XINYU LIAN

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EDUCATION

University of Illinois Urbana–Champaign — Champaign, IL
Master of Science in Computer Science (Research-Oriented) | GPA:4.0/4.0 — Aug. 2022 – May 2024
Advisor: Prof. Darko Marinov and Prof. Tianyin Xu

Zhejiang University — Hangzhou, China
Bachelor of Computer Engineering | GPA:3.97/4.0 — Sep. 2018 – Jun. 2022

- Selected Honors: Outstanding Graduate of Zhejiang Province (Top 4%, 2022)

PUBLICATIONS (ACCEPTED)

- Wang S., **Lian X.**, Marinov D., Xu T. Test Selection for Unified Regression Testing. In *Proceedings of the 45th IEEE/ACM International Conference on Software Engineering* (**ICSE 2023**), pages 1691-1703, May 2023.
- Jiang F., Xiong N., **Lian X.**, González S., Schewe KD. Towards Refinement of Unbounded Parallelism in ASMs Using Concurrency and Reflection. In *Proceedings of the 8th International ABZ Conference on ASM* (**ABZ 2021**), pages 118–123, June 2021.

PUBLICATIONS (SUBMITTED)

- **Lian X.**, Chen Y., Cheng S., Huang J., Thakkar P., Xu T. Large Language Models as Configuration Validators
  Submitted to 32nd ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2024).

RESEARCH EXPERIENCE

Interests: Software Testing, Software Engineering, Software System

Cross-System Configuration Testing — Feb. 2023 – Present
Advised by Prof. Darko Marinov, Prof. Indranil Gupta and Prof. Tianyin Xu

- Lead the project to develop the cross-system configuration testing (CSCtest), which transforms the traditional software tests in an automated fashion that reuses well-engineered test logic and oracles to test the configuration changes in multiple systems.
- Have reproduced 12 historical issues and reported new configuration-related code bugs.
- Honored to be selected as the **Best Research Project of CS525**.

Exploring Large Language Models as Configuration Validators — Jan. 2023 – Sep. 2023
Advised by Prof. Tianyin Xu

- Lead the project to undertake the exploration of employing pre-trained LLM for configuration validation, with an aim to comprehend its feasibility and effectiveness.
- Develop Ciri, an LLM-based configuration validation framework that integrates popular LLM models.
- We reveal open challenges such as ineffectiveness in detecting certain types of misconfigurations and biases to popular configuration parameters.
- Submitted to FSE 2024.

Test Selection for Unified Regression Testing — Aug. 2021 – Aug. 2022
Advised by Prof. Darko Marinov and Prof. Tianyin Xu

- Developed a configuration-aware model to unify selection of regression test and configuration test, which can maintain the Software/System Reliability through much lower time/machine cost.
- Reduced the testing time by **3.64 times** on average compared to executing all tests.
- Produced *Illinois Dataset of Configuration Tests* that has been used in education (CS 527, CS 591 SE) and REU at UIUC.
- The work has been accepted by **ICSE 2023**.

Work/Volunteer Experience

Student Volunteer — Melbourne, Australia
ICSE 2023 — May 2023

Co-Organizer of CS591 SE (Software Engineering Seminar) — IL, USA
University of Illinois Urbana–Champaign — Jan. 2023 - May 2023

Research Intern — IL, USA
IBM — Jan. 2023 - May 2023

Software Engineer Intern — Zhejiang, China
Wooduan Technology Co., Ltd — Jun. 2021 - Aug. 2021

Teaching Experience

Teaching Assistant - CS527 (Topics in Software Engineering) — Fall 2023
UIUC, with Prof. Darko Marinov

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UIUC, with Prof. Darko Marinov

Teaching Assistant - CS225 (Introduction to Data Structures and Algorithms) — Spring 2022
ZJU, with Prof. Klaus-Dieter Schewe

Teaching Assistant - ECE428 (Distributed Systems) — Spring 2022
ZJU, with Prof. Pavel Loskot

Teaching Assistant - CS101 (Introduction to Programming) — Spring 2021
ZJU, with Prof. Wee-Liat ONG

Teaching Assistant - ECE120 (Introduction to Computing) — Fall 2020
ZJU, with Prof. Volodymyr Kindratenko

Technical Skills

- **Languages**: Java, Python, C/C++, Assemble(x86), System Verilog, MATLAB
- **System & Cloud**: Kubernetes, Docker, Linux kernel, UNIX network programming, Qemu
- **Development Tools**: Git, CUDA, SQL, PyTorch, Maven, Spring Boot, CMake, Latex, MongoDB