Seminar

The Hong Kong University of Science and Technology

The Mnet Method for Variable Selection

by

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Time: 4:00 p.m. – 5:00 p.m.
Venue: Room 3408 (Lift 17/18)

Abstract

We propose a new penalized approach for variable selection using a combination of the minimax concave and ridge penalties. The proposed method is designed to deal with "large p, small n" problems with highly correlated predictors. We call the propose approach the Mnet method. Similar to the elastic net of Zou and Hastie (2005), the Mnet also tends to select or drop highly correlated predictors together. In addition, the Mnet is selection consistent and equal to the oracle ridge estimator with high probability under reasonable conditions. In contrast, the elastic net method does not have such an oracle property. We derive a coordinate descent algorithm to compute the Mnet estimates. Simulation studies show that the Mnet has better performance in variable selection in the presence of highly correlated predictors than the elastic net method. An example is used to illustrate the application of the Mnet method.

❖ ***All interested are welcome!*** ❖
For details, please contact ISOM Department.