

# AI-Generated Python Code Documentation: A Case Study

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## Abstract

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## 1 Introduction

In an era of LLM-based revolution, many are exploring the endless possibilities of using artificial intelligence to aid in software development. This comes as no surprise considering the astounding need for software in nearly every aspect of modern industry. [5] With a dramatic increase in the need for software, some of the hottest topics being explored are the potential of enhancing the software development process, creating new tools as well as enhancing the old, and even automating certain aspects of writing code (See Section 3: Related Work).

In this paper, we detail our experience with training a model using machine learning for the purpose of generating Python documentation. We discuss other similar works, compare our results, and discuss applications and potential improvements as well as viable future work. With so much recent progress in the field of AI, models like ours might drastically change the way we think about and approach software development.

## 2 Related Work

[7] [1] [3] [6] [4] [2] [8]

## 3 Method

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## 4 Results

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## 5 Discussion

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## 6 Conclusion

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## 7 Future Work

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## References

- [1] Qodo AI. Ide plugin for ai-assisted development, 2024. Accessed: 2024-12-06.
- [2] Awekrex. Autodoc-chatgpt: documentation generation using chatgpt, 2024. Accessed: 2024-12-06.
- [3] Google Security Blog. Ai-powered fuzzing: breaking bug hunting barriers, August 2023. Accessed: 2024-12-06.
- [4] Tianle Chen, Mingjie Li, and Shengyu Zha. Towards understanding out-of-distribution generalization of pre-trained language models. *arXiv*, May 2023.
- [5] Emerald Group Publishing Limited. Corporate social responsibility and firm value: the moderating role of governance mechanisms. *Advances in Corporate Governance Research*, 16, 2019. Accessed: 2024-12-06.
- [6] CSO Online. What is ai fuzzing and why it may be the next big cybersecurity threat, 2024. Accessed: 2024-12-06.
- [7] Google Research. Resolving code review comments with ml, 2023. Accessed: 2024-12-06.
- [8] Kyle M. Wiggers, James Smith, and Xinyi Zhao. Enhanced large language models for multi-modal research synthesis. *arXiv*, July 2023.