Abstract

Gaussian graphical models are widely used to represent conditional dependence among random variables. In this talk, we propose a new estimator for such models appropriate for data arising from several dependent networks. Existing methods that assume independence among graphs are not applicable in this setting. To estimate multiple dependent graphs, we decompose the graphical models into two layers: the systemic layer, which is the network shared among graphs, and the category-specific layer, which represents the graph-specific variation. We propose a new graphical EM technique that jointly estimates the two layers of graphs. Applications to mouse genetic data will be presented.

This is based on joint work with Yuying Xie and William Valdar at UNC-Chapel Hill.

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