Time-to-market and continuous improvement are key success indicators for Internet of Things (IoT) systems and Cyber-Physical Production Systems (CPPSs). DevOps aims at combining software development („Dev“) and IT operations („Ops“) into a highly-integrated continuous loop. Through agility and automation of complex pipelines across the CPPSs lifecycle, DevOps shortens development time and provides continuous delivery with high software quality. Through this continuous delivery, the quality, sustainability, and resiliency of IoT & CPPSs can be continuously improved.

The goal is to conceive a novel model transformation framework that enables DevOps engineers to derive (partial) Ops models (digital twins) from Dev models to facilitate the efficiency, reliability, and robustness of engineering digital twins. However, the physical twins might change in ways unforeseen at design-time. To capture these changes, this transformation framework shall provide novel methods for the semantics-aware update of Dev models through digital twins at runtime.

Focus of Research:
- Analysis of model change patterns in CPPSs
- Conception of semantics-aware model update transformations
- Development of a modeling language transformation framework
- Integration of this framework with researchers from RWTH Aachen and INRIA Rennes
- Evaluation of this framework in the context of industrial CPPSs

Your Profile:
- Studies in computer science, software engineering or a related field
- Knowledge in model-driven development
- Interest in international collaboration
- Communication skills in English and German
- Motivation to learn and master interesting challenges independently
- Creativity and problem solving skills

We offer:
- The opportunity to do a doctorate
- Exciting and varied tasks in an innovative and significant environment
- Innovative and interesting insights into current and future technological developments
- A career springboard with practical relevance in which initial management experience is gained
- Collaboration in a young and motivated team
- Great working atmosphere with exciting social events in an urban working environment with good transport connections

Send your application to:
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