Abstract

Fault localization is an expensive technique in software debugging. Program dependence graphs are used for testing, debugging and maintenance applications in software engineering. Program dependence graphs (PDG) are used to build a probabilistic graphical model of program behavior. In this paper we proposed a model based fault localization technique using probabilistic program dependence (PPDG). This work presents algorithm for constructing PPDGs and PPDGs based fault localization. Our experimental result shows that proposed PPDG based fault localization method performs better than existing testing based fault localization (TBFL) method for DotNet programs. Our results also indicate that the probabilistic approach is efficient for fault localization.
Fault Localization using Probabilistic Program Dependence Graph


Index Terms

Computer Science
Software Engineering
Keywords
Probabilistic Program Dependency Graph  Program Dependency Graph  Testing Based Fault Localization
Conditional Probabilistic Table