Prof. Lars Grunske



Faculty of Mathematics and Natural Sciences
Department of Computer Science
Software Engineering

Expertise

At the Chair of Software Engineering, Prof. Grunske and his team specialise in methods of software technology relevant to the field of automated development and quality control of software systems. His work also involves probabilistic techniques on the basis of which the probable and less probable behaviour of a program can be modelled. This allows for easier discovery and correction of software anomalies. Such statistic models are used in the monitoring and debugging of programs during runtime as well as in testing software, which supports the development of safe and reliable software systems. Furthermore, Prof. Grunske develops methods that enable a precise definition of the quality requirements of software systems, the formalisation of verification conditions as well as the (technical) safety in embedded systems and process and performance management.

Scientific Services

- Software engineering
- Testing and verification
- Statistics/probabilistic methods

Testimonials

- Formalisation of application scenarios in cooperation with TWT GmbH: “Safe.Spec: Quality control of behaviour requirements”
- Using software systems to derive probabilistic models that can be used as specification during the software engineering process: „EMPRESS: Extracting and Mining of Probabilistic Event Structures from Software Systems”
- Development of evaluation methods for probabilistic models as well as machine learning based techniques for the transformation of models: “ENSURE-II: ENsurance of Software evolution by Run-time cErtification”

Topics / Trends

Big Data & Data Management
E-Mobility / New Mobility
Vehicle Assistant Systems & Navigation Systems
Internet of Things
Robotics & Artificial Intelligence
Software Development
Continuing Education / Lifelong Learning

Industries

Information & Communication Technology
Aerospace
Mobility & Logistics

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