Bachelor' / Master's Thesis

Rapid prototyping of configuration systems

Context

Knowledge-based Configuration, Software Product Lines, Constraint Programming, Artificial Intelligence

Background

TUM's Model-based Systems & Qualitative Reasoning group is currently engaged in developing a generic, constraint-based configuration system called GECKO. The project aim is to develop an application-independent software solution for solving user-focused configuration problems.
One challenge for introducing GECKO to specific application areas is the effort to specialize the generic GECKO concepts. One major problem here is that without the specialized concepts it is very difficult to build prototypes or to conduct feasibility studies in new application domains. Therefore, MQM is planning to develop a modeling tool for the fast creation of application-specific configuration system prototypes, called RapidConfigurator.

Task

The outcome of this thesis shall be a prototypical software solution for generating customized GECKO systems. The expected tasks are:

- Requirements Analysis of the RapidConfigurator
- Development of a generic concept for assembling configurators
- Conceptualization of an user interface for modeling of configuration tasks
- Development of an interface to the GECKO Knowledge Acquisition Tool
- Feasibility and practicality of the developed concept have to be proven in a prototypical implementation

All steps have to be carefully documented.
The Thesis has to be written in English

Prerequisites

- All prerequisites for a Master's Thesis
- Experience in .net / C# or in another OO programming language
- Interest in Artificial Intelligence or Software Engineering

Supervisor

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