

BACHELORTHESIS / MASTERTHESIS

ONTOLOGIES AND MODEL-DRIVEN SOFTWARE ENGINEERING OF INFORMATION SYSTEMS

Are you **interested** in this topic?

For **more information**, please contact us.

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Task Definition

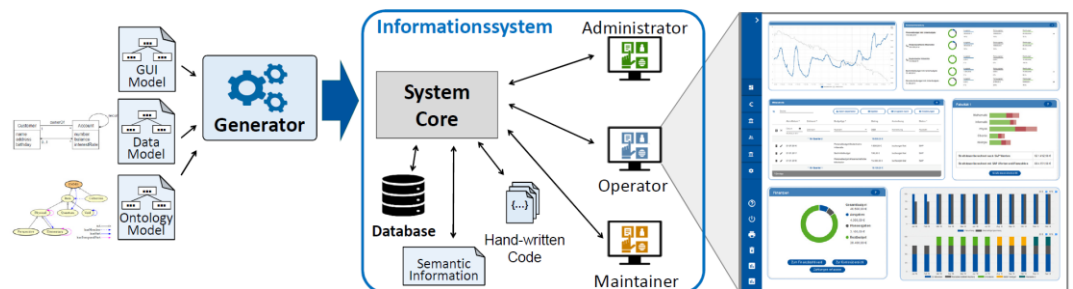
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The chair of software engineering in collaboration with the chair for Information Systems of the RWTH Aachen offers the following thesis.

TASK FIELD

An ontology offers a way of defining and sharing knowledge and information between domain experts in a machine processable form. Domain-Specific Languages (DSLs), on the other side, provide simple and effective solutions to formalize domain artifacts. Over a long period of time, research communities using DSLs and ontologies have been working in parallel isolation. The aim of this thesis is to bridge this gap by building the connection of ontologies to well-studied languages like the UML class diagrams in the data structure of an application.



The task of this thesis is to engineer a methodology to enrich the information system generated by *MontiGem* with the semantic information of an ontology. The generator needs to be extended to connect the classes and properties of an ontology to the data structure created from the classes and attributes of class diagrams in the *MontiCore* language *CD4A*. This way, additional information, meta-data and relations or extended queries can be attached to the developed information system and can be made visible in the application.

AREAS OF FOCUS

- Investigation of current ontology methodologies and their implementations like *DCAT* or from the Linked Open Vocabularies (LOV)
- Realization in the Enterprise Information System *MontiGem*
- Evaluating the method with a use-case from the Internet of Production (IoP)

DESIREABLE PRIOR KNOWLEDGE

- Basic knowledge about modeling, e.g., UML class diagrams
- Basic knowledge in the Semantic Web
- Programming Experiences in Java