

# 计算机学科前沿论坛

报告题目：How AI is Changing the World of Software Engineering

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主办单位：计算机科学与技术学院

**摘要:** With the rapid growth of AI, it deeply influences almost all of computer science areas, especially for software engineering. Software development process generates a large amount of corpus data (such as defect reports, source code, logs, etc.). How to use these corpus data to better implement automated software engineering tasks is a big challenge. The difficulty lies in the semantic gap between natural language and programming language. In this new era, generative AI can help automatically produce more reliable source code, patches, commits, code comments, and responses to the user reviews by deeply analyzing the semantic relations between natural language and programming language. For achieving the best performance of automated software engineering tasks, a lot of software engineering scholars walk through a long road. For our team, we started from the initial reliance on bug reports or user review information to perform a single automated software engineering task. By establishing a unified neural network model and a unified representation model for bug reports, we constructed a set of methods that can achieve multiple automated software engineering tasks. In the process, we discovered the over-interpretation problem of pre-trained language models when implementing automated software engineering tasks, and proposed mitigation strategies. Following this way, depended on the huge power of LLMs, we proposed a

series of new models and corresponding tools to enhance the performance of automated software engineering tasks.

### 个人简介:



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主要研究方向包括智能化软件工程、软件安全、智能合约漏洞检测等。发表论

文 90 余篇，论文谷歌学术引用超过 2300 次，H 指数为 28。

主持国家自然科学基金、澳门科学技术发展基金等多个项目。

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