MICHIGAN STATE UNIVERSITY
Department of Statistics and Probability

COLLOQUIUM

YUFENG LIU

Department of Biostatistics
University of North Carolina at Chapel Hill

Joint Estimation of Multiple Dependent Gaussian Graphical Models with Applications to Mouse Genetics

Tuesday, October 8, 2013
11:00am – 12:00noon
Refreshments 10:50am
C405 Wells Hall

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.

To request an interpreter or other accommodations for people with disabilities, please call the Department of Statistics and Probability at 517-355-9589.