Haoyuan Chen

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Albany, NY

EDUCATION

Rensselaer Polytechnic Institute   **Troy, NY**

B.S. in Computer Science & Mathematics | **Minor**: *Artificial Intelligence* | *GPA:* **3.93**/*4.00*   Expected December 2025

Awards: Dean's Honors List, Archimedean Society, Rensselaer Leadership Award

Relevant Coursework: Data Structures, Introduction to Algorithms, Principles of Software, Operating Systems, Introduction to Artificial Intelligence

TECHNICAL SKILLS

Languages: Python, C/C++, Java, JavaScript/Typescript, HTML, CSS, LaTeX

Frameworks and Tools: ReactJS, Tailwind CSS, Redux, ExpressJS, NodeJS, NextJS, MongoDB, PostgreSQL, PyTorch

Developer Tools: Git/GitHub, VS Code, Microsoft Office, G-Suite, Postman API, Docker

Proficient in Mandarin and Japanese

EXPERIENCE

HARP RESEARCH   **Troy, NY**

Full-Stack Software Engineering Intern   May 2025 – August 2025

- Collaborated in a team to create a **medical imaging workflow management system** that integrates with existing PACS (Picture Archiving and Communication System).
- Architected a full-stack system involving a **Chrome extension** frontend, **Express** backend, and **PostgreSQL** database.
- Built **containerized microservices architecture** with **Docker Compose,** orchestrating multiple services including a dual-database setup (operational and demonstration databases).

RENSSELAER POLYTECHNIC INSTITUTE   **Troy, NY**

Undergraduate Teaching Assistant – Computer Science Department   Jan 2025 – Current

- Undergraduate Teaching Assistant for **Principles of Software** and **Intro to Artificial Intelligence**.
- Facilitated weekly **lab periods and office hours**, along with other TAs, to reinforce concepts taught in lectures.
- Graded **100+ students' homework and exams** while ensuring fair and consistent evaluation.

RENSSELAER CENTER FOR OPEN SOURCE (RCOS)   **Troy, NY**

Yomitomo – Open-Source Project Lead   Jan 2025 – May 2025

- Led a team of developers to create *Yomitomo*, a Chrome extension for contextual language translation and learning.
- Implemented real-time text selection and translation features using **React, TypeScript, and Framer Motion** for a smooth user experience
- Built an AI-powered chat system by integrating **OpenAI's API** through a **Node.js/Express** backend server

ROBOHELP518 – Backend Technical Co-lead   Jan 2024 – May 2024

- Co-led a group of aspiring programmers to support local robotics teams who lack coding experience.
- Utilized Python libraries such as **OpenCV** to help the robot recognize its precise location through on-field Apriltags.
- Constructed "build-world" functions that update location data to all existing tags when one tag is detected, **boosting navigation accuracy and speed by 25%.**

PROJECTS

SORAAI – Language Tutor ChatApp | *React, TailwindCSS, Typescript, ExpressJS, MongoDB* | soraai.onrender.com

- Architected a **full-stack** language learning chat application with **React/TypeScript** frontend and **Node.js/Express** backend, achieving **99.9% uptime** and **<200ms response times**
- Developed an AI-powered tutoring system using OpenAI's GPT-4o model that dynamically adapts content difficulty across 10 proficiency levels, resulting in **40% faster user progression**
- Implemented real-time quiz generation using GPT-4o that prevents question repetition and automatically adjusts difficulty based on user performance

FLAPPY BIRD WITH NEAT GENETIC ALGORITHMS | *Python, Pygame, Neat-Python*

- Applied the **artificial neural networks** produced by the NEAT-python algorithm to run simulations aimed to produce an ideal bird that would succeed in the game.