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2. **Degree Title:** Management of Information Systems (M.Sc.)

3. **Title:** An Investigation into the impact of Machine Learning on Software Testing

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5. **Year:** 2019

6. **Abstract:**

Software Testing is an integral function of the Software Development Lifecycle (SDLC). Manual testing has long been the tried and tested approach whereby test cases are designed and executed by human resources. Automated testing reduces the effort required by software test engineers by transferring repetitive test case execution to software programs that can be run continuously to provide rapid feedback to project stakeholders. However, studies suggest that the adoption rate of automated testing is 30% or lower across the software testing industry.

Machine learning can reduce repetitive tasks and adapt to changing environments. The benefits of machine learning align closely with the goal of automated software testing.

This investigation researches how machine learning can be leveraged by software testing practitioners and assesses the capabilities of commercial testing services which incorporate machine learning. The potential impact on the software testing profession is found to have both positive and negative implications.

The forecast for the adoption rate of machine learning across the software testing industry is concluded to be low within a five-year timeframe but the potential presented by machine learning to resolve many of the issues found with standard automation tools is such that it is only a matter of time before ML-Driven automated tools become an industry standard.