

Weixian Xu

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EDUCATION

Shanghai Jiao Tong University

Sept. 2023 – June 2027 (Expected)

B.S. in Computer Science, **Zhiyuan College (ACM Honors Class)**

GPA: **3.86/4.3**

Selected Courses: Large Language Models (**A+**), Compiler Design (**A+**), Computer Systems (**A+**), Comprehensive Programming Practice (**A+**), Advanced Compiler Design (**A+**).

RESEARCH INTERESTS

My research pursues **Self-Evolving AI**—systems that transcend static tool-use to become dynamic partners. I aim to enable models to continuously refine their knowledge and utilize affective understanding to deeply align with user preferences over **long-term interactions**.

To address limitations in **sustained self-improvement** and **long-horizon reliability**, I explore novel architectures and training paradigms to enhance **memory and growth**. My work proceeds on two fronts: refining the **internal architecture and learning objectives** of individual models, and engineering the **system-level architecture and optimization strategies** of multi-model ecosystems.

Ultimately, I seek to empower **human-centric** models to master **interactive evolution**, growing through usage to benefit the wider community.

RESEARCH EXPERIENCE

Stanford SALT Lab

June 2026 – Present

Research Intern, supervised by Prof. Diyi Yang. Conducting research on human-centered AI.

GAIR Lab

June 2025 – June 2026

Research Intern, supervised by Prof. Pengfei Liu. Focused on self-improving AI for AI research, developing autonomous agents to accelerate the AI research cycle.

RESEARCH PROJECTS

EEVEE: Test-Time Prompt Learning for Self-Improving Agents  [Code](#) [\[arXiv\]](#)

- Developed a multi-dataset test-time prompt learning framework for self-improving LLM agents operating under heterogeneous real-world task streams.
- Introduced router-prompt co-evolution to assign inputs to specialized prompt configurations while reducing cross-dataset interference.
- Enabled continual adaptation across mixed domains, formats, and evaluation rules while preserving useful learned behavior.

ASI-Evolve: AI Accelerates AI  [Code](#) [\[arXiv\]](#)

- An end-to-end autonomous agent framework that enables LLMs to propose, implement, and verify new research ideas iteratively without human intervention.
- Developed a "Self-Evolution" loop where the system analyzes its own experimental failures to refine future hypotheses, significantly accelerating the scientific discovery cycle.
- Implemented a robust evaluation sandbox to safely execute and benchmark AI-generated code across various machine learning tasks.
- **Key Contributions:**
 - **Framework Synthesis:** Designed and implemented the core AI-Evolve framework, integrating autonomous coding, environment interaction, and self-reflective reasoning.

- **Complex Research Modeling:** Formalized complex scientific discovery processes into executable agentic workflows, enabling the AI to tackle open-ended research problems.
- **Multi-Domain Discovery:** Led the discovery of novel patterns in Architecture designing, Data processing, and Algorithm optimizing, validating the framework’s broad impact.

ASI-Arch: Autonomous Neural Architecture Discovery [Code \(1.1k ★\)](#) [\[arXiv\]](#)

- Co-developed an autonomous AI system for neural architecture discovery to reveal new design patterns.
- The pipeline executed 1,773 autonomous experiments and discovered 105 state-of-the-art architectures.
- The repository garnered **1.1k+ stars** within a month of publication.
- **Key Contributions:**
 - Designed and implemented the pipeline for autonomous discovery.
 - Leveraged higher-level code constructs to expand search domains.
 - Orchestrated experiments enabling large-scale autonomous testing.
 - Conducted research visualization and validation experiments.

PERSONAL PROJECTS

ACore [\[Link to Repo\]](#)

A comprehensive OS kernel exploring core concepts through independent development.

- Implemented memory management with virtual memory and page allocation.
- Developed process scheduling, thread management, and user/kernel space isolation.
- Built a file system with a VFS layer supporting multiple filesystems.
- Optimized performance specifically for modern hardware architectures.

Imxc [\[Link to Repo\]](#)

Full-mark course project for Compiler Design. A compiler for Mx (C-like language) written in Java.*

- Achieved performance **comparable to Clang** after implementing Mem2Reg and RegAlloc.
- Implemented optimizations: Function Inlining, SCCP, ADCE, and Local CSE.
- Designed a high-performance Register Allocation module using Graph Coloring.
- Supported multi-file compilation with shared rules and incremental compilation for faster builds.

CPU (RISC-V Processor) [\[Link to Repo\]](#)

Computer Architecture course project. A processor core implementation in Verilog.

- Implemented **Tomasulo architecture** enabling dynamic instruction scheduling.
- Supported basic RISC-V (RV32I) instruction set.
- Capable of deployment on FPGA hardware.

AWARDS AND HONORS

Foresight-Sequoia Talent Development Fund	2025
<i>Selected Top 5 students in Zhiyuan College</i>	
Zhiyuan Honors Scholarship	2024, 2025
<i>Academic Excellence Award (Top 2% in SJTU)</i>	
Provincial Second Prize, Chinese Physics Olympiad (CPhO)	2022
<i>Zhejiang Province</i>	

TEACHING & LEADERSHIP EXPERIENCE

Head Teaching Assistant	Spring 2025
Data Structures (CS1951), Instructor: Prof. Yong Yu.	
Teaching Assistant	Fall 2024, 2025
Programming (CS1953), Instructor: Prof. Huiyu Weng.	

Class Monitor, ACM Honors Class

Present

Lead the ACM cohort, coordinating schedules and managing administrative tasks.

SKILLS

Programming	C++, Python, Java, Rust, Verilog
Tools	Git, Markdown, L ^A T _E X, PyTorch, Linux
Languages	Chinese (Native), English (Fluent, TOEFL 104, Speaking 25)