5. Investigating the Role of Artificial Intelligence in Modern Software Engineering

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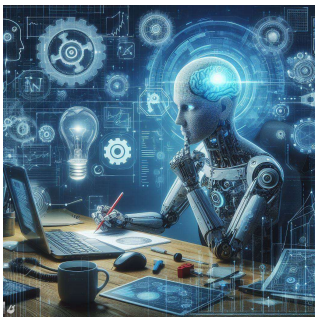

We invite enthusiastic and dedicated undergraduate students to join our cutting-edge research project focused on the dynamic intersection of artificial intelligence and software engineering. This project aims to revolutionize the landscape of software development by exploring and harnessing the potential of AI across various dimensions of the software development lifecycle.

The central objective of this research endeavor is to define and develop novel frameworks and measurement methods for software quality control. We seek to establish efficiency measurement principles in software engineering and explore the transformative impact of integrating AI in software quality improvement initiatives. This includes examining code generation techniques and developing quality metrics for the evaluation of generated code.

Our research will delve into the realm of test generation with AI, emphasizing high quality metrics for the evaluation of testing outcomes. Additionally, we aim to leverage the specialties of different frameworks and technologies to enhance code generation. For instance, we will explore the application of specific rule engines tailored for iOS or Android frameworks, optimizing code generation processes for these platforms.

The investigation extends to modern frameworks that support AI-assisted coding, such as SwiftUI, Compose, or Spring Boot on the backend side. We will explore if these frameworks can effectively integrate AI capabilities to enhance the coding experience and overall software quality.

Furthermore, the project will identify and address typical use cases in software development, such as UI generation, network communication, database integration, security, and more. Our goal is to develop improved AI coding engines specifically tailored for these use cases, ensuring that the AI-generated code meets predefined quality metrics.

This research project offers a unique opportunity for undergraduate researchers to contribute to the forefront of AI in software engineering. Successful applicants will engage in cutting edge research, pushing the boundaries of what is possible in modern software development. If you are a motivated and innovative individual with a passion for artificial intelligence and software engineering, we invite you to be part of a research initiative that has the potential to shape the future of software engineering practices and make a lasting impact on the industry.