

Zirui Chen

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Education

Zhejiang University , BS in Software Engineering	Sept 2019 – Jun 2023
<ul style="list-style-type: none">• GPA: 3.84/4.0• IELTS: 7.0	
Zhejiang University , PHD in Software Engineering	Sept 2023 – Present
<ul style="list-style-type: none">• The State Key Laboratory of Blockchain and Data Security• Supervised by Prof. Xiaohu Yang, and Prof. Xin Xia, Prof. Xing Hu• National Scholarship, 2024	

Publications

Exploiting Library Vulnerability via Migration Based Automating Test Generation (ICSE 2024)	April 2024
<i>Zirui Chen</i> , Xing Hu, Xin Xia, Yi Gao, Tongtong Xu, David Lo, Xiaohu Yang	
Every Maintenance Has Its Exemplar: The Future of Software Maintenance through Migration (SE 2030@FSE 2025)	May 2025
Diffploit: Facilitating Cross-Version Exploit Migration for Java Library Vulnerability (ICSE 2026)	July 2025
<i>Zirui Chen</i> , Xing Hu, Xin Xia, Xiaohu Yang	
Generating Mitigations for Downstream Projects to Neutralize Upstream Library Vulnerability (Under Revision)	Jan 2025
<i>Zirui Chen</i> , Xing Hu, Xin Xia, Xiaohu Yang	

Projects

Black Box NPU Fuzzer	Aug 2024 – Dec 2024
<ul style="list-style-type: none">• Developed testing for NPU based on the PyTorch, using differential testing across GPU, NPU, and CPU.• Simulated developer workflow of learning NPU usage, developing with the NPU, and reporting errors to the NPU, guiding legal seed generation via unique contexts in each phase, covering 1,381 out of 1,593 APIs.• Provided 100+ defect reproduction tests to NPU maintainers; over 20 confirmed and accepted, mainly focused on core dump issues.	
Exploit Cross-version Migrator	Jan 2025 – July 2025
<ul style="list-style-type: none">• Proposed a diff-based exploit migration technique achieving 84.2% accuracy on 689 target versions.• Discovered 5 missing CVE reports, 3 of which were confirmed by CNAs.• Identified 111 missing vulnerable versions in the GitHub Advisory Database, with 57 accepted.	

Experience

Software Engineering Intern , ByteDance – Hangzhou, China	Mar 2022 – July 2022
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