产品、研发、测试

GUI软件自动测试探索

吴恒山 姜文君

华中科技大学计算机学院数据库与多媒体研究所 华中科技大学计算机学院

摘要　　这篇论文基于分层有限自动机(HFSM)模型对被测图形用户界面(GUI)软件建模；采用主动搜索技术确定GUI控件；利用均匀设计方法搜集测试数据；利用测试数据驱动测试执行。采取自顶向下地增量式测试；首次测试生成和执行同步进行；回归测试时，只需进行少量测试数据、HFSM状态或状态迁移的修改。文章最后与winrunner进行了多项对比。

关键词　　数据驱动　增量测试　GUI自动测试　HFSM

分类号

Automatic testing of GUIs with HFSM model

Abstract

The widespread use of graphical user interfaces(GUIs)has intensive impact on both software developing and testing. This paper focus on GUI's automatic testing. The most difficult thing is test case generation. Traditional method is capture/replay. Since there are so many paths in GUIs, This method is quite tiring and boring. This paper adopt a new technique to test GUIs automatically .It models GUIs with Hierarchical Finite State Machine, search GUIs' components initiatively and automatically, and collect tesing data with 'uniform design' method. Testing data drive the test to be executed. According to the characteristics of GUIs, this paper adopts incremental testing, to avoid error accumulation. The first test generation and execution is synchronous. On regress testing, if there are some changes on the GUIs, only some changes need to be made on testing data and HFSM.

Key words　data driving　incremental test　GUI automatic testing　HFSM

DOI:

通讯作者　姜文君　wenjj8a@163.com