Automated Root Cause Analysis of Flaky Tests (BS or MS)

The quality of the product is uncertain if the test cases change their outcome (i.e., from pass to fail or vice versa) without modifications in the codebase. Tests that change their outcome without any modification in the code base are called flaky tests. The common method to detect test flakiness is to re-run the test cases to check if test cases outcomes are deterministic. The cost of re-running tests is often high. In addition to re-running tests, developers put effort and time to investigate the root causes of test flakiness. This thesis involves developing a technique that can help developers to identify the root cause of test flakiness automatically. A similar approach is investigated at [1]. The thesis involves flaky test data collection, developing, implementing, and evaluating the proposed technique with open-source software. This thesis can be scoped within BS or MS. Contact us to know more about the topic.

[1] https://www.microsoft.com/en-us/research/uploads/prod/2019/11/LamETAL19RootFinder.pdf