Title: Knowledge Graph Data Management: State of the Art

Abstract:
With the rise of artificial intelligence, knowledge graphs have been widely considered as a cornerstone of AI. In recent years, an increasing number of large-scale knowledge graphs have been constructed and published, by both academic and industrial communities. In fact, a knowledge graph is essentially a large network of entities, their properties, semantic relationships between entities, and ontologies the entities conform to. Such kind of graph-based knowledge data has been posing a great challenge to the traditional data management theories and technologies. This talk is to introduce the state-of-the-art research on knowledge graph data management, which includes knowledge graph data models, query languages, storage schemes, query processing, and reasoning. We will also describe the latest development trends of various data management systems for knowledge graphs.

Xin Wang is a full professor at College of Intelligence and Computing and the vice-dean of School of Artificial Intelligence, Tianjin University. He obtained his Ph.D. and Bachelor degrees in Computer Science from Nankai University in 2009 and 2004, respectively, and worked as a visiting scholar at the University of Western Australia and Griffith University. He is a distinguished member of China Computer Federation (CCF), and the secretary-general of CCF Technical Committee on Information Systems, an executive member of CCF Technical Committee on Databases. His research interests include knowledge graph data management, large-scale graph databases, and big data processing. He has been the principal investigator of the National Key Research and Development Project of China, and three research projects funded by the National Natural Science Foundation of China (NSFC). He has published more than 100 research papers in various international conferences and journals, including IEEE TKDE, IEEE TPDS, ICDE, IJCAI, AAAI, WWW, CIKM, ISWC. He served as a PC co-chair of APWeb-WAIM'20, PC co-chair of JIST'19, and PC members of WWW, KDD, AAAI, CIKM, ISWC, etc. He won the best paper award in APWeb-WAIM 2021, the best poster award in ISWC 2020, and the best demo award in ADMA 2019. He is an associate editor of the journal of Knowledge-Based Systems and editor of the journal of Big Data Research.