

YUNFEI WANG

+1 734-395-8239 [◇ wyunfei@umich.edu](mailto:wyunfei@umich.edu) [◇ github.com/wangyf9](https://github.com/wangyf9)

EDUCATION

University of Michigan

M.Eng. in Electrical & Computer Engineering

Ann Arbor, MI

Aug. 2025 – Expected Dec. 2026

- GPA: 4.0/4.0
- Relevant Coursework: Large Language Models (A), Machine Learning (A), Prob & Random Processes (A)

ShanghaiTech University

B.Eng. in Computer Science

Shanghai, China

Sept. 2021 – Jul. 2025

- GPA: 3.69/4.0 (Ranking: 19/180)
- Relevant Coursework: Artificial Intelligence (A), Deep Learning (A), Prob & Statistics (A)

PUBLICATIONS & MANUSCRIPTS

[1] **Yunfei Wang***, Xiaohao Xu*, Yang Li, and Xiaonan Huang. “When Search Becomes Memory: Accelerating Robot Design Discovery with Self-Evolving Skills.” *Conference on Empirical Methods in Natural Language Processing (EMNLP 2026)*, Main Conference.

[2] Zhijie Chen, **Yunfei Wang**, Wenshuo Zhang, Rui Sheng, Dingdong Liu, Zixin Chen, and Chuhan Shi. “CrossSense: Bridging Communication Gaps in Cross-Disciplinary Semi-Structured Interviews for Empathy Building.” Submitted to the *ACM Conference on Human Factors in Computing Systems (CHI 2027)*.

RESEARCH EXPERIENCE

TOOL-EVOLVE: Self-Evolving VLM Agent for Robotic Tool–Action Co-Design

Jun. 2026 – Present

University of Michigan | Advisor: Prof. Xiaonan Huang

Ann Arbor, MI

- Developed a self-evolving VLM agent that extends VLMgineer’s tool–action co-design with experience-driven adaptation across generations, without updating the underlying model weights.
- Designed a simulator-grounded Reflector that attributes failures to tool geometry, action strategy, or their interaction and converts the diagnosis into targeted guidance for subsequent evolution.
- Designed a cross-task memory pipeline that decomposes manipulation tasks into required capabilities, distills evaluated traces into reusable tool motifs and action schemas, and retrieves relevant experience for unseen tasks.

AUTO-ROBOTIST: Self-Evolving LLM Agent for Robot Design

Dec. 2025 – Jul. 2026

University of Michigan | Advisor: Prof. Xiaonan Huang

Ann Arbor, MI

- Developed AUTO-ROBOTIST, a self-evolving LLM agent that transforms evaluated morphology-search experience into transferable robot-design knowledge.
- Designed an auditable skill library with ADD, DIAGNOSE, and MERGE operations, grounding reusable design rules in evaluated successful and failed morphologies.
- Evaluated the framework on seven EvoGym tasks, achieving a $1.47\times$ average convergence speedup in 5×5 cold-start search and outperforming GA on all seven 10×10 cross-scale transfer tasks.

CrossSense: Interview Agent for Expert–Researcher Semantic Alignment

Jan. 2026 – Mar. 2026

Southeast University | Advisor: Prof. Chuhan Shi

Remote

- Developed an HCI interview assistant that detects real-time communication misalignments between researchers and domain experts and classifies them into five semantic-gap categories using a multi-agent LLM pipeline.
- Contributed to the end-to-end system, including LLM-based gap-bridging assistance, multi-agent prompt design, and frontend interaction design.

Biological Fish Motion Reconstruction for Robot Fish Motion Control

Nov. 2024 – May 2025

ShanghaiTech University | Advisor: Prof. Yang Wang

Shanghai, China

- Built a data extraction and real-to-sim pipeline as part of a full biomimetic imitation learning system, enabling biological fish swimming patterns to serve as reference motion for downstream DRL training.
- Fine-tuned DeepLabCut on a manually annotated 9,046-frame, 7-keypoint dataset for fish pose estimation, obtaining high-quality keypoint tracking data for the motion retargeting pipeline.
- Built an automated motion retargeting pipeline and validated locomotion reconstruction in Blender and Fish-Gym, confirming the reliability of the extracted motion data.

Optimization of Neural Rendering with Posit Number System
ShanghaiTech University | Advisor: Prof. Xin Lou

Jun. 2023 – Nov. 2023
Shanghai, China

- Implemented and integrated the Posit number system into NGP’s MLP and hash encoding to replace IEEE754 float32, halving the bit width while achieving higher PSNR in 6 of 8 benchmark scenes.
- Systematically evaluated Posit configurations from 16-bit to 8-bit, identifying Posit-12 as the optimal balance between reconstruction quality and memory efficiency.

SELECTED PROJECTS

GTRM: Gated Recursive Reasoning with Tiny Networks

Sept. 2025 – Dec. 2025

- Extended the Tiny Recursion Model with context, attention, and recurrent gating mechanisms, improving accuracy on Sudoku reasoning tasks by 5.6 percentage points.

Distributionally Robust Neural Networks on Stable-Diffusion-Generated Data

Sept. 2025 – Dec. 2025

- Constructed a controlled image dataset with spurious style correlations using Stable Diffusion XL and evaluated distributionally robust optimization methods across eight training regimes under style-based distribution shifts.

TEULM: Time-Efficient Ultrasound Localization Microscopy

Feb. 2024 – Jun. 2024

- Developed a GPU-accelerated TEULM pipeline using downsampling and 2D spatiotemporal RBF interpolation, evaluating reconstruction quality with Dice and RMSE to identify the optimal interpolation method.

HONORS & AWARDS

Merit Student (Top 15%), School of Information Science and Technology

Dec. 2024

Outstanding Student (Top 5%), School of Information Science and Technology

Dec. 2023

SKILLS

Languages: Python, PyTorch, C/C++, MATLAB

Tools & Software: Codex, Cursor, Claude Code, Git, Blender, Unity, Linux