Yale SCHOOL OF PUBLIC HEALTH
Biostatistics

A Model-free Variable Screening Method Based on Leverage Score

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12:00 Noon Eastern time, Tuesday, September 27, 2022
47 College Street, Room 106 A&B

ABSTRACT

Massive datasets have been collected in many fields of science, such as biology, chemistry, and engineering. The inadequate sample is no longer a bottleneck of modern statistical research. More often, we are facing data of extremely high dimensionality. How to effectively extract information from high-dimensional data poses new statistical challenges. In this talk, I will introduce a weighted leverage score (WLS) method for variable screening. The predictors selected using the WLS can consistently exclude redundant predictors not only for linear models but also for general index models. The screening consistency using the WLS will be discussed to provide theoretical underpinnings of the proposed method. I will highlight in this talk the application of the method for identifying carcinoma-related genes using spatial transcriptome data.