

Computational Approaches to the Network Science of Teams

Business operations in large organizations today involve massive, interactive, and layered networks of teams and personnel collaborating across hierarchies and countries on complex tasks. To optimize productivity, businesses need to know: What communication patterns do high-performing teams have in common? Is it possible to predict a team's performance before it starts work on a project? How can productive team behavior be fostered? This comprehensive review for researchers and practitioners in data mining and social networks surveys recent progress in the emerging field of network science of teams. Focusing on the underlying social network structure, the authors present models and algorithms characterizing, predicting, optimizing, and explaining team performance, along with key applications, open challenges, and future trends.

LIANGYUE LI is an applied scientist at Amazon. He received his Ph.D. in computer science from Arizona State University. He has served as a program committee member in top data-mining and artificial intelligence venues such as SIGKDD, ICML, AAAI, and CIKM. He has given a tutorial at Web Search and Data Mining (WSDM) 2018, Knowledge Discovery in Databases (KDD) 2018, and a keynote talk at the Conference on Information and Knowledge Management (CIKM) 2016 Workshop on Big Network Analytics (BigNet 2016).

HANGHANG TONG is an associate professor at University of Illinois at Urbana-Champaign since August 2019. Before that, he was an associate professor at Arizona State University; an assistant professor at City College, City University of New York; a research staff member at IBM T. J. Watson Research Center; and a postdoctoral fellow at Carnegie Mellon University. He received his M.Sc. and Ph.D. degrees, both in machine learning, from Carnegie Mellon University in 2008 and 2009. His research interest is in large-scale data mining for graphs and multimedia. He received several awards, including the National Science Foundation (NSF) CAREER award (2017); the Industrial Conference on Data Mining (ICDM) 10-Year Highest Impact Paper Award (2015); four best paper awards (TUP'14, CIKM'12, SDM'08, and ICDM'06); six "best of conference" (ICDM'18, KDD'16, SDM'15, ICDM'15, SDM'11, and ICDM'10); one best demo, honorable mention (SIGMOD'17); and one best demo candidate, second place (CIKM'17). He has published over 100 referred articles. He is the editor-in-chief of SIGKDD Explorations, an action editor of *Data Mining and Knowledge Discovery*, and an associate editor of *Neurocomputing Journal*. He has served as a program committee member in multiple data-mining, database, and artificial intelligence venues such as SIGKDD, SIGMOD, AAAI, WWW, and CIKM.

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Liangyue Li
Amazon

Hanghang Tong
University of Illinois, Urbana–Champaign



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To my parents, Meifang Xu and Qing Li.

L. L.

To my parents, Xiazhen He and Yingen Tong, for their selfless love.

H. T.

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