

Zhijie Liu

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PERSONAL PROFILE

Energetic, creative, and responsible Ph.D. student, currently studying at **The Ohio State University** (Sep. 2022 - Present). Previously, received a Master's Degree from **ShanghaiTech University** (Sep. 2022 - Jul. 2025) and interned at Tencent Keen Lab (Aug. 2023 - Jul. 2025). Passionate about Software Security and Software Engineering, having four years of expertise, and specializing in Binary Analysis, Program Analysis, LLM Security, and so forth.

EDUCATION

The Ohio State University

Columbus, OH, USA

Doctor of Philosophy in Computer Engineering, GRA Scholarship

September 2025 - Present

- **Advisor:** Distinguished Prof. Zhiqiang Lin
- **Courses 2025-2026:** Computer Architecture, Advanced Operating Systems

ShanghaiTech University

Pudong, Shanghai, China

Master of Science in Computer Science (in English and Chinese), GPA: 3.92/4.0, Specialized Course GPA:

September 2022 - July 2025

4.0/4.0

- **Advisor:** Prof. Yutian Tang, Prof. Liangfeng Zhang, and Prof. Yuqi Chen
- **Courses 2022-2023:** Program Analysis (A+), Algorithm Design (A), Machine Learning (A), Cybersecurity (A+)
- **Courses 2023-2024:** Cryptography (A+), Computer-aided Verification (A)

Chang'an University

Xi'an, Shaanxi, China

Bachelor of Science in Computer Science, GPA: 4.20/5.0 (ranking 1st/350)

August 2018 - July 2022

- **Courses:** Compiler, Networking, Operating System, Database, Computer Architecture, etc.
- **Projects:** Remote Control System, MinHook for Windows, etc.

PUBLICATIONS

CONFERENCE PROCEEDINGS

Sweeping the Blockchain: Unmasking Illicit Accounts in Web3 Scams

Wenkai Li, Zhijie Liu, Xiaoqi Li*

Black Hat Asia, 2025

KEENHash: Hashing Programs into Function-aware Embeddings for Large-scale Binary Code Similarity Analysis

Zhijie Liu, Qiyi Tang, Sen Nie, Shi Wu, Liang Feng Zhang, Yutian Tang*

The ACM SIGSOFT International Symposium on Software Testing and Analysis, 2025

Detecting Malicious Accounts in Web3 through Transaction Graph

Wenkai Li, Zhijie Liu, Xiaoqi Li*, Sen Nie

Proceedings of the 39th IEEE/ACM International Conference on Automated Software Engineering (ASE) Poster Track, 2024

Enhancing Malware Detection for Android Apps: Detecting Fine-granularity Malicious Components

Zhijie Liu, Liang Feng Zhang, Yutian Tang*

2023 38th IEEE/ACM International Conference on Automated Software Engineering (ASE), 2023

JOURNAL ARTICLES

LLM-CompDroid: Repairing Configuration Compatibility Bugs in Android Apps with Pre-trained Large Language Models

Zhijie Liu, Yutian Tang*, Meiyun Li, Xin Jin, Yunfei Long, Liang Feng Zhang, Xiapu Luo

ACM Transactions on Software Engineering and Methodology (2025). 2025

No Need to Lift a Finger Anymore? Assessing the Quality of Code Generation by ChatGPT

Zhijie Liu, Yutian Tang*, Xiapu Luo, Zhou Yuming, Liang Feng Zhang

IEEE Transactions on Software Engineering (2024). 2024

ChatGPT vs SBST: A Comparative Assessment of Unit Test Suite Generation

Yutian Tang*, Zhijie Liu, Zhichao Zhou, Xiapu Luo

IEEE Transactions on Software Engineering (2024). 2024

UNDER REVIEW

Geometry Point Embedding for 3D Object Detection with Fully Transformer

Xin Jin, Kai Liu, Cong Ma, Ruining Yang, Zhijie Liu, Fei Hui*, Wei Wu*

Detecting Mimic Accounts in Illegally Service Providers via Dynamic Graph Evolution

Wenkai Li, Zhijie Liu, Xiaoqi Li*, Sen Nie, Yuqing Zhang

WORK EXPERIENCE

Tencent Keen Lab, Researcher Intern	<i>Xuhui, Shanghai</i>
Project: Binary Code Similarity Analysis and Threat Intelligence	<i>August 2023 - July 2025</i>
<ul style="list-style-type: none">Worked on BinaryAI, the binary file security analysis platform developed by Tencent Keen Lab, which is based on AI security for applications such as Binary Code Similarity Analysis (BCSA), Malware Analysis, and Software Composition Analysis (SCA);Contributed to BinaryAI's downstream tasks, including BCSA, Malware Analysis, Vulnerability Detection, and Threat Intelligence;Designed and deployed new algorithm for BCSA, which focuses on large-scale scenarios (e.g., at billion level) at program level;Designed and deployed new algorithm for CVE Vulnerability Detection on binary programs.Designed and deployed new algorithm for Code Summarization on binary programs.	
ShanghaiTech University, CATLab, Member	<i>Pudong, Shanghai</i>
Project: Malicious Component Detection for Android Apps	<i>January 2022 - August 2023</i>
<ul style="list-style-type: none">Summarized the shortcomings of existing Android malware detection systems;Designed a new approach based on deep learning and genetic algorithm for detecting Android malicious components adaptively;Improved the performance and robustness of Android malware detection by up to 10% and 20%, respectively;Supported fine-granularity Android malicious component detection.	

TEACHING EXPERIENCE

ShanghaiTech University, Teaching Assistant	<i>Pudong, Shanghai</i>
Course: SI200 Academic Paper Writing (in English and Chinese)	<i>2023 - 2024 (Fall)</i>

SKILLS

Programming	C/C++, Java, Python, x86 Assembly, SQL, Dafny, Promela, Shell, etc.
MLOps	Pytorch, Ray, WandB, Milvus, Faiss, LLM, cuML, etc.
DevOps	Docker, Git, Redis, SpringBoot, gRPC, etc.
SE & Security	IDA Pro, Ghidra, angr, Soot, FlowDroid, Tai-e, Z3, MinHook, Neo4j, CodeQL, SonarQube, Spin, etc.
Miscellaneous	Windows, Linux, Android, \LaTeX , Microsoft Office, etc.

SERVICES

2025	Program Committee , International Conference on Software Engineering & Knowledge Engineering (SEKE)	<i>ITALY</i>
2025	Junior Program Committee , The International Conference on Mining Software Repositories (MSR)	<i>CANADA</i>
2024	Program Committee , International Conference on Software Engineering & Knowledge Engineering (SEKE)	<i>ITALY</i>
2023	Subreviewer , Asia-Pacific Software Engineering Conference (APSEC)	<i>KOREA</i>
2023	Program Committee , International Conference on Software Engineering & Knowledge Engineering (SEKE)	<i>USA</i>

AWARDS

2025	Outstanding Thesis Award , Graduate Research Scholars, ShanghaiTech University	<i>China</i>
2024	National Scholarship , Graduate Scholarships, ShanghaiTech University	<i>China</i>
2023	Outstanding Student , Graduate Scholarships, ShanghaiTech University	<i>China</i>
2022	Outstanding Thesis Award , Undergraduate Research Scholars, Chang'an University	<i>China</i>
2022	Outstanding Graduate Award , Undergraduate Scholarships, Chang'an University	<i>China</i>
2022	The Second Class Prize Winner , ASC22 Student Supercomputer Challenge	<i>China</i>
2021	National Scholarship , Undergraduate Scholarships, Chang'an University	<i>China</i>
2021	Meritorious Winner , 2021 Interdisciplinary Contest in Modeling	<i>USA</i>
2020	National Scholarship , Undergraduate Scholarships, Chang'an University	<i>China</i>
2019	Second Prize of Zhaoshang-Road Scholarship , Undergraduate Scholarships, Chang'an University	<i>China</i>

NEWS INTERVIEW/MEDIA COVERAGE

2024	News Interview , IEEE Spectrum "How Good Is ChatGPT at Coding, Really? Study finds that while AI can be great, it also struggles due to training limitations"	<i>IEEE Spectrum</i>
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