Towards Real-time Processing on Billion-edge Graphs

SPEAKER **Dr Jieming SHI**

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VENUE Online via Zoom

ABSTRACT

Graphs are imposing great impact across disciplines and industries, as graph-centric applications have gone mainstream, e.g., recommendation on social networks, fraud detection on transaction networks, biological analysis on protein networks, and fact checking on knowledge graphs. Along with the thrive of Mobile Internet, graphs with billions of edges are ubiquitous. A crucial challenge is how to efficiently and effectively process graph data? Existing solutions are rather inefficient to handle billion-edge graphs for important graph computation. In this talk, I will introduce our latest studies on one fundamental graph task, i.e., measuring the relevance (or similarity) between nodes based on graph topology, which serves as a key component in many graph systems for aforementioned applications. Among all relevance measures, personalized PageRank (PPR) and SimRank are two prominent ones with extensive applications. I will elaborate on our real-time solutions that can answer PPR and SimRank queries on billion-edge graphs within 100 ms, which is far beyond state of the art. I will close my talk by pointing out promising research directions on graphs.

BIOGRAPHY

Dr Jieming Shi is currently a Research Fellow at School of Computing, National University of Singapore. He received his Ph.D. in Computer Science from The University of Hong Kong, and obtained his B.Sc. in Computer Science from Nanjing University. He has worked as Advisory Researcher at Machine Intelligence Research Center of Lenovo HK. Dr. Shi has research interests in big data analytics, databases, data mining and learning. He has published many high-quality papers to top-tier international journals and conferences, including VLDBJ, IEEE TKDE, SIGMOD, PVLDB, and NeurIPS. He is an invited reviewer for IEEE TKDE and WWWJ journals. He serves as the Program Committee member of several prestigious conferences, such as IJCAI, WISE, ACM CIKM, ASONAM, and PAKDD.

All are welcome!

In case of questions, please contact Prof Xiaohua Jia at Tel: 3442 9670, E-mail: csjia@cityu.edu.hk, or visit the CS Departmental Seminar Web at http://www.cs.cityu.edu.hk/.