AI Assisted/Automated code refactoring

How the development of AI may impact the future of code refactoring

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***Abstract*—This Paper aims to shed light onto developments in AI Assisted/Automated Code refactoring, how it can help the indtustry and which models work most efficiently to tackle different challenges code refactoring brings. This will be done by going over various literature describing first the challenges at hand and afterwards discussing several possible solutions that have been tested to gain a greater understanding and to generate an informed outlook into further developments of this technology.**

***Index Terms*—machine learning algorithms, software code refactoring, deep neural network**

I. Introduction

A. Uses of refactoring

B. Why refactoring is important

II. Approaches for Automation

A. Large Language Models

1) Chat GPT:

B. Dedicated Models

1) DNNFFz:

III. Benefits of AI-Powered Refactoring

A. Improved Code Quality

B. Enhanced Maitainability

C. Reduction of Technical Dept

IV. Challenges and Limitations

A. Over-reliance on Automation

B. Potential for Unintended Consequences

C. Performance Concerns

V. Future Directions and Research Opportunites

A. Personalized Code Refactoring Suggestions

VI. Conclusion and Outlook

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