

## Software Engineering Seminar (WiSe 2019/20)

# Automated Test Repair

## Description

In regression testing, software tests usually provide passing or failing signals for developers to determine the effectiveness of their code changes. However, broken tests [1] that contain errors themselves or flaky tests [2] that exhibit an indeterministic outcome can mislead developers and hinder the debugging process. To alleviate this problem, many automated test repair techniques have been developed.

The student is to examine and to discuss the current state of art of the automated test repair techniques.

## References

- [1] Brett Daniel, Vilas Jagannath, Danny Dig, and Darko Marinov. Reassert: Suggesting repairs for broken unit tests. In *2009 IEEE/ACM International Conference on Automated Software Engineering*, pages 433–444. IEEE, 2009.
- [2] Moritz Eck, Fabio Palomba, Marco Castelluccio, and Alberto Bacchelli. Understanding flaky tests: The developer’s perspective. In *Proceedings of the 2019 27th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, ESEC/FSE 2019, pages 830–840, New York, NY, USA, 2019. ACM.
- [3] August Shi, Wing Lam, Reed Oei, Tao Xie, and Darko Marinov. ifixflakies: a framework for automatically fixing order-dependent flaky tests. In *Proceedings of the 2019 27th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, pages 545–555. ACM, 2019.

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