



THE UNIVERSITY OF CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

SIRUI WANG

Department of Statistics
The University of Chicago

Dynamics and Community Detection of Knowledge Networks in a
Tech Economy

FRIDAY, June 23, 2017, at 1:00 PM
Jones 304, 5747 S. Ellis Avenue

ABSTRACT

The technology sector of New York City has rapidly grown in the past decade, drawing upon well-established firms in the area as well as new talent from across the world. With the rise of social media platforms, we are able to study the organization of specialized knowledge in this emerging community by analyzing membership data from a large online group organized around tech-based startups. This study first surveys methods for building the knowledge network, including empirical estimates of edges using co-membership data as well as models for conditional independence between tech groups derived from the framework of Markov random fields. With a given network, we then study modularity and variants of stochastic block models to detect sub-communities of specialized knowledge that are present in the tech community.

For information about building access for persons with disabilities, please contact Laura Rigazzi at 773.702-0541 or send an email to lrigazzi@galton.uchicago.edu. If you wish to subscribe to our email list, please visit the following web site: <https://lists.uchicago.edu/web/arc/statseminars>.