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传值进程模型检测中诊断信息的生成

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Abstract

Automatic diagnostic information generation is one of the remarkable advantages of model checking methods. It is very important to understand the reason for the failure and fix the problem. In this paper, how to generate effective diagnosis in model checking value-passing processes is discussed. Two diagnostic forms, proof graph and witness, are defined. Moreover, algorithms are proposed to construct them from the search states space in model checking process. By this way, useful diagnoses are generated from the existing information by less calculation. Besides above, the algorithms have been implemented and used to analyze several cases. The experimental results show that this method is efficient.

Liu J, Lin HM. Diagnostic information generation in model checking value-passing processes. *Journal of Software*, 2003,14(1):1~8.

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摘要

诊断信息自动生成是模型检测方法的基本特征之一,对分析和排错具有重要的意义.讨论了传值进程模型检测中诊断信息的生成问题.引入了两种诊断信息的表示结构:证明图和示例;提出了两种诊断信息构造算法.所采用的方法是从检测过程保存的依赖信息中抽取证明图和示例,这样可以继承已有的信息,从而减少计算量.相应的算法已经实现并用实例作了分析测试.实验结果表明该方法是有用的.

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