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Graph structures and algorithms for query-log analysis. (English) Zbl 1286.68014

Summary: Query logs are repositories that record all the interactions of users with a search engine. This incredibly rich user behavior data can be modeled using appropriate graph structures. In the recent years there has been an increasing amount of literature on studying properties, models, and algorithms for query-log graphs. Understanding the structure of such graphs, modeling user querying patterns, and designing algorithms for leveraging the latent knowledge (also known as the wisdom of the crowds) in those graphs introduces new challenges in the field of graph mining. The main goal of this paper is to present the reader with an example of these graph-structures, i.e., the query-flow graph. This representation has been shown extremely effective for modeling user querying patterns and has been extensively used for developing real time applications. Moreover we present graph-based algorithmic solutions applied in the context of problems appearing in web applications as query recommendation and user-session segmentation.

For the entire collection see [Zbl 1192.68009].

MSC:

68M11 Internet topics
68R10 Graph theory (including graph drawing) in computer science

Keywords:

graph mining; link mining; web mining; world wide web; query-log mining; query recommendation

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