

Institute AIFB, Knowledge Management Research Group (Chair Prof. Dr. Rudi Studer)

We offer a

## Master Thesis

for students in Information Engineering and Management (Informationswirtschaft), Business Engineering (Wirtschaftsingenieurwesen), Economics Engineering (Technische VWL), Computer Science (Informatik) and interested students from other subject areas with substantial background and interest in computer science. The thesis topic is set in the area of:

### Implementing an application for knowledge acquisition that uses Amazon's Mechanical Turk and that is based on various methods for semantic content creation

Throughout the last few years, semantic technologies became more and more prominent in the World Wide Web as well as within enterprises. Despite the fact that there is lots of research going on in this field, there is a lack of semantic content and semantic data which to have is a prerequisite for every application that is based on semantics.

Due to the fact that such data cannot be produced fully automatically, human contribution is required on a large scale, however, producing labeled data can be a cumbersome and difficult task.

Amazon's Mechanical Turk (<https://www.mturk.com/mturk/welcome>) proved to be a convenient means to encourage people to create semantic data on a large scale resulting in benefits for the "workers" who earn money and for the community, being able to use the created knowledge in semantic applications.

The goal of this work aims at reviewing the state of the art in terms of knowledge acquisition and at creating an application that uses Amazon's Mechanical Turk and that is based on the methods described in <http://ai.stanford.edu/~dvickrey/game.pdf> for creating semantic data.

This includes for example methods

- for extracting hypernym/hyponym pairs,
- for capturing selectional preferences of verbs and
- for retrieving attributes/noun pairs.

#### Requirements:

- Prior knowledge of semantic technologies and solid background in Web technologies
- Java programming skills
- Good command of English, as a pre-requisite for a feasible understanding of the related literature and documentation (The thesis itself can be written in German)



For more information please contact Elena Simperl at +49 721 608 45778 or [elena.simperl@kit.edu](mailto:elena.simperl@kit.edu).