

Advantages of Model-based Bayesian Meta-Analysis

by

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ABSTRACT

There is a growing interest in statistical methods for integrating multiple sources of information in an effort to improve statistical inference and gain deeper understanding of complex systems. In this talk we discuss model-based Bayesian approaches for data integration. Compared to traditional meta-analysis methods, the model-based Bayesian approach enables sharing information across different studies and individual subjects more efficiently through hierarchical structures and shared parameters. We used an example in Bioinformatics to show that this new approach increases the statistical power significantly. As a price for this increased power, more work on computation is needed. We also discuss the effect of inconsistency among multiple studies.

BIOGRAPHY

Dr. Xiaodan FAN is an assistant professor from the Department of Statistics, Chinese University of Hong Kong. Dr. Fan received his M.A. and Ph.D. degree in Statistics from the Harvard University. Before that, he got his B.E. in Automation and M.S. in Pattern Recognition & Intelligent Systems from Tsinghua University. He is generally interested in probabilistic modeling and statistical computing for computational biology/Bioinformatics problems. His recent research topics include microarray data analysis, cell-cycle study, comparative genomics, motif discovery, and gene network reconstruction.

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All are welcome!