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**TAOTIE: An Automated Approach for Removing Feature Flags  
in TypeScript Codebases**

A Thesis

by

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*Keywords:* Automation · Feature toggles · Software Development Process Management

## ABSTRACT

Feature flags, also known as feature toggles, are widely used for controlled code deployment. However, without proper management, they can create maintenance challenges for the developers and results in technical debit and code smells.

This paper introduces a method for efficiently removing feature flag code from a codebase using a code modifier tool. It involves leveraging a code modifier tool to automatically identify and eliminate feature flag code, while preserving the core functionality. The tool ensures safe and reliable removal of feature flags, reducing codebase complexity and technical debt.

Experimentation confirms the tool's effectiveness in successfully removing feature flag code while maintaining the intended feature functionality with only taking an average response time of 6 seconds. Overall, this method provides developers with a valuable solution for effectively managing codebases with feature flags.

*Keywords:* Automation · Feature flags · Feature toggles · Software Development Process Management · Software Maintenance

### Subject Descriptors:

- Software and its engineering → Software evolution; Software maintenance tools; Software development techniques
- Computing methodologies → Automated programming; Scalability
- Information systems → Information systems applications; Information storage management; Data management systems; Cloud computing