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SAYAN RANU

Title: Relationship-Aware Graph Querying in Large Networks

Abstract: The phenomenal growth of graph data from a wide variety of real-world applications has rendered graph querying to be a problem of paramount importance. Traditional techniques use structural as well as node similarities to find matches of a given query graph in a (large) target graph. However, almost all existing techniques have tacitly ignored the presence of relationships in graphs, which are usually encoded through interactions between node and edge labels. In this talk, I will introduce the idea of RAQ: Relationship-Aware Graph Querying to mitigate this gap. Given a query graph, RAQ identifies the k best matching subgraphs of the target graph that encode similar relationships as in the query graph. To assess the utility of RAQ as a graph querying paradigm, we have conducted user surveys on the Internet Movie Database (IMDb). The results show RAQ is effective in identifying matches that are relevant and are typically missed by traditional graph querying techniques.

Bio: Sayan Ranu is an assistant professor in the department of Computer Science and Engineering at IIT Delhi. His research interests include spatio-temporal data analytics, graph indexing and mining, and bioinformatics. Prior to joining IIT Delhi, he spent close to three years as an Assistant Professor at IIT Madras and a year and a half in the role of a Research Scientist at IBM Research. Sayan graduated from the University of California, Santa Barbara, where his dissertation on querying and mining graph databases served as the seed idea behind an R&D start-up focusing on drug discovery. He has published several papers in premier database and data-mining conferences including SIGMOD, VLDB, KDD and WWW. He received the Best Paper Award at the International Conference on Web Information Systems Engineering (WISE), 2016 and Most Reproducible Paper Award at SIGMOD 2018.