

Zhijie Liu

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PERSONAL PROFILE

Energetic, creative, and responsible student, currently studying at **ShanghaiTech University** in a graduate program (Sep. 2022 - Jul. 2025) and interning at Tencent Keen Security Lab (Aug. 2023 - current), under the supervision of **Prof. Yutian Tang**, **Prof. Liangfeng Zhang**, **Researcher Sen Nie**, and **Researcher Qiyi Tang**. Passionate about software engineering and security, having three years of expertise, and specializing in Program and Binary Analysis, Fuzzing/Testing, Malware Detection, Binary Code Similarity Analysis (BCSA), Large Language Model (LLM), and so forth.

EDUCATION

ShanghaiTech University

Pudong, Shanghai

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

September 2022 - July 2025

- **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

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

August 2018 - July 2022

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

PUBLICATIONS

CONFERENCE PROCEEDINGS

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

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

Zhijie Liu, Yutian Tang*, Xiapu Luo, Zhou Yuming, Liangfeng 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

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*

46th IEEE Symposium on Security and Privacy, 2025

Geometry Point Embedding for 3D Object Detection with Fully Transformer

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

IEEE Transactions on Pattern Analysis and Machine Intelligence (2024). 2024

Detecting Mimic Accounts in Illegally Service Providers via Dynamic Graph Evolution

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

2024 39th IEEE/ACM International Conference on Automated Software Engineering (ASE), 2024

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 (Major Revision) (2024). 2024

WORK EXPERIENCE

Tencent Keen Security Lab, Security Engineer Intern

Xuhui, Shanghai

Project: Hashing Programs for Binary Code Similarity Analysis

August 2023 - Current

- Worked on **BinaryAI**, the binary file security analysis platform developed by Keen Security 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, and Threat Intelligence;
- Designed and deployed new algorithms for **BCSA**, which focuses on large-scale scenarios on the program level.

- 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

Pudong, Shanghai

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

2023 - 2024 (Fall)

SKILLS

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

SERVICES

2024	Program Committee, International Conference on Software Engineering & Knowledge Engineering (SEKE)	ITALY
2023	Subreviewer, Asia-Pacific Software Engineering Conference (APSEC)	KOREA
2023	Program Committee, International Conference on Software Engineering & Knowledge Engineering (SEKE)	USA

AWARDS

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

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"	IEEE Spectrum
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2023	Copyright (Yutian Tang; Zhijie Liu), Big Data-based Mobile Application Malicious Component Detection System V1.0 (No. 2023SR0897296)	National Copyright Administration of P.R.China
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