What is the Vocabulary of Flaky Tests?
An Extended Replication

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1. Hello, my name is Bruno. I'm from Universidade Federal do Paraná and Centro Universitário Integrado from Brazil. And gonna present a paper "What is the Vocabulary of Flaky Tests? An Extended Replication".
2. This is a work guided by my advisors, Marco Graciotto, André Endo and Silvia Vergilho.

1. Flaky tests

    Tests who pass or fail when executed in the same software version

2. Is it possible to compile the vocabulary of the flaky tests?

    What is the Vocabulary of Flaky Tests? [Pinto-etal:2020]

3. Evaluation of Intra- and Inter-Project prediction

    Can we predict flaky tests with the tained classifiers?

1. Flaky tests are a recurring issue hurting the adoption of automated tests. A test case that may pass or fail non-deterministically in the same production code.
2. So, a promising approach is to collect static data of automated tests and use them to predict their flakiness. Is possible to use test code as a feature? Pinto et Al. proposed it and our first goal is to replicate the training and prediction with the same dataset but with the different Machine Learning platforms and algorithms.
3. Then, we propose an extension to validate the trained model against another dataset to validate the effectiveness of the model on identify flaky tests Intra- and Inter-projects.

Replication

RQ$_1$ – Can we obtain similar results by using other ML algorithms or the same algorithms with distinct implementations?

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RQ$_{1.1}$ – How accurately can we predict test flakiness based on source code identifiers in the test cases?

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RQ$_{1.3}$ – Which test code identifiers are most strongly associated with test flakiness?

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Extension

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RQ$_{2.1}$ – Can a trained classifier be successfully applied within the same projects (i.e., intra-project)?

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RQ$_{2.2}$ – Can a trained classifier be successfully applied to other projects (i.e., inter-projects)?

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Conclusions

Closing Thoughts

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Thank you!

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