

TIAN YU

[Github](#) ◇ [LinkedIn](#)

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Education

University of Virginia, Charlottesville

Aug 2025 - Present

Ph.D. in Computer Science

Advisor: [Sebastian Elbaum](#)

Research focus: Software engineering and robotics.

University of Washington, Seattle

Sept 2021 - June 2025

B.S. in Computer Science

GPA: 3.7/4.0

Research Interests

My research interest lies in **software engineering** for reliability, with an emphasis on program analysis and automated testing. I design techniques to analyze and test complex systems, including **robotics** and other cyber-physical systems, where uncertainty, scale, and interaction with the physical world challenge correctness and robustness.

Research Experience

Improving Unit Test Generation via Static/Dynamic Analysis

Jan 2023 - Present

Advisor: [Michael D. Ernst](#) ([Randoop](#))

University of Washington

- Enhanced a Java test generator with techniques for targeted input creation, long-term object state reuse, side-effect filtering, and integrated mutation-based evaluation.

Mapping New Jungles: Cross-Language API Transformation Tool

Jan 2025 - Mar 2025

Advisor: [Michael D. Ernst](#)

University of Washington

- Built **Jungle-Mapper**, a lightweight AST-based and graph-backed tool for inferring API transformation chains. Tool extended from Java to Rust, evaluating cross-language effort, accuracy trade-offs, and scalability.

Work Experience

Software Engineering Intern

July 2023 - Sept 2023

LangChain, Docker

China Pacific Insurance Company

- Built and deployed **Retrieval-Augmented Generation** LLM chatbots for QA and database interactions, with improved retrieval strategies (regex + LLM-based splitting, FAISS) boosting QA accuracy.