Research Seminar

Real-time Processing on Billion-edge Graphs

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Date : 27 March 2020 (Friday)
Time : 11:00 a.m. - 12:00 noon

► Abstract

Graphs are imposing great impact across disciplines and industries, as graph-centric applications have gone mainstream, e.g., advertising on social networks, fraud detection on transaction networks, biological analysis on protein networks, fact checking on knowledge graphs, and graph neural networks. Along with the thrive of Mobile Internet, graphs with billions of nodes and edges are ubiquitous. A crucial challenge is how to efficiently process and effectively exploit graph data? Unfortunately, existing solutions are rather inefficient to handle billion-edge graphs for important graph tasks. In this talk, I will introduce our latest studies on one fundamental graph task, i.e., measuring the relevance (or similarities, influences) 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 wide adoption. I will elaborate on our new algorithms that can answer PPR and SimRank queries on billion-edge graphs in real-time (i.e., within 100 ms), which is far beyond state of the art. I will close my talk by pointing out promising research directions on graphs.

► About the Speaker

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 also worked as Advisory Researcher at Machine Intelligence Research Center of Lenovo HK. Dr Shi has research interests in the fields of big data analytics, databases, data mining and learning, especially large scale graph algorithms, graph mining, and graph learning. He has published many high-quality papers to top-tier international conferences and journals, including ACM SIGMOD, PVLDB, NeurIPS, VLDBJ and IEEE TKDE. He serves as the Program Committee member of several prestigious conferences, such as IJCAI, WISE, ACM CIKM, ASONAM, and PAKDD. He is an invited reviewer for IEEE TKDE and WWWJ journals. He has also been a Session Chair of IEEE MDM'19.

ALL are welcome!

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