A Genetic Algorithm Approach for Optimal Allocation of Software Testing Effort

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Abstract

Allocation of limited testing efforts to a software development project is a complex task for software managers. The challenges become difficult when the nature of the development process is considered in the dynamic environment. Numerous software reliability growth models have been proposed in last one decade to minimize the whole testing effort expenditures, but generally under static assumption. The main purpose of this article is to distribute total testing resource optimally under dynamic condition. An elaborate optimization policy is proposed using genetic algorithm and numerical example is also demonstrated. Genetic Algorithms (GAs) works with a set of individuals, representing probable solutions of the task. The selection theory is applied by using a criterion, giving an evaluation for the individual with respect to the desired solution. This article also studies the optimal resource allocation problems for different conditions by investigative the activities of the model parameters.
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