

ZHUOHAO ZHANG

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🎓 EDUCATION

University of Electronic Science and Technology of China, Chengdu, China 2020 - 2024

B.S. in Information and Software Engineering

Academic Performance Grade: 3.58/4.00 Language: English(TOFEL 101)

Johns Hopkins University, Baltimore, U.S. 2025 - Present

M.S. in Security Informatics

📄 PUBLICATION

Accurate and Efficient Code Matching Across Android Application Versions against Obfuscation

Runhan Feng, **Zhuohao Zhang**, Yetong Zhou, Ziyang Yan and Yuanyuan Zhang

In Proceedings of the 31st International Conference on Software Analysis, Evolution and Reengineering (SANER 2024)

An Empirical Study on the Robustness of Android Third-Party Library Detection Tools Against Advanced Obfuscation

Dahan Pan, **Zhuohao Zhang**, Yunjia Min, Runhan Feng, Yuanyuan Zhang

In Proceedings of the 48th International Conference on Software Engineering (ICSE 2026)

🔬 RESEARCH

Auto PoC Generator for Taint Analysis with LLM Oct. 2025 - Present

- Developed an automated Proof of Concept (PoC) generation pipeline by leveraging Large Language Models to analyze vulnerability paths identified through taint analysis of Python libraries.
- Engineered an LLM-driven process to identify core/shared classes from taint reports and automatically generate targeted PoC scripts based on vulnerability patterns.
- Implemented an end-to-end automated testing framework that utilizes LLMs to generate dependency requirements, dynamically builds isolated Docker containers, and executes PoC scripts for validation.

Graduation Thesis: Accurate Predication of Third-Party Library Versions Dec. 2023 - May. 2024

- Developed a high-precision, efficient tool **LibX** for identifying TPL versions in Android apps.
- Introduced a novel method of **version reduction** for TPLs to enhance matching accuracy and efficiency. Implemented a signature-based coarse-grained matching followed by **opcode similarity** assessment.
- Experiments based on lib F-Droid indicate LibX outperforms LibScan¹ in speed and accuracy for version detection.

Research on Detection of Third Party Libraries Mar. 2023 - 2025

Research Intern Internship in GoSec Laboratory of Shanghai Jiao Tong University, China

- Investigating challenges of identifying obfuscated Third-Party Library (TPL) packages in the Android apps and developing effective methods for detection.
- Apply static analysis techniques to streamline reverse engineering and enhance code similarity analysis. Trying to use **LLM** for binary code analysis.

BankEye: Research on Security Issues in Code-protected Android Banking Apps Oct. 2023 - Mar. 2024

- Analyzed the banking app from three aspects: runtime integrity, authentication and local storage.
- Designed a tool that uses **Frida** to hook into the system's fingerprint interface for testing authentication.

Study of HTTPS Protocol and SSL Pinning on Android Sep. 2022 - Nov. 2022

- Investigated secure communication protocols in Android applications by examining the establishment of HTTPS channels and trying package capture with **Burp** and **Fiddler**.
- Designed and implemented custom scripts with **Frida** to bypass SSL certificate and host verification.

👥 PROJECT

Ministry of Education Humanities and Social Sciences Research Project June. 2023

The Welfare Effect of Economic Fluctuations on Multiple Heterogeneous Individuals: Micro Mechanism, Numerical Simulation, and Policy Research

First Participant Shanghai International Studies University, China

¹Yafei Wu et al. "LibScan: Towards More Precise Third-Party Library Identification for Android Applications". In: *32nd USENIX Security Symposium (USENIX Security 23)*. Anaheim, CA: USENIX Association, Aug. 2023, pp. 3385–3402.

- Built a numerical computation method for policy and value function based on Imrohoroglu’s research with a second-order iterative method. Utilizing Monte Carlo simulations for efficient long-term economic modeling. This reduces the amount of optimization calculations as policy function converges faster than value function.

 HONORS AND AWARDS

 <i>Winner</i> , DEF CON 29 Final	2021
<i>2nd Place</i> , DEF CON 30 Final	2022
<i>7th Place</i> , WMCTF	2022
<i>4th Place</i> , TCTF (RisingStar CTF)	2021
<i>Second Prize</i> , Fifteenth contest of National college student information security	2021
Outstanding Student Scholarship	2022, 2023 and 2024