



Masterarbeit

am Institut für Künstliche Intelligenz

Whitebox Debugging for Ontologies

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, reasoners try to construct a model of the application domain in which all formal constraints are satisfied. If this fails, the question arises for the modeler which pieces of information are contradictory. For this purpose, so-called black box debugging methods can be used, which calculate a minimal subset of the ontology, which is contradictory. The term black box debugging comes from the fact that these algorithms have no knowledge of the used reasoner.

The aim of this work is to directly use the information from the reasoner to calculate subsets of contradictory axioms and present them to the user. For this purpose, the Java-based reasoner HerMiT is to be extended, which so far presents such explanations only in an internal format from which the information specified in the ontology can no longer be read directly.

Tasks

- Understanding the existing Java-based reasoner HerMiT
- Implementation and evaluation of the presentation of the facts and axioms that lead to a contradiction

Requirements

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

Weitere Arbeiten finden Sie auf der Website des Instituts für Künstliche Intelligenz unter <http://www.uni-ulm.de/in/ki.html>.

Kontakt

Birte Glimm
Tel.: 50 24 125
Birte.Glimm@uni-ulm.de

Institut für Künstliche Intelligenz
Gebäude O27
Raum 448