

Praxis der Forschung

Model Slicing

Background. Program slicing simplifies software systems by isolating specific aspects while preserving behavior, creating the smallest possible program based on a given criterion. Extending this to models allows for creating sub-models that focus on the most relevant parts, reducing complexity and making analysis, verification, and comprehension more efficient.

Vision. We aim to develop syntactic slicing methods that identify minimal subsets of model elements while preserving a given semantic criterion. To ensure that these slices remain valid for analysis tools, they should be instances of a proper meta-model. To achieve this, we propose two complementary approaches. (1) model-level slicing produces slices that remain valid within the original metamodel. (2) metamodel-level slicing simplifies the metamodel itself, creating a new metamodel and generating corresponding instances based on the original model. Additionally, we envision semantic slicing methods, where one model's semantics define the slicing criteria for another. This approach can simplify analyzing interconnected models by reducing one model based on its overlap with another.

Your Task. The goal is to develop syntactic and semantic slicing methods that generate minimal sub-models, that are valid instances of a (possibly sliced) metamodel.

Your Profile. You should have a background in model-driven engineering and formal analysis.



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