Informatik-Kolloquium

The Department of Computer Science of Johannes Kepler University Linz[1] together with the Austrian Society of Computer Science (ÖGI) invites to the following talk:

Topic: **An Approach to Transforming UML Model to Layered Queueing Networks Model for Performance Analysis of Real-Time Distributed Systems**

Presenter: **Dr. CHEN LI, Department of Computing South Kensington Campus, London**

Date: **Friday, September 1st 2017, 10:00 – 11:00**

Location: **JKU, Computer Science Building,(Science Park 3) room 218**

Abstract: Motivated by the problem of detecting software performance anti-patterns in real-time distributed systems, we proposed an approach to reflecting the runtime monitoring information, especially performance metrics, back into design time models to reason about system performance improvements. To be specific, we transform software architecture models specified through UML model annotated with DICE and MARTE performance annotations into Layered Queueing Network (LQN) performance model, which are analytical performance models used to capture contention across multiple software layers. In particular, we generalize an existing transformation based on the Epsilon framework to generate LQNs in a format supported by existing solvers (e.g., LQNS). After solving the performance model, the results can be used for performance anti-patterns detection and generating refactoring decisions.

Short Bio: Chen Li is a researcher associate in the Analysis, Engineering, Simulation & Optimization of Performance group in Imperial College London, London, UK. He received the B.Sc. degree in computer science and technology from University of Science and Technology of China in 2003, the M.Sc. degree in computer applications technology from the University of Shanghai for Science and Technology in 2010, and the Ph. D. degree in computer science and technology from Shanghai Jiao Tong University in 2015. His research interests are in model-driven software engineering with a focus on modelling, verification, model transformation and performance analysis of large and complex software systems (e.g., Big-Data oriented systems, systems of system), and applied formal methods

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