A Method of Subgraphs Extraction in a Large Graph Database in a Distributed System

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Abstract

Since many real applications such as web connectivity, social networks, and so on, are emerging now-a-days, thus graph databases have been commonly used as significant tools to exemplify and query complex graph data wherein each vertex in a graph usually contains information, which can be modeled by a set of tokens or elements. The method for subgraphs extraction by considering set similarity query over a large graph database has already been proposed, which retrieves subgraphs that are structurally isomorphic to the query graph, and meanwhile satisfy the condition of vertex pair matching with the (dynamic/fixed) weighted set similarity in a centralized system. This paper explains the efficient implementation of subgraphs extraction in a large graph database in a distributed environment by considering both vertex set similarity and graph topology which offers a better price/performance ratio and increases availability using redundancy when parts of a system fail than centralized systems in case of a large dataset (i.e., a graph with millions/billions of nodes wherein each node contains some information) by performing parallel processing.
References

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Index Terms

Computer Science Distributed Systems

Keywords

apache spark, distributed systems, graph topology, set similarity