

MATHEMATICS AND INTERDISCIPLINARY SCIENCES

Summer Seminar Series in Shanghai

Modelling Homophily in Autoregressive Networks

10:30 am, May 27, Tuesday

SPEAKER: Binyan Jiang

Prof. Binyan Jiang obtained his bachelor degree in Statistics from the University of Science and Technology of China in 2007, and his PhD degree in Statistics and Applied Probability from the National University of Singapore in 2012. Prior to joining the department of Applied Mathematics @HKPolyU, he worked as a visiting research scientist at Carnegie Mellon University. He is generally interested in different areas in Statistics and Applied Probability, and his recent research topics include predictive models for high-dimensional complex data, statistical methods related to precision medicine, and network data analysis. His representative achievements in statistical theory and modeling have been published in top journals in statistics and machine learning, such as Journal of American Statistical Association, Biometrika, Biostatistics, and Journal of Machine Learning Research. His cross-disciplinary collaborations have also been published in top journals and conferences in related fields.

ABSTRACT

Statistical modeling of network data is an important topic in various areas. Although many real networks are dynamic in nature, most existing statistical models and related inferences for network data are confined to static networks, and the development of the foundation for dynamic network models is still in its infancy. In particular, to the best of our knowledge, no attempts have been made to jointly address node heterogeneity and link homophily among dynamic networks. Being able to capture these network features simultaneously will only bring new insights on understanding how networks were formed, but also provide more sophisticated tools for the prediction of a future network with statistical guarantees. In this project, we adopt an autoregressive formulation for dynamic networks, which specifically depicts the dynamic change of the edges over time with joint consideration of node heterogeneity and link homophily. In particular, our model accounts for link homophily associated with both observed traits and latent traits of the nodes. A novel convex loss based framework is constructed to generate stable estimations for the high dimensional parameters.

Schedule & Detail:



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