

Yiming Xiang

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Education

University of Michigan - Ann Arbor (GPA: 3.9/4.0)

Undergraduate in Computer Science

Aug 2023 - May 2025

- Research assistant doing **operating system** research in [OrderLab](#) advised by [Prof. Ryan Huang](#).
- Participated in the [SURE](#) research project under Prof. Ryan Huang's mentoring.
- Member in [Prof. Ang Chen](#)'s UseSys lab doing IaC (Infrastructure as Code) research.
- Member in [Prof. Cyrus Omar](#)'s [Future of Programming Lab](#) developing [Hazel](#).

Shanghai Jiao Tong University (UM-SJTU Joint Institute) (GPA: 3.4/4.0)

Undergraduate in Electrical and Computer Engineering

Sep 2021 - Jul 2025

- Director of Technical Department of UM-SJTU Joint Institute Student Union.
- Working as the ENGR1510 teaching assistant.
- Working as the ENGR1000 teaching assistant and the course developer.

Research Experience

Summer Undergraduate Research in Engineering, OrderLab

Research Intern (first author of the paper targeting OSDI '25) advised by [Prof. Ryan Huang](#)

May 2024 - Current

- Improve **eBPF**: a kernel technology that run sandboxed programs in kernel.
- Present the results in [CSE mini symposium](#) and the poster session.

UseSys

Research Intern advised by [Prof. Ang Chen](#)

August 2024 - Current

- Find [Terraform](#) (an IaC platform) updating bugs.
- Use **graph-based** fuzzing technique to do mutation-based fuzzing.

SilverFOCS

SilverFOCS Course Research Intern advised by [Prof. Manuel Charlemagne](#)

April 2023 - August 2023

- Do research on **game engine architecture**.
- Build a 2D game engine [Messenger](#) for Elm (a functional programming language) as the main contributor.
- Borrow concepts from operating systems such as user kernel separation, context switching and filesystem.
- Tested and used by [SilverFOCS](#), which have more than 100 students.

Working and Teaching Experience

Future of Programming Lab

Software Development Intern advised by [Prof. Cyrus Omar](#)

August 2023 - January 2024

- Participate in developing [Hazel](#), a live functional programming environment with typed holes.
- Have coding experience with [ReasonML](#) and [OCaml](#).

JI Center for Learning and Teaching

ENGR1000 (Introduction to Engineering) Teaching Assistant advised by [Prof. Manuel Charlemagne](#)

April 2023 - August 2023

- Give students two and a half hours of lab every week.
- Give a [special talk on Monad](#).
- Teach students to use our 2D game engine [Messenger](#) to make great games.

JI Student Union Technology Department

Director

August 2022 - August 2023

- Use Unity to develop [Nova WXM](#) and [Nova Online Editor](#) and build a visual novel game for JI Student Union.
- Develop [Canvas Helper](#) and [Canvas Helper2](#), a tool to easily view course information in Canvas LMS.
- Develop [vscode-joj-tools](#), a VS Code plugin for an online judge system.
- Give speeches on various topics, including Git, VS Code, [TeX](#) etc.

JI Center for Learning and Teaching

ENGR1510 (Introduction to Programming) Teaching Assistant advised by [Prof. Manuel Charlemagne](#)

September 2022 - December 2022

- Give students two and a half hours of lab every week.
- Build a **clang-tidy** plugin in LLVM that supports several code quality checks and give hints to them. Based on [Libtooling](#).
- Write Python and Bash automated scripts to interact with Gitea for the teaching team.

Shanghai Chuanrui Software Technology Co., Ltd

Software Engineer

November 2021 - February 2022

- Collaborate with a four-person team to develop Shanghai Parking APP with **HTML5** which finally was released as a mobile app to display the location and attribute information of the parking lot on the mobile phone.

University Projects (Selected)

Puka (C++, Lua)

EECS498 (Game Engine Architecture)

February 2024 - May 2024

- An experimental 2D game engine designed to improve **concurrency** and keep **simplicity** for the users at the same time.
- Use Lua as the scripting language.
- Automatically map components to CPU cores with dependencies with high performance.
- Use **transparent synchronization** mechanism between different Lua VMs to support multi-core Lua code execution.

Compiler Projects (Rust, C++)

EECS483 (Compiler Construction) and EECS583 (Advanced Compiler)

August 2023 - May 2024

- Use Rust to write a toy compiler that compiles a functional programming language to X86 machine code.
- [Re-implement](#) the algorithm in a compiler [paper](#) that optimized SIMD instructions in LLVM.

Nova WXM (Unity, C#)

JI Student Union, Main Contributor

August 2022 - September 2022

- Added WebGL support to a visual novel engine in Unity, which introduces the student union to freshmen.
- Support **hot update** of the game resources from the server.

Reweave (Elm, JavaScript, Python)

SilverFOCS (ENGR1000), Main Code Contributor

April 2022 - August 2022

- A Chinese style platform game. Collaborated with a four-student team.
- Based on a self-made 2D game engine.
- Innovative game mechanisms.

Canvas Helper 2 (Vue.js, JavaScript, Python)

TechJI, Main Contributor

April 2022 - Current

- A handy tool that shows Canvas announcements, assignments and discussions.
- Distributed with a server application and a web interface for the users.
- Can be integrated into the [Wallpaper Engine](#).

Skills

Programming Rust, C, Kernel hacking, C++, CUDA, Python, Javascript (Vue.js), Haskell, OCaml, Elm, C#, Bash, Git, 四喜, Typst, Coq.

Game dev Unity, Godot, Lua scripting.

Miscellaneous Vim, Emacs, Visual Studio, Visual Studio Code.

Achievements

- 2023 **Advanced Teaching Assistant Certificate**, Shanghai Jiao Tong University
- 2022 **2021-2022 Undergraduate Excellent Scholarship**, Shanghai Jiao Tong University
- 2022 **Second Prize**, Undergraduate Mathematical Contest in Modeling
- 2022 **Honorable Mention**, 2022 Interdisciplinary Contest In Modeling (ICM)
- 2021 **Champion**, Freshmen Table Tennis Competition of JI
- 2019 **Second Prize**, Chinese High School Mathematics League
- 2018 **Second Prize**, National Olympiad in Informatics in Provinces (**NOIP**)