A bridge over troubled water - Synergies between model transformation and software maintenance techniques

Keynote talk

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I. ABSTRACT

Model transformations aim to process one (or more) source model in order to derive one (or more) target model, thus acting in the role of compilers in a model driven engineering context.

In actual application scenarios, model transformations play a key role in (1) providing systematic bridges between various domain-specific modeling languages (2) driving the automated derivation of the design artifacts of software-intensive systems (source code, configuration files, documentation, etc.), or simply (3) detecting inconsistencies and design rule violations in an early phase of development.

This talk aims to build a bridge between model transformation techniques and traditional software maintenance. More specifically, I will first overview recent advances in model transformations, which can be easily and efficiently applied for various software maintenance or reengineering problems. Conversely, I will also present recent results where software maintenance approaches significantly improved the state-of-the-art of model transformations. Finally, I will also identify some challenges and research gaps to facilitate future collaboration between the two communities.

II. BIOGRAPHY

Dániel Varró is an associate professor at the Budapest University of Technology and Economics where he received his PhD in 2004 and his habilitation in 2011. His main research interest is model-driven software and systems engineering with special focus on model transformations. He published over 100 papers, and received a Springer Best Paper Award and ACM Distinguished Paper Award at the MODELS 2009 conference.

He is a member of the editorial board of the Software and System Modeling journal (Springer), and regularly serves in the programme committee of various international conferences in the field. He was the local organizing chair of ETAPS 2008 and EDCC-5 held in Budapest, and he is a PC co-chair of AGTIVE 2011.

He is the founder of the VIATRA2 model transformation framework and EMF-IncQuery project, and the principal investigator at his university of the SENSORIA, DIANA, and SecureChange European research projects. He is a three time recipient of the IBM Faculty Award. Previously, he was a visiting researcher at SRI International, at the University of Paderborn and twice at TU Berlin.