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Host-graph-sensitive RETE nets for incremental graph pattern matching. (English)
Zbl 07493660

Summary: Efficient querying of large graph structures is a problem at the heart of several application domains such as social networks and model driven engineering. In particular in the context of model driven engineering, where the same query is executed frequently over an evolving graph structure, incremental techniques based on discrimination networks such as RETE nets are a popular solution. However, the construction of adequate RETE nets for a specific problem instance is a challenge in and of itself. In this paper, we propose an approach to RETE net construction for queries in the form of simple graph patterns that considers not only the structure of the query, but also the structure of the graph the query is being executed over in order to improve the net’s performance with respect to execution time and memory consumption. Furthermore, we suggest a technique for adapting the net structure to changing characteristics of the underlying graph. We evaluate the presented concepts empirically based on queries and data from two independent benchmarks.

For the entire collection see [Zbl 1482.68021].

MSC:
68P05 Data structures
68Q42 Grammars and rewriting systems
68R10 Graph theory (including graph drawing) in computer science

Full Text: DOI

References:
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