Chaoyi Huang

SHANGHAI JIAO TONG UNIVERSITY

 XsystemH | piaozy.xyz | xhsystem@sjtu.edu.cn

EDUCATION

Shanghai Jiao Tong University   Shanghai, China
B.S. in Computer Science, **ACM Honors Class**   Aug. 2023 - June. 2027(expected)
Selected courses:
Principle and Practice of Computer Algorithms(97/100), Large Language Models(94/100), Introduction to Computer Systems(98/100).

RESEARCH INTERESTS

My major interest is **Robotics** and **Computer Vision**. Especially, at present, I'm interested in designing intelligent systems that can perceive and interact with the world in a human-like manner.

RESEARCH EXPERIENCE

Machine Vision and Intelligence Group, RHOS Lab, SJTU   Shanghai, China
Research Assistant, advised by Prof. Yonglu Li and Prof. Cewu Lu   *June. 2024- Present*

PROJECTS

COMPILER for MxLang — Java   Link to Github

An ANTLR-4 based compiler that translates Mx language (which is a C++ and Java like language) into RV32I Assembly. Designed based on LLVM IR and many optimizations are added for better performance.

RUST KERNEL — Rust   Link to Github

A toy operating system kernel implemented in Rust with privileged mode according to RISC-V specification, process scheduler, etc.

RISC-V CPU — Verilog   Link to Github

A Tomasulo RISC-V CPU with iCache and branch predictor. The architecture design can be successfully implemented on FPGA board.

RAY TRACER — Rust   Link to Github

A path tracing based ray tracing renderer written in Rust.

PAPERS

Visual Instruction and Automatic Tool Adaptation for Precise Manipulation
(in submission to RSS 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.

Ca3OH1: Contact Aware in 3D Object-Human Interaction

(CV Course Project, in submission to ECCV 2026)

Using a well-trained network to predict the contact area between people and objects based on images improves performance in the 3D reconstruction process and solves the "sandwich" problem.

Awards and Honors

Zhiyuan Honors Scholarship   Zhiyuan College of SJTU, 2023, 2024, 2025
Awarded to top 5% students in SJTU annually.

Experience

Teaching Assistant	Principle and Practice of Computer Algorithms(CS1952), 2025 summer
Teaching Assistant	Great Ideas in Computer Science(CS1950), 2024 fall

Skills

Programming	C++, Python, Java, Rust, Verilog
Tools	SolidWorks, ROS, LaTeX
Languages	Chinese(Native speaker), English(CET6:586/750)