

The SBSE Approach to Automated Optimization of Verification and Testing

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Abstract. The aim of Search Based Software Engineering (SBSE) research is to provide automated optimization for activities right across the Software Engineering spectrum using a variety of techniques from the metaheuristic search, operations research and evolutionary computation paradigms. The SBSE approach has recently generated a great deal of interest, particularly in the field of Software Testing. There is a natural translation from test input spaces to the search spaces on which SBSE operates and from test criteria and goals to the formulation of the fitness functions with which the search based optimization algorithms are guided. This makes SBSE compelling and generic; many testing problems can be formulated as SBSE problems. This talk will give an overview of SBSE applications to testing, verification and debugging with some recent results and pointers to open problems and challenges.