A New Estimation and Feature Selection Method in Diverging Mixture-of-Experts Models

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Abstract: Recent advancements in medical and other fields of scientific research have allowed scientists to collect data of unprecedented size and complexity. A common statistical problem in such applications is to model a response variable of interest as a function of a small subset of a large number of available features (covariates). The problem becomes even more complex when the population under study is made up of hidden subpopulations and the relationship between the response variable and the covariates varies across the subpopulations. Mixture-of-experts (MOE) models provide a flexible statistical tool in studying such relationships. In this talk we discuss some recent developments on estimation and feature selection methods in MOE models with diverging number of parameters. Performance of the methods will be discussed theoretically and through simulations. A real data analysis will be presented to show the usage of the methods.

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