Seeing Errors: Model Driven Simulation Trace Visualization

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Abstract

Powerful theoretical frameworks exist for model validation and verification, yet their use in concrete projects is limited. This is partially due to the fact that the results of model verification and simulation are difficult to exploit. This paper reports on a model driven approach that supports the user during the error diagnosis phases, by allowing customizable simulation trace visualization. Our thesis is that we can use models to significantly improve the information visualization during the diagnosis phase. This thesis is supported by Metaviz - a model-driven framework for simulation trace visualization. Metaviz uses the IFx-OMEGA model validation platform and a state-of-the-art information visualization reference model together with a well-defined development process guiding the user into building custom visualizations,essentially by defining model transformations. This approach has the potential to improve the practical usage of modeling techniques and to increase the usability and attractiveness of model validation tools.

Keywords

Software visualization trace exploration embedded systems model based validation model dynamic analysis

Preview

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