

Thesis Topic**Uncertainties in the modeling of self-adaptive systems****Motivation**

The complexity of the operation of modern software has grown enormously. Building self-adaptive software, which is software that can autonomously change its behavior in order to operate appropriately in dynamic contexts and changing environments, it is possible to provide the system with the ability autonomously manage some of this complexity, then relieving engineers of some operation effort.

To make its own decisions about its behavior, self-adaptive software uses models of its environment and internal structure, and model-based evaluation techniques. However, the acquisition of information to populate the model, the capability of the model itself to represent the reality, and the model-based evaluation techniques introduce uncertainties in the reasoning process of self-adaptive software.

Tasks

- Identify the existence of uncertainties in the models used by self-adaptive systems to represent the system and environment.
- Use uncertainty management techniques to handle the identified uncertainties.

Prerequisites *

- Software Engineering and Software Architecture
- Model-based evaluation of software systems

We offer you

We offer expertise in modeling and uncertainty analysis. Guidance through the development of the thesis.

We require commitment. We can have a meeting before committing to do the thesis.

Time frame**Supervisor(s)**

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* All the course codes, like e.g. 1DV101, refer to courses here at DFM. Similar documented experience from other places will do just as well.