# Haoyuan Chen

646-240-3202 | Haoyuan2004@gmail.com | haoyuan-chen.com | linkedin.com/in/haoyuanchen27 |
github.com/ChenHY1217 | Albany, NY

## *EDUCATION*

**Rensselaer Polytechnic Institute** **Troy, NY**

**Major***: Computer Science & Mathematics* | **Minor***: Artificial Intelligence* | *GPA: 3.92/4.00* Expected December 2025

**Awards:** Dean's Honors List, Archimedean Society, Rensselaer Leadership Award, CSCI 2200 Letter of Recognition

**Relevant Coursework:** Data Structures, Introduction to Algorithms, Principles of Software, Operating Systems, Numerical Computing, Computational Optimization, Introduction to Artificial Intelligence

## *TECHNICAL SKILLS*

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

**Frameworks and Tools:** React.js, Tailwind CSS, Redux, ExpressJS, NodeJS, NextJS, MongoDB

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

**Proficient in** Mandarin and Japanese

## *EXPERIENCE*

**RENSSELAER POLYTECHNIC INSTITUTE** **Troy, NY**

*Undergraduate Teaching Assistant – Computer Science Department* Jan 2025 – Current

- Undergraduate Teaching Assistant for **Principles of Software** in Java course for over **300+ students**
- **Increased student exam scores by 15%** by actively responding to inquiries from students and improving their understanding
- Facilitated weekly **lab periods of 30+ students**, along with other TAs, to reinforce concepts taught in lectures
- Graded **100+ students' homework and exams** while ensuring fair and consistent evaluation
- Attended weekly TA training workshops to enhance teaching and leadership ability

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

*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/implemented 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**
- Engineered a robust user progress tracking system with granular metrics for vocabulary and grammar skills, enabling **data-driven personalization** of learning paths
- 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*

- Implemented two versions of the classic Flappy Bird game using **Pygame**, one playable by the user and one played by the **NEAT-genetic algorithm**.
- 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.