

# Zhijie Liu

The Ohio State University, Columbus, OH, USA

[liu.13062@osu.edu](mailto:liu.13062@osu.edu) | [rroscha.github.io](https://rroscha.github.io) | [github.com/Rroscha](https://github.com/Rroscha) | [@Rrocsha1793](https://twitter.com/Rrocsha1793) | [Zhijie Liu](https://www.linkedin.com/in/zhijie-liu/)

## PERSONAL PROFILE

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Energetic, creative, and responsible Ph.D. student, currently studying at **The Ohio State University** (Sep. 2025 - 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

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### The Ohio State University

Doctor of Philosophy in Computer Engineering, GRA Scholarship

Columbus, OH, USA

September 2025 - Present

- **Advisor:** Distinguished Prof. Zhiqiang Lin

- **Courses 2025-2026:** Computer Architecture, Advanced Operating Systems, Foundations of Programming Language, Software Security

### ShanghaiTech University

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

Pudong, Shanghai, China

4.0/4.0

September 2022 - July 2025

- **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

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

Xi'an, Shaanxi, China

- **Courses:** Compiler, Networking, Operating System, Database, Computer Architecture, etc.

- **Projects:** Remote Control System, MinHook for Windows, etc.

August 2018 - July 2022

## PUBLICATIONS

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### 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

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## Tencent Keen Lab, Researcher Intern

Xuhui, Shanghai

**Project:** Binary Code Similarity Analysis and Threat Intelligence

August 2023 - July 2025

- 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

Pudong, Shanghai

**Project:** Malicious Component Detection for Android Apps

January 2022 - August 2023

- 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

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## ShanghaiTech University, Teaching Assistant

Pudong, Shanghai

**Course:** SI200 Academic Paper Writing (in English and Chinese)

2023 - 2024 (Fall)

# SKILLS

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**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, L<sup>A</sup>T<sub>E</sub>X, Microsoft Office, etc.

# CONFERENCE TECHNICAL PROGRAM COMMITTEE

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

# JOURNAL REFEREE

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**Invited Reviewer** IEEE Transactions on Software Engineering (TSE)

# AWARDS

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

# NEWS INTERVIEW/MEDIA COVERAGE

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

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2023

**Copyright (Yutian Tang; Zhijie Liu)**, Big Data-based Mobile Application Malicious Component Detection System V1.0 (No. 2023SR0897296)

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