



Institute AIFB, Knowledge Management Research Group (Prof. Dr. Rudi Studer)
Karlsruhe Service Research Institute (KSRI)

We offer a

Diploma/Master Thesis

the thesis topic is

Exploiting Policy Structure for Human-Understandable Explanations

Background

Policies formalize descriptions of desired or allowed states of a specific type of policy subjects. Examples are access control policies, that specify which users are authorized to access a system, or Web service policies, that describe technical requirements for the successful invocation of a service. Such policies declaratively specify desired states, but not which actions are necessary to make a state compliant. In case of non-compliance, explanations can help the user to determine the required actions.

The simplest explanations are logical justifications for the negative classifications. Such justifications are however hard to understand for humans and especially for non-expert users of a policy-based system.

Better understandable explanations have to be structured in meaningful blocks, whose intents are described in natural language. Previous works on explanations are targeted at specific policy languages and use heuristics to structure explanations. The goal of this work is to develop an approach that abstracts from concrete policy formalisms and exploits the structure given by the policy specifier for presenting explanations in an aggregated manner, in which the user can zoom in to get more details.

Tasks

- Analysis of related literature (starting points will be given)
- Development of a use case scenario
- Refinement of a theoretical framework for explanation generation
- Implementation of the framework and application to the use case

Requirements

- Programming skills (preferably Java or Ruby)
- Ability to read English literature (Thesis can be written in German)

Contact

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