



Master's Thesis

at the Institute of Artificial Intelligence

Classification Procedures for Ontological Reasoning

Description

Classification is one of the main reasoning tasks for automated reasoning systems for ontologies. The task refers to computing all sub- and superclass relationships and their arrangement in a class hierarchy within an ontology. The goal of the advertised thesis is the development and the implementation of a novel classification procedure, which is based on the principle of abstraction and refinement. Reasoning via abstraction and refinement does not consider the whole, often large ontology, but a representation of it, called the 'abstraction'. The abstraction is computed in an iterative fix-point procedure and is step by step refined. This technique offers the possibility of a new classification procedure, where no longer individual sub/ and superclass pairs are tested, but instead one can consider the types of representative elements in the abstraction.

Tasks

- Extension of the existing reasoning system for abstraction and refinement in Java.
- Evaluation of the implementation over existing ontologies and with other systems.

Required Skills

Good implementations 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>.

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