

Haoyuan Chen

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EDUCATION

Rensselaer Polytechnic Institute

Troy, NY

M.S. in Computer Science, Focus in Artificial Intelligence & Machine Learning

Jan. 2026 - Dec. 2026

*B.S. in Computer Science and Mathematics, Minor in Artificial Intelligence, **GPA: 3.93***

Aug. 2022 - Dec. 2025

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

TECHNICAL SKILLS

Languages: Python, C/C++, Java, JavaScript/Typescript, HTML/CSS, SQL (PostgreSQL)

Frameworks/Libraries: ReactJS, Tailwind CSS, Redux, ExpressJS, NodeJS, NextJS, Prisma, PyTorch

Developer Tools: Git, VS Code, Eclipse, Microsoft Office, G-Suite, Postman API, Docker, Playwright, MongoDB

EXPERIENCE

Harp Research Inc.

Troy, NY

Full-Stack Software Engineering Intern

May 2025 - Aug. 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 with 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 - Present

- Undergraduate Teaching Assistant for **Principles of Software**, **Intro to Artificial Intelligence**, and **Computer Science I**.
- 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 active 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*

- 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.