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Automated Test Case Generation using Machine Learning

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Abstract: *Software development is a fast-paced industry that requires testing methodologies that are just as fast and reliable. Proposed Conventional Test Case Generation techniques tend to struggle to meet the needs of the fast pacing ways software is developed in nowadays. In order to reduce the efforts used in testing process, machine learning can help automate the generation of test cases and enhance the performance at the same time. This technique, utilizing supervised and unsupervised learning models, reduces human factor, eliminates redundancy, and improves the identification of edge cases. We highlight the prominent methodologies, challenges, implementation frameworks and experimental results in the paper, together with suggested future directions to effectively integrate ML techniques into test automation pipelines.*

Keywords: Automated Test Case Generation, Machine Learning, Software Testing, Supervised Learning, Unsupervised Learning, Test Automation

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