THE UNIVERSITY OF HONG KONG
DEPARTMENT OF COMPUTER SCIENCE

Research Seminar

Efficient Path Querying on Graphs

Speaker: Miss. Yang Yue

Date: February 19, 2024 (Mon)

Time: 15:45 (HKT)

Venue: Room 328, Chow Yei Ching Building, HKU

Abstract

The graph is a data model that treats the relationships (edges) among entities (nodes) as first-class citizens. Applications that prioritize relationships, such as social networks, finance and bioinformatics, reap cognitive and computational benefits from viewing and storing their data as graphs. While the edges in graphs represent direct relationships, the paths reveal indirect relationships between entities. Path queries, which returns the paths satisfying certain constraints or their endpoints on a given graph, are thus central query forms in numerous applications. Efficient path querying is challenging due to the dynamic nature of real graph data and rich constraints on the queried paths. In this talk, we will introduce several optimization techniques for path queries inspired by other graph problems and relational query processing, including a community-detection-based algorithm for efficient reachability querying and a materialized view selection and view-based query planning framework for regular path queries. In addition, we will discuss the integration opportunities of efficient path algorithms in the optimization workflow of graph database systems.

About the Speaker:

Miss Yue Pang is a Ph.D. candidate at the Data Management Lab led by Professor Lei Zou at Wangxuan Institute of Computer Technology, Peking University. She is interested in efficient graph algorithms under diverse data and query paradigms, especially path algorithms, and query optimization from a graph database's perspective, on which she has published several papers in prominent venues such as ICDE, CIKM, etc.

All are welcome!

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