

HAN LIU

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September 2024
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RESEARCH INTERESTS My research interests focus on improving software quality and security via deep learning and static analysis, especially smart contract security.

EDUCATION& WORK EXPERIENCE **Post-Doc Scholar** 2024/08- Now
The Hong Kong University of Science and Technology
Working With: [Prof. Shuai Wang](#) & [Prof. Daoyuan Wu](#)

Ph.D. Degree 2019/09-2024/06
East China Normal University, Software Engineering
Thesis: Multi-View Analysis and Optimization Methods for Software Quality Assurance Tools
Supervisor: [Prof. Yixiang Chen](#)

Visiting PhD Students 2022/02-2024/02
Nanyang Technological University, Singapore
Supervisor: [Prof. Yang Liu](#)

Bachelor Degree 2015/09-2019/06
Jiangsu University of Science and Technology, Computer Science and Technology (GPA 4.01/5.0)

PUBLICATIONS
Usenix-Security (CCF-A) **Han Liu**, Daoyuan Wu, Yuqiang Sun, Haijun Wang, Kaixuan Li, Yang Liu, and Yixiang Chen. "[Using My Functions Should Follow My Checks: Understanding and Detecting Insecure OpenZeppelin Code in Smart Contracts](#)". The 33rd USENIX Security Symposium, USENIX Security 2024.

ISSTA'23 (CCF-A) **Han Liu**, Sen Chen, Ruitao Feng, Chengwei Liu, Kaixuan Li, Zhengzi Xu, Liming Nie, Yang Liu, and Yixiang Chen. "[A Comprehensive Study on Quality Assurance Tools for Java](#)". The 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis, ISSTA 2023

RuanJianXueBao (CCF-A in Chinese) **Han Liu**, Kaixuan Liu, and Yixiang Chen. "[Survey on Trustworthiness Measurement for Artificial Intelligence Systems](#)"(In Chinese) Journal of Software(Ruan Jian Xue Bao). 2023,34(8):3774-3792

FSE'24 (CCF-A) Kaixuan Li, Yue Xue, Sen Chen, **Han Liu**, Kairan Sun, Ming Hu, Haijun Wang, Yang Liu, and Yixiang Chen. "[Static Application Security Testing](#)

[\(SAST\) Tools for Smart Contracts: How Far Are We?](#)". The ACM International Conference on the Foundations of Software Engineering, *FSE 2024. ACM SIGSOFT Distinguished Paper Award.*

- ICSE'24
(CCF-A) Yuqiang Sun, Daoyuan Wu, Yue Xue, **Han Liu**, Haijun Wang, Zhengzi Xu, Xiaofei Xie, and Yang Liu "[GPTScan: Detecting Logic Vulnerabilities in Smart Contracts by Combining GPT with Program Analysis](#)". The 46th International Conference on Software Engineering, ICSE 2024
- ISSTA'24
(CCF-A) Kaixuan Li, Jian Zhang, Sen Chen, **Han Liu**, Yang Liu, and Yixiang Chen. "[PatchFinder: A Two-Phase Approach to Security Patch Tracing for Disclosed Vulnerabilities in Open-Source Software.](#)" The 33rd ACM SIGSOFT International Symposium on Software Testing and Analysis ISSTA 2024.
- FSE'23
(CCF-A) Kaixuan Li, Sen Chen, Lingling Fan, Ruitao Feng, **Han Liu**, Chengwei Liu, Yang Liu, and Yixiang Chen "[Comparison and Evaluation on Static Application Security Testing \(SAST\) Tools for Java](#)". The 31th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, FSE 2023.

PROJECTS

- 2020/11-2021/11 Layered and Trustworthy Resilient System Architecture
- Based on the related work, propose a definition on resilience and a resilient system model.
 - According to the importance of component, establish a component trustworthiness measurement model and a system trustworthiness measurement model for resilient architecture.
 - propose an analytical design methodology for hierarchical trustworthy system models.
- 2020/10-2021/10 Measurement of Software Trustworthiness Base on Reference Software Architecture
- Based on UAES existing data, establish trustworthy evidence of reference software architecture.
 - According to the reference software architecture, establish a software trustworthiness measurement model based on the reference software architecture
 - Develop a measurement model tool based on the reference software architecture, combine it with UAES's existing database and give suggestions for architecture modification.
- 2019/09-2022/09 Measurement of Software Trustworthiness
- Investigate on trustworthiness measurement methods in the industry, and write a report on trustworthy measurement methods.
 - Based on existing trustworthy evidence related literature, establish a measurement model based on trustworthy evidence, write a report on trustworthy evidence.

- According to the industry's advanced software engineering practical experience, the trusted elements of the software industry standard, combined with the appropriate measurement calculation model, construct a source code-oriented software trustworthiness measurement model.

2019/09-2020/11 National Key R&D Project on Smart Cities

- Design a trustworthiness measurement and assessment method for Cyber-Physical Systems (CPS) under uncertain environments based on the concept of trust related to uncertainty.
- Develop a tool for measuring and assessing the trustworthiness of CPS in uncertain environment.

HONORS AND AWARDS

- ACM SIGSOFT Distinguished Paper Award FSE 2024
- Shanghai Outstanding Graduate Student, Shanghai Municipal Education Commission 2024
- Publicly Funded Postgraduate Scholarships, China Scholarship Council 2022
- "HUAWEI CUP" 17th China Post-Graduate Mathematical Contest in Modeling 3rd Prize. 2020

SERVICES

PC:

MSR 2024 - Junior PC Member

Sub-Reviewer:

Usenix Security 2025, ICSE-2025, NDSS-2025, ASE-2024, CCS-2024, ISSTA-2024, AISACCS-2024, WWW-2024, ASE-2023, FSE-2023, AILA 2023, FSE-2022, AILA 2022
Frontiers of Computer Science