Multiple Hypotheses Testing with Groups

by
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Abstract

In the context of large-scale multiple hypotheses testing, the hypotheses often have a certain group structure from side information. It is hence desirable to consider such prior information in multiple comparisons. In this talk, we propose a procedure that takes advantage of the relative importance of each group while controlling the false discovery rate (FDR) for both independent and positive regression dependent hypotheses. The procedure is easy to implement and shown to be more powerful than the classic FDR controlling procedure in theoretical and simulation studies. Our analysis on breast cancer data shows the procedure performs favorably compared with classic methods.