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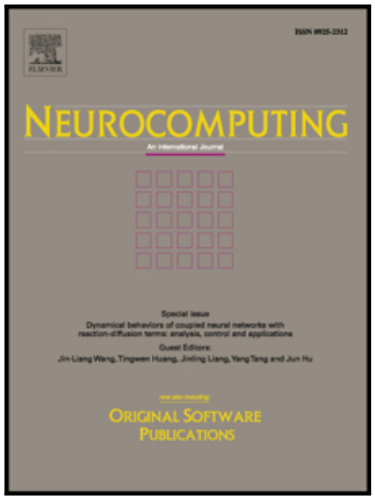

xStore: Federated Temporal Query Processing for Large Scale RDF Triples on a Cloud Environment

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`xStore`: Federated Temporal Query Processing for Large Scale RDF Triples on a Cloud Environment

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Abstract

Temporal information retrieval tasks have a long history in information retrieval field and also have attracted neuroscientists working on memory system. It becomes more important in Semantic Web where structured data in RDF triples, often with temporal information, are rapidly accumulated over time. Existing triple stores already support loading RDF triples and answering a given SPARQL query with time interval constraints. However, few triple stores has been optimized for processing time interval queries which are important for temporal information retrieval tasks. In this paper, we propose `xStore`, a federated SPARQL engine running on a cloud environment, which supports a fast processing of temporal queries. `xStore` is built on top of heterogeneous storages such as key-value stores and conventional triple stores. Experiments over real-world temporal datasets showed that our approach is faster than a conventional SPARQL engine for processing temporal queries.

Keywords: SPARQL, temporal query processing, RDF

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