Analyzing Test Data Generation Techniques Using Evolutionary Algorithms

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Abstract : Software Testing is a vital process in software development life cycle. We can attain the quality of software after passing it through software testing phase. We have tried to find out automatic test data generation techniques that are a key research area of software testing to achieve test automation that can eventually decrease testing time. In this paper, we review some of the approaches presented in the literature which use evolutionary search based algorithms like Genetic Algorithm, Particle Swarm Optimization (PSO), etc. to validate the test data generation process. We also look into the quality of test data generation which increases or decreases the efficiency of testing. We have proposed test data generation techniques for model-based testing. We have worked on tuning and fitness function of PSO algorithm.