

## 一种基于扩展类控制流图的类测试技术

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**摘 要:** 面向对象程序中的类是测试的基本单元, 采用数据流测试技术, 改进了原有生成类的调用控制流图算法, 生成扩展的类控制流图(ECCFG), 实现了对类中方法内、方法间、类内部以及类间定义-使用对的分析, 有效地解决了由于面向对象程序的继承性, 导致的此前研究中对于单一类测试的覆盖率不足的问题。

**关键词:** 类测试; 数据流分析; 控制流; ECCFG

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## Class Testing Based on Extended Class Control Flow Graph

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**Abstract:** Class is the basic unit to object-oriented program testing. On the basis of data-flow testing, an expended class control flow graph(ECCFG) was introduced in this paper, it improved class control flow graph algorithm to analysis the def-use pairs in intra-method, inter-method, intra-class and inter-class, which effectively solved the problem of inadequate coverage caused by focusing on single class testing and ignoring the inheritance of object-oriented program.

**Key words:** class testing; data-flow analysis; control flow; ECCFG

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