

# Harrison Huang

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## EDUCATION

**Rice University**, Houston, TX

*Master of Science in Computer Science*

*Bachelor of Science in Computer Science, Minor in Mathematics*

**Relevant Coursework:** Deep Learning for Vision and Language, Natural Language Processing, Machine Learning, Data Structures and Algorithms, Object-Oriented Programming, Database Systems, Distributed Systems, Operating Systems, Linear Algebra, Probability and Statistics

**Organizations:** Computer Science Graduate Student Association, Academic Mentor Society, Jones College Webmasters

Cumulative GPA: 4.0/4.0

*Expected May 2025*

*Aug 2020 – Dec 2023*

## HONORS & AWARDS

**IEEE Computer Society North America Student Challenge Competition Finalist** Nov 2024

**AIES 2024 Student Travel Award** Oct 2024

**Rice Engineering Alumni (REA) Graduate Student Travel Grant** Oct 2024

**Rice University MS Fellowship Award** Jan 2024

**President's Honor Roll** Dec 2023

**Segal AmeriCorps Education Award** Aug 2021

**Chinese Professional Club Scholarship** Feb 2020

## PUBLICATIONS

**PPS: Personalized Policy Summarization for Explaining Sequential Behavior of Autonomous Agents.** Harrison Huang\*; Peizhu Qian\*; and Vaibhav Unhelkar 2024. *In Proceedings of the AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES).*

## CONFERENCE PRESENTATIONS

**In-Space Physical AI Workshop** Nov 2024

**AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES)** Oct 2024

**Texas Regional Robotics Symposium (TEROS)** Apr 2023

## PROFESSIONAL EXPERIENCE

**Human-Centered AI and Robotics Lab Researcher**

Apr 2022 – Present

*Rice University*

*Houston, TX*

- Designed teaching algorithms to identify and address gaps in students' knowledge during the learning process, contributing to recent advancements in algorithmic decision-making and policy summarization
- Engineered simulations to measure the performance of teaching algorithms on students with diverse backgrounds; validated a 50% improvement in learning rates by algorithmically tailoring lessons to individual needs
- Assessed the effectiveness of artificial intelligence algorithms by building and deploying full-stack data-driven websites on Microsoft Azure, employing React front-ends and Flask back-ends
- Significantly improved runtime and space complexity of tree search algorithms by at least tenfold
- Extended the versatility of algorithms in real-world scenarios, yielding a 10% increase in prediction accuracy

**Graduate Student Handbook Revision Lead**

Aug 2023 – Present

*Rice University Computer Science Graduate Student Association*

*Houston, TX*

- Spearhead a full rewrite of the graduate student handbook, enhancing information about the master's program
- Organize monthly events to allow students to connect with their peers and increase departmental cohesion

**Artificial Intelligence Engineer Intern**

Jun 2024 – Aug 2024

*Delta Air Lines*

*Atlanta, GA*

- Developed an anti-human trafficking chatbot using Amazon Bedrock that allows users to efficiently report potential cases of human trafficking via a front-end built in React. The chatbot generates targeted questions to assess the situation and determine whether any human trafficking flags have been identified
- Performed extensive prompt engineering to design chatbots, ensuring that all generated questions and responses are accurate and unbiased

- Evaluated the impact of using the DPO training algorithm for LLM development, demonstrating runtime improvement despite limited GPU availability
- Led the development of an Angular-based interactive website to showcase 25+ innovative projects, coordinating closely with team managers to ensure its quality for showcasing to shareholders
- Debugged and optimized website performance on a touchscreen display board to guarantee a smooth experience for continuous user interaction

## Jones College Webmaster

Mar 2022 – Dec 2023

*Rice University*

*Houston, TX*

- Redesigned the Jones College website as part of a team of three webmasters to enhance user experience by implementing and organizing code for new widgets and improved website functionality
- Implemented monthly updates on both the front-end and back-end to ensure information is up to date

## TEACHING EXPERIENCE

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### Head Teaching Assistant

Jan 2024 – May 2024

*Rice University*

*Houston, TX*

- Created course materials and exam solutions to ensure content alignment across four course sections
- Led flipped classroom sessions, guiding students through daily problem sets to reinforce course concepts
- Organized and led grading parties for all exams in a course of 180+ students, coordinating logistics for 40 TAs

### Concurrent Program Design Teaching Assistant

Aug 2023 – Dec 2023

*Rice University*

*Houston, TX*

- Designed and tested solutions to programming labs to ensure correctness and adherence to course objectives
- Evaluated solutions for new programming assignments to assist in the launch of a new program design course

### Parallel Programming Teaching Assistant

Jan 2023 – May 2023

*Rice University*

*Houston, TX*

- Introduced students to the fundamentals of parallel programming by hosting weekly office hours to clarify misconceptions regarding parallel programming constructs

### Financial Accounting Teaching Assistant

Jan 2023 – May 2023

*Rice University*

*Houston, TX*

- Provided alternate perspectives on accounting practices to help students gain a more intuitive understanding of financial accounting

### Data Structures & Algorithms Teaching Assistant

Aug 2022 – Dec 2022

*Rice University*

*Houston, TX*

- Oversaw student labs to ensure student comprehension of different data structures and algorithms

### Algorithmic Thinking and Discrete Mathematics Teaching Assistant

Jan 2022 – May 2022

*Rice University*

*Houston, TX*

- Leverage extensive knowledge of data structures and algorithms to host weekly office hours and bridge gaps between theoretical computer science and programming

### Differential Equations in Science and Engineering Grader

Jan 2022 – May 2022

*Rice University*

*Houston, TX*

### Computational Thinking Teaching Assistant

Aug 2021 – Dec 2021

*Rice University*

*Houston, TX*

## SERVICE

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### Computer Science Club Graduate Student Panelist

Sep 2024

*Rice University*

*Houston, TX*

### Head Academic Mentor

Mar 2022 – Dec 2023

*Rice University*

*Houston, TX*

- Maintained program quality by conducting 75+ interviews annually to recruit new academic mentors, ensuring re-commitment of current mentors, and overseeing their training sessions
- Orchestrated biweekly events to promote on-campus program visibility and engagement

### Teaching Fellow

May 2021 – Aug 2021

*Breakthrough Houston*

*Houston, TX*

- Planned and taught Pre-Algebra and piano to middle school students to foster an early love of learning
- Collaborated with teachers and other teaching fellows to ensure teaching materials were effective and engaging