Master's Thesis
at the Institute of Artificial Intelligence

Visualization of Description Logic Models

Description

The ontology language OWL allows for modeling application domains in a formal language. Tools for automatic reasoning, so-called reasoners, support the modelers by automatically detecting contradictory statements. For this purpose, reasoner try to construct a model of the application domain in which all formal constraints are satisfied. For the model construction, often tableau or hypertableau algorithms are used.

The goal of this thesis is to visualize the models constructed by a reasoner. For this the Java-based reasoner HermiT is to be extended, which already has a rudimentary model visualization component. For large models appropriate filtering techniques must be developed that allow users a good overview and navigation through a model.

Tasks

- Understanding the relevant parts of the reasoner HermiT in Java

- Development of a concept for visualization and filtering

- Implementation and evaluation of the system

Requirements

Good implementations skills in Java and knowledge of Semantic Web technologies (OWL, DLs, reasoning, . . .) and (hyper-)tableau procedures are required.

Further thesis offers are available at the institute's website at `http://www.uni-ulm.de/in/ki.html`.

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