

YUQIANG SUN

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🔗 <https://scholar.google.com/citations?user=KAWDTzsAAAAJ&hl=en>

Education

- 2021 – now 📖 **Ph.D., Nanyang Technological University** in Computer Science.
Supervisor: Prof. Yang Liu
- 2017 – 2021 📖 **B.Eng., Sichuan University** in Cyber Security.
GPA: 3.8/4

Research Interests

My research interests focus on automatic code auditing and vulnerability detection through the integration of deep learning method and static program analysis. Besides, I'm also interested in software supply chain security and program repair.

Publications

- 1 C. Liu, C. Wang, J. Cao, J. Ge, et al., “A vision for auto research with LLM agents,” *arXiv preprint arXiv:2504.18765*, 2025.
- 2 Y. Liu, Y. Xue, D. Wu, **Y. Sun**, et al., “Propertygpt: Llm-driven formal verification of smart contracts through retrieval-augmented property generation,” in *Network and Distributed System Security (NDSS) Symposium 2025*, 2025.
- 3 W. Ma, D. Wu, **Y. Sun**, T. Wang, et al., “Combining fine-tuning and llm-based agents for intuitive smart contract auditing with justifications,” in *Proceedings of the IEEE/ACM 47th International Conference on Software Engineering*, 2025.
- 4 H. Liu, D. Wu, **Y. Sun**, H. Wang, et al., “Using my functions should follow my checks: Understanding and detecting insecure openzeppelin code in smart contracts,” in *Usenix Security Symposium 2024*, 2024.
- 5 **Y. Sun**, D. Wu, Y. Xue, H. Liu, et al., “Gptscan: Detecting logic vulnerabilities in smart contracts by combining gpt with program analysis,” in *Proceedings of the IEEE/ACM 46th International Conference on Software Engineering*, 2024, pp. 1–13.
- 6 **Y. Sun**, D. Wu, Y. Xue, H. Liu, et al., “Llm4vuln: A unified evaluation framework for decoupling and enhancing llms’ vulnerability reasoning,” *arXiv preprint arXiv:2401.16185*, 2024.
- 7 **Y. Sun**, Z. Xu, C. Liu, Y. Zhang, et al., “Who is the real hero? measuring developer contribution via multi-dimensional data integration,” in *The 38th IEEE/ACM International Conference on Automated Software Engineering (ASE 2023)*, 2023.
- 8 **Y. Sun**, D. Li, Y. Wu, X. Wan, et al., “Wain: Automatic web application identification and naming method,” in *Proceedings of the 13th Asia-Pacific Symposium on Internetware*, 2022, pp. 37–44.
- 9 P. Wang, **Y. Sun**, C. Huang, Y. Du, et al., “Minedetector: Javascript browser-side cryptomining detection using static methods,” in *2021 IEEE 24th International Conference on Computational Science and Engineering (CSE)*, IEEE, 2021, pp. 87–93.
- 10 Y. Wu, **Y. Sun**, C. Huang, P. Jia, et al., “Session-based webshell detection using machine learning in web logs,” *Security and Communication Networks*, vol. 2019, no. 1, p. 3 093 809, 2019.

Projects

Open-source Software Quality Measuring Platform.

Aug. 2021 – Nov. 2022

- Build a platform with quality assurance tools from different aspects of open-source software.
- Implement a pipeline to automatically collect and analyze projects from GitHub.
- Develop a web application to visualize the results and provide insights to users.
- The project has been integrated to the products of our industry partner Scantist.

Vulnerability Detection by Combining LLMs and Program Analysis.

Mar. 2023 – Dec. 2023

- Propose a novel approach to detect vulnerabilities in source code by combining language models and program analysis.
- Develop a tool to automatically detect 10 types of logic vulnerabilities in Solidity projects.
- Evaluate the performance of the tool on real-world projects.
- The project has been integrated to the products of our industry partner MetaTrust Labs.

Services

Journal Reviews	📌 Transactions on Dependable and Secure Computing (TDSC)
Conference Reviews	📌 MSR 2024
Artifact Evaluation	📌 Usenix Security 2024, ISSTA 2024
Sub-Reviews	📌 ICSE, ASE, FSE, ISSTA, CCS, NDSS, ACSAC, DSN, ICICS, AsiaCCS

Honors & Awards

2024	📌 Member , DataCon 2024 Technical Committee
2021	📌 Research Scholarship , Nanyang Technological University
2020	📌 3rd Prize , 2020 CCF Chinasoft - A Software Defect Detection Contest
2019	📌 2nd Prize , 12th National College Student Information Security Contest CTF Competition Final
	📌 3rd Prize , West Lake Cybersecurity Conference CTF Competition Final

Talks

2024	📌 GeekCon 2024 , Transforming Language Models into Smart Contract Audit Experts.
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