MIDAS MICHIGAN INSTITUTE FOR DATA SCIENCE UNIVERSITY OF MICHIGAN

Seminar Series

Friday October 20, 2017 | **4:00-5:00 pm** | **Weiser Hall, 10th Floor**

Statistical Models for Analyzing Dynamic Social Network Data

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Abstract: Due in part to the ubiquity of online social networks these days, interest in analyzing social network data has spread beyond its traditional home in the social sciences to many other disciplines including physics, computer science, statistics, and engineering. A topic of significant importance in social network analysis is the creation of statistical models for social network data. Many social network data involve relations between people observed at multiple points in time and are thus *dynamic network* data. In this talk, I introduce several statistical models for analyzing both discrete- and continuous-time dynamic network data. Discrete-time network data, also known as network panel data, represent the structure of the social network at regular time intervals, e.g. over each week or each month. Continuous-time network data, also known as timestamped network or relational event data, are collected with finer granularity on the time and at irregular time intervals. I demonstrate how these models can be used to infer network structures and how they evolve over time on several dynamic social network data sets, ranging from face-to-face contacts between people at a university to emails between employees at a company to wall posts between users on Facebook.

Bio: Kevin S. Xu received the B.A.Sc. degree in Electrical Engineering from the University of Waterloo in 2007 and the M.S.E. and Ph.D. degrees in Electrical Engineering: Systems from the University of Michigan in 2009 and 2012, respectively. He was a recipient of the Natural Sciences and Engineering Research Council of Canada (NSERC) Postgraduate Master's and Doctorate Scholarships. He is currently an assistant professor in the EECS Department at the University of Toledo and has previously held industry research positions at Technicolor and 3M. His main research interests are in machine learning and statistical signal processing with applications to network science and human dynamics.

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MIDAS gratefully acknowledges Northrop Grumman Corporation for its generous support of the MIDAS Seminar Series.

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