

MASTERTHESIS

LANGUAGE ENGINEERING FOR PRIVACY PRESERVATION OF PERSONAL DATA

Ansprechpartnerin



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Aufgabenstellung

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From now on, the Chair for Software Engineering at the RWTH Aachen offers the following master thesis:

TASK

The SE Chair has extensive experience in generative software development in general and its MBAIS working group in particular in the model-driven generation of enterprise information systems as web applications. In this context, a new Domain Specific Language (DSL) should be developed.

Due to Europe's General Data Protection Regulation (GDPR) organizations are obliged to consider privacy throughout the complete software development process (privacy-by-design). From the software engineering perspective, it is important to ensure and document data handling and to support data subjects to have agency over the processing of their personal information. For the practical application, two aspects are relevant for the realization of such a system with model-driven software engineering (MDSE) methods: (1) to identify and define all relevant data to ensure privacy preservation and (2) an architectural model to monitor the compliance of policies. This master thesis focusses on the first aspect.



In the scope of this thesis, you will develop a DSL for privacy preservation of personal data with the language workbench and code generation framework MontiCore. You will show the practical application of your DSL in a use case from the production process.

FOCUS AREAS

- Data model for a system using attribute-based access control (ABAC) including privacy policies and the generation of a user-friendly information portal
- Development of a MontiCore Grammar for Privacy-Preservation based on preliminary work of the research group
- Generation of the database out of the models
- Evaluation of the results with a use case from the production process

PREFERABLE EXPERIENCE

- Java development
- Lecture Software Language Engineering
- Interest in data privacy and code generation