

Presents the Spring 2014 EECS Seminar Series

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“Taming Big Data Variety: From Social Networks to Brain Networks”
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ABSTRACT

Over the past decade, we are experiencing big data challenges in various research domains. The data nowadays involve an increasing number of data types that need to be handled differently from conventional data records, and an increasing number of data sources that need to be fused together. Taming data variety issues is essential to many research fields, such as biomedical research, social computing, neuroscience, business intelligence, etc. The data variety issues are difficult to solve because the data usually have complex structures, involve many different types of information, and multiple data sources. In this talk, I'll briefly introduce the big data landscape and present two projects that help us better understand how to solve data variety issues in different domains. The first project addresses the challenge of integrating multiple data sources in the context of social network research. Specially, I will describe a network alignment method which exploit heterogeneous information to align the user accounts across different social networks. The second project addresses the challenge of analyzing complex data types in the context of brain network research. I will model the functional brain networks as uncertain graphs, and describe a subgraph mining approach to extract important linkage patterns from the uncertain graphs. I'll also introduce future work in this direction and explain some possibilities for upcoming evolutions in big data research.

BIOGRAPHY

Xiangnan Kong is a Ph.D. Candidate at the University of Illinois at Chicago in the Computer Science Department. He received a masters degree in Computer Science from Nanjing University (2009). His research interests are in analyzing and processing big data, with emphasis on addressing the data variety issues in biomedical research and social computing. In 2009, he joined the Big Data and Social Computing Lab at University of Illinois, Chicago, where he has been working mining graph data in the domains of neuroscience, biomedical informatics and social networks. One of his papers on graph mining was selected as a best ICDM'10 paper for publication in KAIS Journal. He serves as the information director and information specialist of ACM Transactions on Knowledge Discovery from Data. He is a co-founder of ScissorsFly, Inc., which is developing web clipping techniques for the online information management.