

High Dimensional Bayesian ANOVA with Applications to DNA Microarrays

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Keywords: Model selection, shrinkage, FDR, microarrays, prior calibration

Abstract

I will examine the use of spike and slab variable selection within the context of high dimensional ANOVA. Rescaling, prior calibration and methods for processing posterior information will be discussed. Multiple testing issues will be addressed via the design of new performance measures including a version of false detection rate control (FDR). An application to detecting differentially expressed genes in a DNA microarray experiment designed to search for a metastatic colon cancer signature will be presented. This is joint work with Hemant Ishwaran of the Cleveland Clinic.

References

Ishwaran H. and Rao J.S. (2003). Detecting differentially expressed genes in microarrays using Bayesian model selection. *Journal of the American Statistical Association* (to appear).