



Best Tool Paper Award

Dynamic Verification of OCaml Software with Gospel and Ortac/QCheck-STM

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This paper presents the Ortac/QCheck-STM tools with many easy to grasp examples. The approach effectively integrates Gospel-based contracts with property-based testing in OCaml. Functional models are generated from annotated module signatures and the tool performs automated runtime assertion checking, which lead to the discovery of five bugs in real OCaml libraries. The tool provides practical utility, solid engineering, and seamless integration into the OCaml ecosystem. Another highlight is the ability to test stateful systems without requiring complex specifications, a distinguishing feature compared to related approaches.

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