Scalable, Robust and Integrative Algorithms for Analyzing Big Network Data

Xiang Zhang

**PhD 2011 - University of North Carolina, Chapel Hill
Assistant Professor, Case Western Reserve University**

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Bio:

Dr. Xiang Zhang is the T&D Assistant Professor of Electrical Engineering and Computer Science at Case Western Reserve University. He received his Ph.D. in Computer Science from the University of North Carolina at Chapel Hill in 2011. His research interests include data mining, big data analysis, graph mining, network analysis, bioinformatics, and databases. His publications have been recognized by several awards including the Best Research Paper Award at SIGKDD'08, the Best Student Paper Award at ICDE'08, and best paper nominations at SDM'12 and ICDM'15. His doctoral dissertation received an honorable mention for 2012 ACM SIGKDD Dissertation Award. He received the NSF CAREER Award in 2016.

Abstract:

Networks (or graphs) provide a natural data model for numerous applications ranging from social, web, scientific data to biological and medical data. The real-world networks are usually very large, noisy and collected in different domains. Motivated by these properties of the data, in this talk, I will focus on three important algorithmic issues in analyzing large network data, i.e., scalability, robustness and integrativeness. I will use query and clustering, which are of fundamental importance to many advanced tasks, as examples to illustrate how we address these issues. In particular, I will introduce a local search algorithm for proximity query, a node weighting method for local clustering, and the network of networks model for integrating multiple networks.