

Machine learning approaches to detecting software changes for bug localization

supervised by

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Enterprise software systems change from time to time to meet the requirements from end users. In modern software development practice, the requirements are recorded as issues (business stories, technical tasks or bug reports) in an issue-tracking system, such as JIRA. The developer who is assigned an issue, will make necessary changes (adding, deleting, modifying) to source code, in order to meet the needs defined in the assigned issue.

Though rigorous processes (such as bug detection, code review and testing) before release have been used to ensure the quality of each code change, the existence of software bugs is still inevitable. The emerging bugs (e.g, reported by end-users) recorded in the issue-tracking systems are triaged by software developers. However, triaging software bugs is expensive and very time consuming due to no satisfying methods or tools to help software developers to locate buggy code components [1,2, 3].

This project aims to automate software triaging process using machine learning techniques in order to help software development teams to improve their productivity. To achieve this, the candidate will (1) study new machine learning approaches for detecting the association patterns between software changes and bug reports; and (2) develop new tools for software developers to locate buggy components more rapidly.

Please feel free to contact Dr Zhiwei Lin (z.lin@qub.ac.uk) before you make your application.

REFERENCES

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