Prof. Timo Kehrer

Faculty of Mathematics and Natural Sciences
Department of Computer Science
Model-driven Software Engineering



Expertise

Model-driven engineering raises the level of abstraction in software engineering by using models as primary development artifacts. In particular, domain-specific modelling languages can ease the transition between informally sketched requirements or designs and implementations by supporting high-level yet formal representations as a starting point for automation. Moreover, using a model-based development approach, critical system properties can be analyzed, validated and verified even before the system is actually built. Model-driven development thus leads to an increase in both productivity and quality. To some extent, model-driven engineering has made its way into industrial practice, most notably for the development of embedded systems in various domains. However, model-driven engineering does not suffice to successfully manage all challenges of modern software engineering, and actually creates new problems. Research conducted at the Chair of Model-driven Software Engineering is particularly driven by relevant challenges and problems arising from the adoption of the model-driven engineering paradigm in industrial practice.

Scientific Services

- Experience in implementing model-based development engineering methods, techniques and processes
- Know-how regarding the set-up of model-based transformation chains (domain-specific modeling languages, model transformation and interpretation, code generation) and development environments (collaborative modeling, (co-)evolution of models, model repair and synchronization)
- Expertise in the field of version and variant management, especially customized configuration management and software product lines

Testimonials

- Collaboration with a Berlin-based software company on the development of innovative software architecture analysis techniques for the quality assurance of embedded systems
- Consulting for a major German automotive supplier with regard to fundamental questions of configuration management of models for the model-driven development of embedded systems
- Support of an international electrical engineering corporation with the model-based development of software components for a new generation of internet-based multimedia building communication systems

Topics / Trends

Cloud Computing
Communication(s) Systems
Software Development
Knowledge Management

Industries

Information & Communication Technology
Aerospace
Mobility & Logistics

Mentor for Startup

Fritzi PFA UG (haftungsbeschränkt)

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