

SCAVS: Implement Sine Cosine Algorithm for generating Variable t-way test suite

Abstract

Exhaustive testing occurs between interaction elements (i.e., factor and level). In reality, The software system is often impractical because of other constraints, such as cost and time restrictions. The t -way testing (where t indicates the interaction strength) is one of the powerful software, and practical test techniques apply to detect interaction errors between components (i.e., produce quality minimized test cases). The t-way testing is highly complicated (NP-hard). Therefore, many Meta-heuristic algorithms are used to solve combinatorial problems successfully. In general, one of the most effective optimizations algorithm-based techniques SCA. With respect mentioned above, this paper discusses the implementation Sine Cosine Algorithm for generating a variable strength t-way test suite called SCAVS. The results of the experiments showed that SCAVS outperformed and yielded better test sets than other existing other strategies.

Keywords

Meta-heuristic; Sine Cosine Algorithm; T-way Testing; Test Suite Generation; Variable-strength interaction