Abstract

Reachability testing is a mixture strategy, combine non-deterministic and deterministic testing accomplishes a test run deterministically up to a definite point and then allow synchronized program to work non-deterministically. A game theoretic approach is the learning approach of mathematical models of variance and collaboration between intellectual rational decision-makers. To overcome the conflicts arises in the game theoretic approach, the previous work considered the fault discovery of reachability testing from a game theoretic point of view. But the downside of the previous work is that it supports only homogeneous applications rather than heterogeneous and web applications. Proposal in this work presented a web based reachability testing model encompassing a state of Nash equilibrium for heterogeneous applications. Heterogeneous application comprises of parallel and divertive function which have contributory influence over one another at different instances. The proposal adopts game theoretic approach which supports parallel and diversive functions by maintaining equilibrium state for contra functions. Evaluation of reachability test is conducted on to testify the integrity of newer functions with previous versions of the program. Simulations are conducted with web and heterogeneous application to evaluate the performance of proposed web based reachability testing model for both homogeneous and heterogeneous applications. The reliability of our proposal model shows improvement minimal testing time i.e., nearly 16%, and memory usage i.e nearly 17% compared to the existing reachability testing
methods.

References


Index Terms

Computer Science

Software Engineering
Keywords
Reachability Testing  Game Theoretic Approach  Heterogeneity  Fault Detection  Web Applications