

Departamento de Informática

Transactions in the Web of Data

Knowledge and Information Systems Group



CENTRIA



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Degrees:

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Objectives

The Semantic Web is an extension of the web to enrich it with content for machine consumption, shifting the web from a static set of webpages for humans-only, into a “web of data” where everything is connected. This paves the way to treat the web as a huge global database where complex queries and actions can be performed in heterogeneous websources simultaneously.

This work deals with actions and updates in this novel web of data, studying which transaction properties can or not be ensured. We aim to define a logic that models how updates and transactions can be executed in this peculiar environment.

Methodology

Transaction Logic is a knowledge representation formalism, which already provides means to reason and execute transactions in arbitrary domains.

We extend Transaction Logic with the ability to model a special set of external actions that follow a relaxed version of the transaction properties for the web context, different from the standard transactions found in databases.

Furthermore, to accommodate the behavior of a self-evolving web where everything is connected, we also provide an extension with reactive rules that enables Transaction Logic to reason with non-monotonic events.

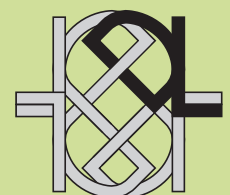
Expected Results

The obtained solution will provide the web with tools to reason and execute transactions programs that are able to relax the standard transaction model and react automatically to changes in the environment.

Providing such properties in this web context will give the web the missing reliability it needs to trigger the appearance of new and revolutionary applications.



Semantic Web



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efficient reasoning with rules and ontologies