Software Engineering Seminar

Mutation-Based & Spectrum-Based Fault Localization

Description

The search for an error that occurred in a program is often times more time-consuming than the actual repair. Automated fault localization attempts to locate the source of the bug automatically with or without the support of the developer. Apart from the widely used spectrum-based fault localization (SBFL) which has been extensively studied and improved over the years, mutation-based fault localization (MBFL) has been proposed in [3]. In MBFL, the mutation of program statements allows for conclusions about the mutated statements being correct or faulty based on the results of executed test cases. In addition to both techniques applied by themselves, combinations of SBFL and MBFL have been proposed in [2, 1], for example.

The student should examine and discuss existing approaches to combine MBFL and SBFL techniques.

References


Contacts

Simon Heiden (heiden@informatik.hu-berlin.de)
Software Engineering Group
Institut für Informatik
Humboldt-Universität zu Berlin