

Bayesian methods for Graphical model estimation and Graph clustering in high dimensions

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Abstract

Graphical models serve as an excellent tool to capture the conditional dependence structure among multiple random variables, especially in the high-dimensional scenario where the number of variables is much larger than the available sample size. For multivariate Normal data, the structure of graphical dependencies among the variables is effectively captured by the precision matrix (inverse covariance matrix), and hence statistical inference on a large precision matrix is an important topic of research in recent statistical literature. In this talk, we first discuss different methods of graphical model estimation in the Bayesian paradigm, followed by exploration of the graph topology to detect clusters within the graph. We illustrate our methods through extensive simulations and real data analyses.

Speaker Profile

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