

Xiangyu Zhou

Phone: (+1) 206-636-7554 | Email: xiangyz@umich.edu | Homepage:
<https://kevinxiangyuzhou.github.io/>

EDUCATION

University of Michigan, Ann Arbor, MI — Ph.D. Candidate in Computer Science, Planned Graduation: Winter 2028

Advisor: Dr. Steve Oney

University of Washington, Seattle, WA — B.S. in Computer Engineering, 2018–2022

RESEARCH EXPERIENCE

Simulation for Human–Computer Interaction — Ph.D. Research, University of Michigan (2025–ongoing)

- Developed biologically inspired simulation models grounded in human motor control and decision-making theories.
- Designed and benchmarked human-like interaction simulators to study user performance trade-offs, predictive control, and micro-correction dynamics in interface navigation tasks.
- Developed a React + Firebase web experiment platform to collect human interaction trajectories in constrained tasks.
- Evaluated simulator performance against real user data with controlled experiments.

Neuro-Symbolic Program Synthesis for Web Procedure Automation — Ph.D. Research, University of Michigan (2023–ongoing)

- Developed a neuro-symbolic framework that combines large language model reasoning with symbolic execution to generate interpretable, reliable web procedure automation scripts.
- Designed prompting strategies to map natural language instructions into a Domain-Specific Language that enables accurate webpage DOM reasoning and element selection.
- Designed and implemented the language system and evaluated programs written in the language on benchmark that contains 120 real-world tasks.

Efficient Bottom-Up Synthesis for Programs with Local Variables — Ph.D. Research, University of Michigan (2022–2023)

- Designed and implemented a state-of-the-art program synthesis algorithm supporting free local variables.
- Evaluated performance on web procedure automation benchmark that contains 131 real-world tasks, demonstrated its efficiency and scalability.

Synthesizing Analytical SQL Queries from Demonstration — Undergraduate Research,
University of Washington (2020–2022)

- Developed a novel program synthesis algorithm for automatically generating analytical SQL queries from user demonstrations.
- Evaluated the tool on 80 real-world query tasks and validated usability through quantitative and qualitative user studies.

PUBLICATIONS

(* denotes equal contribution)

- Efficient Bottom-Up Synthesis for Programs with Local Variables
Xiang Li*, Xiangyu Zhou*, Rui Dong, Yihong Zhang, Xinyu Wang
POPL 2024 (ACM SIGPLAN Symposium on Principles of Programming Languages)
- Synthesizing Analytical SQL Queries from Computation Demonstration
Xiangyu Zhou, Rastislav Bodik, Alvin Cheung, Chenglong Wang
Distinguished Paper Award
PLDI 2022 (ACM SIGPLAN Conference on Programming Language Design and Implementation)

AWARDS & GRANTS

- OpenAI Researcher Access Program Grant, 2024
- Rackham Conference Travel Grant, 2023
- SIGPLAN Professional Activities Committee Award, 2023
- SIGPLAN Professional Activities Committee Award, 2022
- Distinguished Paper Award at PLDI, 2022

SERVICES

- Artifact Evaluation Committee Member — PLDI 2025, OOPSLA 2025, POPL 2024
- Student Volunteer — PLDI 2023

TEACHING

University of Michigan – Graduate Student Instructor

- EECS 183: Elementary Programming Concepts (Fall 2025)
- EECS 203: Discrete Mathematics (Spring 2025)
- EECS 481: Software Engineering (Fall 2023, Winter 2024)

University of Washington – Undergraduate Teaching Assistant

- CSE 461: Introduction to Computer Networks (Winter 2022)

TECHNICAL

Programming & Tools: Python, Java, Rust, C++, OCaml

Machine Learning & Artificial Intelligence: PyTorch, Nengo

Web & Experiment Platforms: React, Firebase

Data Analysis & Visualization: R, SQL