VirginiaTech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Computer Science Seminar Series

National Capital Region

Network Inference from Grouped Observations Using Star Models

Speaker: Prof. Yunpeng Zhao
George Mason University
Friday, Oct. 2, 2015
1:00PM- 2:00PM, NVC 325

Abstract

In medical research, economics, and the social sciences data frequently appears as subsets of a set of objects. Over the past century a number of descriptive statistics have been developed to construct network structure from such data. However, these measures lack a generating mechanism that links the inferred network structure to the observed groups. To address this issue, we propose a model-based approach called the Star Model, which assumes that every observed group has a leader and that the leader has brought together the other members of the group. The performance of Star Models is demonstrated by simulation studies. We apply this model to infer the relationships among Senators serving in the 110th United States Congress, the characters in a famous 18th century Chinese novel, and the distribution of flora in North America.

Biography

Dr. Zhao is currently an Assistant Professor at Department of Statistics, George Mason University. He graduated from Department of Statistics, University of Michigan at Ann Arbor. His research interests include network analysis, machine learning, and high dimensional analysis.