

Xiangyu Zhou

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EDUCATION

University of Michigan, Ann Arbor, MI, Sep 2022 - May 2028 **Ph.D. in Computer Science**

- Ph.D. Advisor: Dr. Steve Oney

University of Washington, Seattle, WA, Sep 2018 - May 2022 **B.S. in Computer Engineering**

RESEARCH EXPERIENCE

Computational Human Behavior Modeling for Interface Evaluation

Apr 2025–Present

University of Michigan, Ann Arbor, Michigan

- Uses computational models to generate synthetic human interaction trajectories from interface specifications, enabling automated GUI evaluation pipelines that surface usability issues in early development stage.
- Designed a closed-loop feedback system based on human factors from prior work studies and user studies we conducted. Implemented the system with “motor control” simulated by a **Model Predictive Control (MPC) policy** and “eye gaze” simulated by **regression models**, which produces human-like behaviors verified with human studies.
- Further built a personalization layer that fits the simulator to individual users from short calibration data, recovering per-user behavioral.

No-Code Programming for End-user

Aug 2020–Mar 2025

University of Michigan, Ann Arbor, Michigan

- Built no-code programming systems for web automation and data analysis, combining **LLMs**, **program synthesis**, and structured user demonstrations into systems usable by non-programmers.
- Developed search-based code generation algorithms achieving **SOTA** results on industry-relevant benchmarks: **22.5×** speedup over prior methods on real-world data analysis tasks (PLDI '22) and **93.9%** task success rate beating prior SOTA on a challenging program synthesis benchmark (POPL '24).
- Implemented end-to-end system infrastructure — **DSL design**, language interpreter, synthesis engine) in Python and Rust; published as [open-source artifact](#) and benchmarks.
- Work acquired a **Distinguished Paper Award** (~top 8% of the accepted papers).

SELECTED PUBLICATIONS

(* denotes equal contribution)

Note: CHI is recognized as top-tier HCI conferences; PLDI and POPL are recognized as top-tier programming system and implementation conferences.

- [Simulating Human Cursor Trajectories for Path-Sensitive GUI Evaluation](#)
[Xiangyu Zhou](#), Steve Oney
CHI EA 2026 (Extended Abstracts of the ACM CHI Conference on Human Factors in Computing Systems)
- [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)

TECHNICAL

- **Research methods**: experimental design, quantitative and qualitative user studies, statistical analysis, behavioral data analysis
- **Human factors & HCI**: cognitive and motor modeling, usability evaluation, heuristic analysis, behavior simulation, interface evaluation
- **Machine learning**: large language models, reinforcement learning, model predictive control, neuro-symbolic methods, PyTorch
- **Programming**: proficient in: Python, Rust, C/C++, Java. Advance in: SQL, OCaml, R