

Tianyang Zhou

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EDUCATION

- **Ph.D. in Computer Science** Aug 2023 – Present
University of Illinois Urbana-Champaign, Illinois, USA
 - ◊ Research Area: Program Translation, Software Security
 - ◊ Advisors: Varun Chandrasekaran, Kirill Levchenko
- **M.S. in Computer Engineering** Sep 2021 – Jun 2023
University of California, San Diego, California, USA
 - ◊ Advisor: Deian Stefan
- **B.E. in Software Engineering** Sep 2017 – Jun 2021
Xi'an Jiaotong University, Shaanxi, China

SELECTED PUBLICATIONS

- **Understanding the Security Drift in C to Rust Translation** (*In Progress*)
Tianyang Zhou*, Ashutosh Sharma*, Varun Wallajabad, Kirill Levchenko, Varun Chandrasekaran.
**Equal Contribution*
 - ◊ Designed the research framework and vulnerability drift taxonomy (eliminated, preserved, introduced) across translator types.
 - ◊ Led end-to-end work on detecting newly introduced vulnerabilities, building the full translation and analysis pipeline.
- **Verifier-Guided Code Translation via Meta-Step Decoding**
Tianyang Zhou, Somesh Jha, Mihai Christodorescu, Kirill Levchenko, Varun Chandrasekaran.
Under review at NeurIPS 2026. arxiv:2605.17626
 - ◊ Built a decoding-time verification framework that catches translation errors on-the-fly via compilation, lint, and test oracles.
 - ◊ Demonstrated cross-language generalizability with end-to-end evaluation on C-to-Rust and JS-to-TS pipelines.
- **SoK: Understanding (New) Security Issues Across AI4Code Use Cases**
Qilong Wu*, Taoran Li*, Tianyang Zhou*, Varun Chandrasekaran.
arxiv:2512.18456 **Equal Contribution*
 - ◊ Led the code translation section, focusing on security impact of LLM-based translation and robustness during translation.
 - ◊ Co-authored taxonomy and analysis shaping 13 research questions and 11 future directions.
- **SACTOR: LLM-Driven Correct and Idiomatic C to Rust Translation with Static Analysis and FFI-Based Verification**
Tianyang Zhou, Ziyi Zhang, Haowen Lin, Somesh Jha, Mihai Christodorescu, Kirill Levchenko, Varun Chandrasekaran.
Association for Computational Linguistics (ACL) 2026. NeurIPS Workshop DL4C 2025. arXiv:2503.12511
 - ◊ Designed and implemented a two-phase LLM with static analysis pipeline for C-to-Rust translation.
 - ◊ Built FFI-based verification harness enabling scalable end-to-end equivalence testing across translation stages.
- **Fine-grained Library Sandboxing for Rust Ecosystem**
Tianyang Zhou.
Master's Thesis, University of California, San Diego. 2023. ProQuest
 - ◊ Built a Rust framework to sandbox libraries so Rust can safely call C APIs via FFI.
 - ◊ Designed developer-friendly interfaces minimizing code modifications to adopt the framework.

TECHNICAL SKILLS

- **Programming:** C, C++, Rust, Python
- **Security/PL Skills:** LLVM/Clang, Program Analysis, Fuzzing, Sanitizers
- **ML for Code:** Transformers, LLM Fine-tuning, Verifier-in-the-loop, Agentic Workflows

PROFESSIONAL EXPERIENCE

- **SWE Intern @ Google SRG (SystemsResearch@Google)** May 2026 - Aug 2026
 - ◊ Developed spec-driven LLM agent workflows for system software construction, targeting hypervisor components.
- **Invited Talk @ Google Research** May 2025
 - ◊ SACTOR: LLM-Driven Multi-Step Translation from C to Rust using Static Analysis.