

Yuyuan Huang

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EDUCATION

Brown University, *Sc.B Computer Science/Comparative Literature*, 4.0/4.0 GPA Providence, RI | **Expected Graduation May 2028**

Relevant Courses: Software Engineering, Data Structures and Algorithms, Introduction to Object-Oriented Programming and Computer Science, Cybersecurity Ethics, Discrete Structures and Probability, Linear Algebra

The Winsor School, *High School Diploma*, 4.0/4.0 GPA

Boston, MA | **Class of 2024**

WORK EXPERIENCE

Medtronic, *Software Engineering Intern*

Boston, MA | June 2025 – August 2025

- Developed a real-time gaze-tracking data visualization tool for the HUGO surgical robot display using QML, C++, and Python used daily by 200+ engineers in the Boston office, boosting system testing efficiency by 20%.
- Integrated performance-critical UI elements with DDS communication network and implemented hardware-in-the-loop and software-in-the-loop testing to ensure stable operation under surgical conditions.

RESEARCH EXPERIENCE

Brown AI Research and Ethics Society, *Undergraduate Researcher*

Providence, RI | October 2024 – present

- Collaborated with a team to develop low-resource language models for Kurdish and Narragansett using BERT transformers and HuggingFace models in Python, contributing to more inclusive natural language processing technology for 1,800+ people in underserved linguistic communities across Rhode Island.

Harvard University, *Undergraduate Researcher*

Boston, MA | June 2024 – August 2024

- Built a Python-based tool integrating web scraping and generative AI to streamline literature reviews on PubMed, reducing manual search time for environmental health studies by 25%.
- Conducted urban air quality disparities in disadvantaged Boston neighborhoods using Python, R, and Microsoft Excel. Presented findings to 200+ community members at Tufts Medical Center and Boston Chinatown Neighborhood Center, informing local advocacy efforts.

LEADERSHIP EXPERIENCE

Brown Space Engineering, *Robotics Lead*

Providence, RI | September 2024 – present

- Founded and supervised a team of 15 robotics engineers developing terrain analysis algorithms for NASA-JPL's open source rover, applying OpenCV, ROS Perception Stack, and TensorFlow in simulated and real-time environments.
- Facilitated software development and testing through inter-team collaboration on autonomous navigation tasks, advancing open-source contributions to planetary exploration robotics.

Creative Classroom, *Founder*

Boston, MA | March 2020 – August 2024

- Founded and led a community service organization providing English writing, public speaking, and leadership workshops to 475+ underprivileged Asian-American immigrant youth.
- Oversaw a team of 15 tutors, wrote curricula, and coordinated with local nonprofit organizations. Designed all promotional materials and organization website (<https://www.creative-classroom.org/>).

TECHNICAL PROJECTS

Illuminate

Python, HTML/CSS, JavaScript | January 2025

- Engineered a web application utilizing spaCy NLP to detect gender-biased adjectives in user-inputted text and suggest neutral adjectives, promoting inclusive language. Showcased at Hack@Brown 2025 and received positive feedback from 10+ users.

DebateBase

Python, SQL | August 2023 – January 2024

- Produced a full-stack user-centered knowledge platform to support 30+ youth debaters in the Boston area, integrating generative AI technology to deliver accessible educational debate resources and improve preparation outcomes.
- Employed PostgreSQL for database management, FastAPI and REST APIs for backend development, and Streamlit for frontend development. Utilized OpenAI API, Langchain, and Hugging Face models to analyze domain-specific knowledge and generate targeted feedback.

SKILLS

Programming Languages: Python, C++, QML, Git, JavaScript, Java, SQL, HTML/CSS, R

Tools/Frameworks/Libraries: Qt, Squish, Ubuntu, Docker, CMake, TensorFlow, OpenCV, FastAPI, Streamlit, PostgreSQL

Project Management Tools: Agile, Jira, Confluence, Bitbucket, Bamboo, Miro, Figma, Microsoft Office Suite

Foreign Languages: Mandarin (native), Cantonese (native), Swedish (intermediate)

ADDITIONAL HONORS

Massachusetts State Science and Engineering Fair 3rd place Award in Computer Science (2024)

National Center for Women and Information Technology (NCWIT) Aspirations in Computing Regional Affiliate Award (2024)