MT2Way: A novel strategy for pair-wise test data generation

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ABSTRACT
Reducing the number of test cases by utilizing minimum possible amount of time during the testing process of software and hardware is highly desirable. For ensuring the reliability of the method the combination of a complete set of available inputs is recommended to be executed. But generally an exhaustive numbers of test cases are hard to execute. Besides, test data generation is an NP-hard (non-deterministic polynomial-time hard) problem. This is likely to present considerable difficulties in defining the best possible method for generating the test data. The reduction of test cases depends on the interaction level, 2-way interaction or pair-wise test data can reduce high number of test cases and it efficiently addresses most of the software errors. This paper presents MT2Way, an effective 2-way interaction algorithm to generate the test data which is more acceptable in terms of the number of test cases and execution time. The performance tests show that MT2Way achieve better results in terms of system configuration, generated test size, and executing time as compared to other techniques.

KEYWORDS:
Combinatorial Interaction Testing; Software Testing; Pair-wise Testing; Test Case Generation

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