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"Checking Contracts for AOP using XPIDRs"
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ABSTRACT

Over the last years, several proposals have advocated that a notion of interface between the base code and aspect code is necessary for reasoning about aspect-oriented programming (AOP), and for overcoming pointcut fragility. However, existing work that are AOP based, have not shown how one can specify these interfaces to facilitate modular reasoning and specify control effects, such when advice does not proceed.

In this talk, we show how our crosscut programming interfaces with design rules, or XPIDRs allow modular understanding and enforcement of control flow effects. The key idea behind our design methodology is to introduce a design phase for each crosscutting concern. Hence, a designer establishes a crosscutting design rule interface to decouple the base and the aspect design. Such a crosscutting design rule is based on the well-known crosscut programming interfaces (XPIs). The main difference is that we present XPIs with the notion of behavioral rules. We also show that since our approach with XPIDRs do not require any new AOP construct; they can be adopted in a straightforward manner by the AOP community.

BIOGRAPHY

Henrique Rebêlo is one of the authors of the XPIDRs. He has extensive experience in separation of concerns and design by contract techniques. He co-developed the aspect-oriented JML compiler known as ajmlc. This compiler uses AOP for enforcing JML contracts at runtime. He was a researcher intern in 2010 at Microsoft Research working on program analysis and program verification. He has given talks on design by contract and AOP at prestigious venues like SEKE'11, FTFJP'11, SAVCBS'09, ICST'08, and SAC'08.

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