Curtis Ying

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Education

Brown University

*B.Sc. Applied Mathematics and Computer Science (**GPA: 4.00/4.00**)*

Activities & Societies: TA (Computer Systems), Full Stack at Brown (web development), Hack @ Brown, Forecasting Club

Experience

AI Undergraduate Researcher June 2025 – Present

Brown University Lee Lab

- Led and collaborated with a small team researching **multimodal ML-LLM model** to predict operating room (OR) usage time and optimize scheduling, with planned **deployment to Rhode Island Hospital**
- Developed pipelines using Langchain, Transformers, and PyTorch with **AutoEncoder/RAG and RL fine-tuning** for consistent processing of tabular and textual clinical data
- Combined processed text with structured clinical data into downstream **FNN** to create fully trainable end-to-end model

AI and Software Engineering Intern May – August 2025

New Horizon Soft, LLC

- Designed and built customized AI assistant for clients through iterative Scrum/Agile sprints, using LLM technology with Python Langchain and MCP framework to automatically retrieve relevant data from Oracle databases
- Created root-cause analysis algorithm for inventory shortages and surpluses (with Python/SQL) to optimize stock levels
- Integrated projects into production and **reduced time to investigate inventory issues by 60% for Chick-fil-A**

Modeling and Software Development Intern June 2023 – August 2024

New Horizon Soft, LLC

- Developed and implemented an innovative queueing model in Python for inbound delivery scheduling at distribution centers (DCs), **saving client Chick-fil-A 12 hours per week** in planning for 9 DCs supporting **3,000 restaurants**
- Automated weekly delivery balancing by categorizing vendors into priority groups and distributing shipments among available days based on quantity, vendor priority level, inventory processing limits, and holiday schedules
- Published in **peer-reviewed journal** *International Journal of Operations Research and Information Studies*

Projects

AI Google Review Agent **Completed June 2025 | Github**

- Built a Chrome extension featuring a custom AI chatbot and summarizer for Google Maps locations and reviews
- Utilized Qdrant database, Cohere, and **RAG** to retrieve reviews relevant to user queries and generate responses using LLMs, with **Flask server** connecting to Google review database and JavaScript frontend for Chrome Extension UI
- **Decreased search time** on average by over **75%** for summary-based queries and **90%** for custom/complex queries

Website for Brown Opinion Project **Completed April 2025 | GitHub | Demo**

- Frontend developer on teams, polls, and news pages, in collaboration with small team at Full Stack at Brown
- Built animations, mobile-friendly UI components like dropdowns and collapsible sections using **JS**, **CSS**, and **Tailwind**

Publications

Ying, C., & Liebson, M. (2024). An innovative approach to optimize inbound delivery scheduling at distribution centers. *International Journal of Operations Research and Information Systems*, *15*(1), 1-22. https://doi.org/10.4018/ijoris.345920

Recognitions

Brown Math Modeling Competition (BMCM) **November 2024 – January 2025**

- Outstanding Winner out of 22 collegiate teams from Brown, Duke, UNC, OSU, and NC State

MathWorks Math Modeling Challenge (M3C) **March 2023 – April 2024**

- 2024: Semifinalist (Top 2% of 655 teams), Technical Computing Runner-Up
- 2023: Semifinalist (Top 2% of 683 teams), Technical Computing Honorable Mention

International Math Modeling Competition (IMMC) **October 2022 – April 2023**

- Finalist (Top 5 of 16) in USA Regional Round
- High School Mathematics Contest in Modeling (HiMCM) Finalist (Top 7% of 854 teams)

Skills

Languages: Python, C/C++, MATLAB, Java, Go, HTML/CSS, JavaScript, SQL, Swift/XCode, Pyret
Frameworks/Tools: MCP, PyTorch, TensorFlow, React, Pandas, Full Stack, Flask, Docker, Next.js, Node.js, NumPy, Sklearn, Git, OracleSQL, HuggingFace, Assembly (x86), GDB, CUDA