

Chenyuan Zhou

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EDUCATION

Shanghai Jiao Tong University
B.S in computer science, **ACM Honors Class**

2023.9 - 2027.6(expected)

GPA(Core Courses): **3.94/4.3**

Selected courses:

- Algorithm Design and Analysis :**A+, 98/100**
- Compiler Design and Implementation:**A+, 99/100**
- Computer Architecture:**A+, 97/100**
- Data Structure:**A+, 97/100**
- Mathematical Analysis(Honor):**A+, 95/100**

RESEARCH INTEREST

My major interest is **Robotics** and **Computer Vision**. Especially, at present, I'm interested in how to enhance model's perception of 3D structure and instruction following ability with multimodal data in the real world.

RESEARCH EXPERIENCE

RHOS (Yong-Lu Li, Ce-Wu Lu)

2025.6 - now

Our work focus on the precise manipulation with visual instruction and diverse tools adaptation, under the supervision of Yong-Lu Li and Ce-Wu Lu.

PROJECTS

Partial Rollout for LLM RL (LLM Course Project)

Spring 2025 [Link to Repo](#)

Decomposed the single rollout process into multiple turns and propagated unfinished rollouts to the next iteration, reducing the negative impact of long-tail rollouts.

- Achieved a 30% increase in overall speed without performance degradation.
- Implemented partial code and conducted experiments in collaboration with Zeng Ji and Li Zhiyan. Details in [PR 1826](#)

RISCV CPU (Course Project)

Fall 2024 [Link to Repo](#)

Designed a CPU in Verilog implementing the basic RISCV instruction set.

- Implemented branch prediction and instruction prefetching.
- Successfully executed on FPGA.

Mx Compiler (Course Project)

Summer 2024 [Link to Repo](#)

A compiler for Mx* (an educational language with basic features of C), as well as Clang (with `mem2reg` and register allocation).

- Implemented various optimizations including SCCP, DCE, inlining, GVN & GCM, loop detection, and unrolling.
- Utilized SSA graph coloring to allocate registers based on liveness analysis.

PAPERS

Automatic Tool Adaptation for Precise Manipulation and Visual Instruction Following (in submission to CoRL 2026)

Utilizing visual guidance and **tool-object awareness** to navigate VLA models, implementing precision bimanual manipulation and automatic adaptation to different kinds of tools , as a co-leader.

- Visual guidance for precise operation such as fine cutting and accurate placement.
- Automatically adapting to various tools without extensive fine-tuning.

A Perceptual Representation with Occlusion Reasoning for 3D Scene Understanding (CV Course Project, in submission to ICML 2026)

Developed a **view-integrative** and **occlusion-aware** representation that enables the model to perceive spatial structures through reasoning about occluded geometry. The representation fuses currently perceived and previously observed views into a unified latent space for consistent 3D understanding, as project leader.

- Aimed to augment the model's spatial inference ability in occlusion-dense tasks such as robotic manipulation and navigation.
- Integrated multiple observations into a unified, perspective-consistent representation that maintains spatial continuity across views.
- Distinguished mutually occluding surfaces by assigning them to separate perceptual layers, achieving layered spatial reasoning and volumetric awareness.

AWARDS AND HONORS

2023, 2024 Zhiyuan Honors Scholarship (2 % in SJTU)

STUDENT WORK AND TEACHING EXPERIENCE

Computer Programming, Teaching Assistant	2024 Fall
Data Structure, Teaching Assistant	2025 Spring
Principle and Practice of Computer Algorithms(AI), Teaching Assistant	2025 Summer
Vice Monitor of ACM Honors Class 2024	2024.9 - 2025.9

SKILLS

Programming	C++, Python, Java, Verilog,
Tools	Git, Solidworkers, ros2, LATEX
Languages	Chinese(Native speaker), English(Fluent)