7th International Conference on

Biostatistics and Bioinformatics

&

7th International Conference on

Big Data Analytics & Data Mining

September 26-27, 2018 | Chicago, USA

Bayesian multiple testing under sparsity

Malay Ghosh
University of Florida, USA

This talk reviews certain Bayesian procedures that have recently been proposed to address multiple testing under sparsity. Consider the problem of simultaneous testing for the means of independent normal observations. In this talk, we study asymptotic optimality properties of certain multiple testing rules in a Bayesian decision theoretic framework, where the overall loss of a multiple testing rule is taken as the number of misclassified hypotheses. The multiple testing rules that are considered, include spike and slab priors as well as a general class of one-group shrinkage priors for the mean parameters. The latter is rich enough to include, among others, the families of three parameter beta, generalized double Pareto priors and in particular the horseshoe, the normal-exponential-gamma and the Strawderman-Berger priors. Within the chosen asymptotic framework, the multiple testing rules under study asymptotically attain the risk of the Bayes Oracle. Some classical multiple testing procedures are also evaluated within the proposed Bayesian framework.

ghoshm@ufl.edu

Notes: