



Software Engineering Seminar (WS 2015)

Significance-Based Model Checking for Reliability Estimation

Description

Model-based reliability estimation of systems can provide useful insights early in the development process, but computational complexity of estimating reliability metrics can be prohibitive both in time, space and precision. Recently there have been approaches that aim at prioritising only significant portions of the software system to arrive to estimations of these reliability metrics, and do so with some degree of confidence [1, 2]. These works could be regarded as a first step towards significance-based guided model checking as well.

References

- [1] Esteban Pavese, Víctor Braberman, and Sebastian Uchitel. Automated reliability estimation over partial systematic explorations. In *Software Engineering (ICSE), 2013 35th International Conference on*, pages 602–611. IEEE, 2013.
- [2] Xin Zhang and Franck Van Breugel. A progress measure for explicit-state probabilistic model-checkers. In *Automata, Languages and Programming*, pages 283–294. Springer, 2011.

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