



Software Engineering Seminar

Test Case Generation

Description

The recognition of a bug is the first step on the road to fixing it. As, generally, there does not exist a formal specification for the software system under consideration, a *test suite* is being used to help ensure the correctness of the system. When executing a test suite, a failing test case is an indication of an error that resides in the system.

A problem associated with test suites is that, at some points in the development of a software systems, someone has to create and to maintain them. To this end, *automated techniques* for test case generation are desirable in order to achieve various test goals (maximum line/branch coverage, etc.) which may be specified by the user. The goal of this topic is to obtain an overview over existing techniques for automated test case generation and to evaluate them based on their applicability.

References

- [1] Shay Artzi, Julian Dolby, Frank Tip, and Marco Pistoia. Directed test generation for effective fault localization. *Proceedings of the 2010 international symposium on Software testing and analysis - ISSA '10*, pages 49–59, 2010.
- [2] S. Rayadurgam and M.P.E. Heimdahl. Coverage based test-case generation using model checkers. *Proceedings. Eighth Annual IEEE International Conference and Workshop On the Engineering of Computer Based Systems-ECBS 2001*, pages 83–91, 2001.

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