

CHENMING GE

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RESEARCH INTERESTS

Human-Computer Interaction (HCI), Generative UI, Computer Use Agent, Human-AI Interaction

EDUCATION

University of Michigan, Ann Arbor
B.S.E. in Computer Science

Ann Arbor, USA
Aug 2025 - Present

• **GPA:** 3.86/4.00

• **Selected Coursework:** Machine Learning, Natural Language Processing, Computer Vision, Operating Systems, Database Management Systems, Applied Parallel Programming for GPUs

Shanghai Jiao Tong University
B.Eng. in Electronic and Computer Engineering

Shanghai, China
Aug 2023 - Present

PUBLICATIONS

A11yLTLNav: Automatic Detection of Accessibility Navigation Failures

Ge, C.*, Peng, K.*, Shi, C.*, Greenman, B., Jiang, Y.

*arXiv:2609.17959. Submitted to the ACM CHI Conference on Human Factors in Computing Systems (CHI 2027). (*Equal Contribution)*

RESEARCH EXPERIENCE

Automatic Detection of Accessibility Navigation Failures

May 2026 – Sep 2026

Research Assistant at University of Utah

Advisor: Dr. Yue Jiang and Dr. Ben Greenman

- Developed **A11yLTLNav**, a checker that formalizes **accessibility navigation failures** for Blind and Low-Vision (BLV) screen-reader users as Linear Temporal Logic (LTL) properties and check them in **generated UIs**.
- Developed a systematic taxonomy of accessibility navigation failures for BLV users, covering failures from previous literatures and user studies about how BLV users failed in the process of **interaction** with the websites.
- Implemented an **web agent** baseline that navigates websites through screen-reader feedback and keyboard-only interactions to detect accessibility failures.
- Evaluated on **generated websites**, achieving **88.7% precision**, outperforming baselines by **31.4%**.
- Related work under review in CHI 2027.

Improve Generative UIs from Use

May 2026 – Oct 2026

Research Assistant at Purdue University

Advisor: Dr. Jason Wu

- Investigating how user interaction traces can provide implicit feedback for improving models' ability to generate **generative UIs** with better **usability**.
- Built a pipeline to generate websites, collect task interaction traces, diagnose usability issues, and automatically repair websites with coding agents, and finally use **Proximal Policy Optimization (PPO)** to fine-tune models for generating websites with better usability.
- Built baselines using trained **computer-use agents** to give feedback of usability of generated websites by **simulating user behavior**.
- Conducting controlled experiments to measure whether feedback from traces of user study can improve task usability and supports preference optimization of UIs generated by coding agents.

WebCoEvo: Adversarial Co-Evolution of Reflection Rules and Evolving Website for Web Agents

Mar 2026 – Jun 2026

Research Assistant at University of Michigan

Advisor: Prof. Honglak Lee

- Built **WebCoEvo**, an **Adversarial Co-Evolution** framework for web agents when websites' version updating, pairing a dynamic UI drift generator using **coding agents** to update its version with a **web agent**.
- Extract generalizable **meta-level reflection rules** from failure modes of web agents, outperforming **ExpeL** baselines by **19.6%**.
- Implementing a **Knowledge Graph** based pipeline to automatically identify version-affected tasks, replacing manual annotation for evolving websites.
- Containerized multi-version web apps via **Docker** and demonstrated **Out-of-Distribution Generalization** on BrowserGym and AgentLab.

Gravitational Effect on Swarming Behavior of Microorganisms
Research Assistant at Shanghai Jiao Tong University

Sep 2024 - Aug 2025
Advisor: Dr. Zijie Qu

- Trained a **U-Net** model for colony boundary segmentation; diagnosed systematic failure modes, then adopted a zero-shot **SAM**-based pipeline that achieved reliable automated detection, replacing traditional manual annotation pipelines, improving the correctness to $\sim 95\%$.

SELECTED PROJECTS

Efficient Inference for Embodied Foundation Models
Advisor: Dr. Jiachen Liu

Nov. 2025 – Mar. 2026

- Analyzed inference efficiency of **World Action Models (WAM)** for robotic policies; implemented **cross-attention KV caching** and token compression to accelerate inference in dynamic environments.
- Explored **dynamic-precision quantization** and **speculative decoding** for WAM to improve computational efficiency for real-time agent decision-making.

Probabilistic Motion Planning for Redundant Robots
Advisor: Prof. Dmitry Berenson

Sep 2025 - Dec 2025

- Reproduced and benchmarked **sampling-based motion planning algorithms** (RRT-Connect, PRM) for a **7-DOF Franka Panda** robot in simulation; implemented a hybrid sampling strategy that reduced trajectory generation latency by $\sim 75\%$.

AWARDS AND HONORS

- Dean’s List, University of Michigan
 - Meritorious Winner (10%), Interdisciplinary Contest in Modeling, COMAP
 - Undergraduate Merit Scholarship (Class C), Shanghai Jiao Tong University

Apr. 2026, Dec. 2025
May. 2025
Oct. 2024

SKILLS

Frameworks	PyTorch, Hugging Face, CUDA, Docker, Linux, React, Vue, Vite, OpenAI SDK
Languages	Python, C/C++, Java, Rust, HTML/CSS/JavaScript, TypeScript, SQL, MATLAB
Tools	Figma, Illustrator, Remotion, MATLAB, Codex, Claude Code, SolidWorks, LabVIEW