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Model-Based Software Regression Test Suite Reduction

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Abstract : In this paper, we present a model-based regression test suite reducing approach that uses EFSM model dependence analysis and probability-driven greedy algorithm to reduce software regression test suites. The approach automatically identifies the difference between the original model and the modified model as a set of elementary model modifications. The EFSM dependence analysis is performed for each elementary modification to reduce the regression test suite, and then the probability-driven greedy algorithm is adopted to select the minimum set of test cases from the reduced regression test suite that cover all interaction patterns. Our initial experience shows that the approach may significantly reduce the size of regression test suites.

Keywords : dependence analysis, EFSM model, greedy algorithm, regression test
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