

Baichuan Li (Patrick Li)

patrli@umich.edu • (+1) 734-548-2446 / (+86) 135-8565-2402 • Apt. 1B, 1865 Lake Lila Lane, Ann Arbor, MI, 48105

EDUCATION

University of Michigan

Ann Arbor, MI

Master of Computer Science & Engineering

Apr. 2025

Coursework: Parallel Computing, Applied GPU Programming

Bachelor of Science in Engineering in Computer

Apr. 2023

Coursework: Data Structures and Algorithms, Foundations of Computer Science, Intro to Computer Security, Compiler Construction, Intro to Formal Verification

GPA: 3.9 / 4.0

Shanghai Jiao Tong University

Shanghai, China

Bachelor of Electrical Computer Engineering

Aug. 2023

Coursework: Intro to Computer and Programming

SKILLS

Programming Languages: Python, C / C++, JavaScript, Elm, Rust

Toolchain: Linux, Docker, Kubernetes, NginX, SQL, Vue.js, React.js, Celery, Redis, NATS

WORK EXPERIENCE

Baixing.Inc

Shanghai, China

Backend Engineer

May. 2023 - Aug. 2023

- Constructed the navit.ai website backend system based on **FastAPI** and **Peewee ORM** to help the users to chat with multiple AI bots.
- Designed and standardized the navit.ai backend API with **Pydantic** model.
- Enhanced the open source project midjourney-api, introducing the powerful Midjourney Actions API into the open source project, helping other developers to work on the same issue.
- Integrated the midjourney-api project into the navit.ai backend to enhance the stability of our Midjourney bot.
- Transformed the bot backend of navit.ai website to **Kubernetes** and greatly enhanced the throughput.

College of Engineering, University of Michigan

Ann Arbor, Michigan

Graduate Student Instructor of Data Structures and Algorithms

Aug. 2023 - Dec. 2023

- Maintained and developed the autograder system using **PHP** to enhance the student experience.
- Taught students all the core concepts of basic algorithms and data structures including **sorting algorithms**, **STL containers**, **dynamic programming** and **search algorithms**.
- Held office hours and lab sessions to help any students falling behind.

University of Michigan - Shanghai Jiao Tong University Joint Institute

Shanghai, China

Teaching Assistant of Introduction to Engineering

May. 2021 - Sep. 2021

- Supported the students technically to develop web games and provide technical advising to enhance their engineering skills
- Collaborated with other Teaching Assistants to enhance the student's capability on technical collaboration, such as project management and Git version control.
- Created and continuously maintained the course website based on **Python Flask**, **SQLite**, **Redis** and **Celery** to provide the platform where students can compile and demonstrate their web game projects.
- Led the course website development team, introducing coding style specification, development workflow regulation and git commit message style regulation to ensure that the future developers can get involved easily.

Clarity Lab, University of Michigan

Ann Arbor, Michigan

Research Assistant

May. 2022 - Aug. 2022

- Ported the **Kubernetes** API into the Jaseci Cloud Scheduler with the help of Kubernetes Python binding to lay a foundation for further cloud native research.
- Deployed the Jaseci system onto the Kubernetes Cluster provided by University of Michigan.
- Built tests based on **Python Locust** and **Prometheus** to evaluate the performance of Jaseci scheduler.

COURSE PROJECT EXPERIENCE

Course: Introduction to Engineering

Shanghai, China

Web game: *Calypso*

May 2020 - Aug. 2020

- Developed the web game using **elm** to deliver a smooth gaming experience.
- Polished the entire game with well-designed fine-grained animation.
- Assisted the development of the artwork to test all the art designs.

Course: Web Systems

Ann Arbor, Michigan

Website: *Insta485*

Feb. 2023 - Apr. 2023

- Developed the website with **React.js**, **Python Flask** and **MySQL** to make Insta485 similar to Instagram.
- Developed the same website using three different technologies: **static site**, **server side rendering** and **client side rendering**.

Course: Introduction to Game Development

Ann Arbor, Michigan

Game: *Legend of Adlez*

Feb. 2023 - Apr. 2023

- Remade the dungeon scene in the 1986 Nintendo *Legend of Zelda* using **Unity Engine** with **C#**.
- Created and implemented new laser beams based on the original Nintendo game to enhance the attractiveness of the game.

Game: *Swapper*

- Created and developed the game called *Swapper* using **Unity Engine** and implemented the two-player mechanism similar to *FireBoy and WaterGirl*.

Game: *Cavelit*

- Created and developed a mining adventure game called *Cavelit* using **Unity Engine**.
- Developed the 2D audio system to simulate the situation in a cave.
- Developed the flickering lava prefab with a well-designed **lighting system** embedded.

Course: App Development for Entrepreneurs

Shanghai, China

Android Application: *Cryptex*

May 2020 - Aug. 2020

- Worked as the only backend developer, designed and implemented the backend API using **Python FastAPI**, **Peewee ORM** and **Redis**.
- **Docker** containerized the backend software to unify the deployment environment.
- Deployed the backend on **Aliyun Serverless Kubernetes Cluster** for better throughput and performance.
- Contributed to the frontend development using **Kotlin Jetpack Compose**.

PERSONAL PROJECT EXPERIENCE

Hosico (Student Organization of University of Michigan)

Ann Arbor, Michigan

Co-founder & Infrastructure Group Leader

Jul. 2022 - Present

- Founded the Hosico organization, together with a group of intelligent engineers and UI/UX designers, to provide well-organized **cloud native** services for the University of Michigan students.
- Built the basic cluster infrastructure based on Kubernetes to enhance the robustness of the Hosico system.
- Participated as a **DevOps** leader to help develop the infrastructure system.

DishDiplomat | github.com/PSY3650J-International-Students

Shanghai, China

Main Developer & Group Leader

Jun. 2023 - Aug. 2023

- Led the development of DishDiplomat website that includes well-designed English food menus and helps the international students living on Shanghai Jiao Tong University campus to order food in Chinese canteens.
- Designed and set up the entire development workflow, including **coding style**, **CI/CD pipeline** and **Cloudflare global deployment**.
- Developed the website using **Vue.js** and **Vuetify.js**, following the Google Material Design Guidelines.

TinkerNav | github.com/TinkerNav

Ann Arbor, Michigan (Remote)

Rust Backend Developer

Aug. 2023 - Present

- Developed the backend system of TinkerNav to support real-time chatting with AI bots using **Rust Rocket Framework** to improve the performance.
- Integrated **NATS** into TinkerNav as a cloud native publish-subscribe service.