

Trust and Security in AI-Generated Documentation

Ana-Maria DINCĂ, Sabina-Daniela AXINTE, Ioan C. BACIVAROV
Faculty of Electronics, Telecommunications and Information Technology,
National University of Science and Technology POLITEHNICA Bucharest,
Romania

ana_maria.dinca@stud.etti.upb.ro, axinte_sabina@yahoo.com,
ioan.bacivarov@upb.ro

Abstract

This paper examines the potential of the Artificial Intelligence (AI) tools in the context of software development tasks and the generation of associated documentation. The first part of the paper surveys software professionals' perceptions of how AI impacts task completion times. The second part of the paper examines the utilization of the AI tool ClaudeMind to generate technical and non-technical documentation for a PDF management microservice. Two prompts are submitted to ClaudeMind, and the resulting documentations are evaluated for overall quality and suitability. This research is motivated by studies indicating that Large Language Model (LLM) performance can deteriorate with increasing complexity, highlighting the need to understand AI's strengths and limitations in specific domains. This paper aims to provide insights into the current state of AI in software engineering and whether it can be used to automate tedious tasks such as writing and maintaining the documentation.

Index terms: Artificial Intelligence, ClaudeMind, reliable documentation, secure software development lifecycle, technical documentation generation

References

- [1]. I. Mirzadeh, K. Alizadeh, H. Shahrokhi, O. Tuze, S. Bengio and M. Farajtabar, "GSM-Symbolic: Understanding the Limitations of Mathematical Reasoning in Large Language Models", 2024. [Online]. Available: <https://arxiv.org/pdf/2410.05229>.
- [2]. S. M. Williamson and V. Prybutok, "The Era of Artificial Intelligence Deception: Unraveling the Complexities of False Realities and Emerging Threats of Misinformation", *Information*, 2024, vol. 15, no. 6, p. 299.
- [3]. A. Singla, A. Sukharevsky, L. Yee, M. Chui and B. Hall. (2024) The state of AI in early 2024: Gen AI adoption spikes and starts to generate value [Online]. Available: <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai/#>.

- [4]. K. Daigle. (2024) Survey: The AI wave continues to grow on software development teams [Online]. Available: <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai#/>.
- [5]. OpenAI. (2022) Introducing ChatGPT [Online]. Available: <https://openai.com/index/chatgpt/>.
- [6]. C. Ayrhac. (2023) The Fall of Stack Overflow [Online]. Available: <https://observablehq.com/@ayhanfuat/the-fall-of-stack-overflow> [Accessed 10.2024].
- [7]. A.-M. Dinca, S.-D. Axinte, G. Tod-Raileanu and I. Bacivarov, “AI Tools introduced in Software Development” in 2024 IEEE 30th International Symposium for Design and Technology in Electronic Packaging (SIITME), Sibiu, 2024.
- [8]. N. Maleki, B. Padmanabhan and K. Dutta, “AI Hallucinations: A Misnomer Worth Clarifying” in 2024 IEEE Conference on Artificial Intelligence (CAI), Singapore, 2024.