



# Bachelor's or Master's Thesis

at the Institute of Artificial Intelligence

## Comparison of OWL Reasoners for SPARQL Queries

### Description

The ontology language OWL allows for modeling application domains in a formal language. Tools for automatic reasoning, so-called reasoners, derive from the explicit given information implied consequences by considering the semantics of OWL constructors. The query language SPARQL allows the formulation of queries over ontologies. The entailment regimes defined in version 1.1 of the SPARQL specification also enable retrieving answers from the implicit knowledge. The aim of this thesis is to analyse the performance and correctness of different OWL reasoners when evaluating SPARQL queries. Furthermore, it should be investigated which SPARQL features the different reasoners support. In addition to well-known benchmarks also own test cases are to be created as well as a suitable testing framework.

### Tasks

- Analysis of existing SPARQL OWL systems
- Development of test cases and a suitable test framework

### Required Skills

Good implementation skills in Java and knowledge of Semantic Web technologies (OWL, DLs, reasoning, ...) are required.

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

### Contact

Birte Glimm  
Tel.: 50 24 125  
[Birte.Glimm@uni-ulm.de](mailto:Birte.Glimm@uni-ulm.de)

Institute of Artificial Intelligence  
Building O27  
Room 448