



The Chinese University of Hong Kong  
Department of Statistics  
**Seminar**

**Portal Nodes Screening for Large Scale Social Networks**

By

Dr. Xuening ZHU  
School of Data Science  
Fudan University

**Abstract**

Network autoregression model (NAM), as a powerful tool to study user social behaviors on large scale social networks, has drawn great attention in recent years. In this paper, we are interested in identifying the influential users (i.e., portal nodes) in a social network under the framework of NAM. Especially, we consider the autoregression model that allows to have a heterogenous and sparse network effect coefficients. Therefore, the portal nodes take influential powers which are corresponding to the nonzero network effect coefficients. A screening procedure is designed to screen out the portal nodes and the strong screening consistency is established theoretically. A quasi maximum likelihood method is applied to estimate the influential powers. The asymptotic normality of the resulting estimator is established. Further selection procedure is given by taking advantage of the local linear approximation algorithm. Extensive numerical studies are conducted by using a Sina Weibo dataset for illustration purpose.

Date: July 2, 2019 (Tuesday)  
Time: 2:30 p.m. - 3:30 p.m.  
Venue: Liang Y C Hall - LHC Room 104  
The Chinese University of Hong Kong

ALL INTERESTED ARE WELCOME !!