

Seminar at the Department of Business Analytics at the University of Iowa

October 1st, 2021. Time: 11:00am-11:55am (US central time)

Title: Preserving Degree Distributions When Sampling from Networks

Speaker: Abhijeet Ghoshal

Abstract:

The need for effective approaches to generate sample networks from very large networks to facilitate easier analysis is well documented, as are the difficulties associated with doing so. The degree distribution of a network is recognized as an important property -- one that is closely related to many key network measures. In this paper, we address the problem of sampling from an undirected network while preserving its degree distribution as best as possible. We formulate it as an optimization problem, and as it is known to be hard, develop heuristics based on intuition drawn from the formulation. The effectiveness of the proposed heuristics are illustrated through experiments on various real-world networks.

Speaker Bio:

Abhijeet Ghoshal is an Assistant Professor of Information Systems at the Gies College of Business, University of Illinois Urbana Champaign. He received his PhD from University of Texas at Dallas. His current interests include recommendation system design, data sharing, privacy, and software support. He has published in several leading journals such as Management Science, Information Systems Research, MIS Quarterly, Production and Operations Management, and JMIS.

Paper: Contact the department for a copy.