Grace Liu

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Experience

Bloomberg L.P. Current – Aug 2024
Software Engineering Intern - Market Feeds Platform *New York City, New York*

Hudson River Trading Jan 2024 – Jan 2024
Trading and Technology Winter Intern *New York City, New York*

- Implemented a C++ order book tracking events from the BATS market feed (U.S. equities) and matching engine with customized level logic, using company-specific internal market-data processes.
- Developed regression-based signals to live-trade Brazilian equities with data analysis in Python and custom Ordex execution strategy.

Cadence Design Systems May 2023 – Aug 2023
Software Engineering Intern - Data Platform & Machine Learning *San Jose, California*

- Built an end-to-end domain specific chatbot with open-source Large Language Models (LLMs), Python, LangChain, HuggingFace, Node.js, Socket.io, Flask, PostgreSQL to detect and manage incoming data errors from JedAI client application use.
- Designed and implemented RESTful APIs with Axios/Express.js and WebSocket to communicate data transfers between client interface, index server & model server. Created memory chat with SQL database, optimized data ingestion of .md and .html files with Faiss embedding storage to improve query retrieval by 30%.

Princeton University - Department of Computer Science Feb 2023 – Current
Undergrad Course Assistant - Grading Manager *Princeton, New Jersey*

- Selected as one of two sophomore Grading Managers for Data Structures & Algorithms, collaborate with professors and fellow TAs to maintain consistency in grading standards.
- Evaluated and assessed project submissions for over 200 students for COS 226, through reviews of code implementations considering factors such as algorithmic complexity, data structure usage, and overall code design.

Education

Princeton University Expected May 2026
B.S.E in Computer Science (GPA: 3.8/4.0) *Princeton, New Jersey*

- **Minors:** Statistics & Machine Learning, Quantitative Economics
- **Relevant Coursework:** Probability & Stochastic Systems, Economics & Computing (Game Theory), Distributed Systems, Algorithms & Data Structures, Intro. ML, Intro. Programming Systems, Fundamentals of Statistics, Calculus III, Lin. Algebra, Computer Vision, *Optimal Learning, *Regression & Time Series, *Theoretical ML
- **Activities:** HackPrinceton, Competitive Programming Club, ACM, Princeton Women in Computer Science, Society of Women Engineers, AI @ Princeton, Old NasSoul Acapella (Social Chair)

Projects

Stereo Vision-Based 3D Tracking of Table Tennis Ball Trajectories | *Python, OpenCV, RoboFlow*

- Implemented robust table detection methods addressing background clutter using Hough transforms, Canny edge detection, and convex hulls. Trained YOLO-NAS model with RoboFlow on self-collected table tennis data.
- Compared model performance to background subtraction techniques like optical flow. Calculated camera calibration parameters, including intrinsic and extrinsic matrices, for 3D projection.

Eluo: Ingredient Safety Recognition | *React.js, Tessaract OCR, Apache OpenNLP, Javascript, Bootstrap, Flask*

- Developed a responsive web application with React.js and Flask for safety of personal care products using photos of labels, leveraging Tesseract OCR and a Raspberry PI camera module.
- Employed Apache Java OpenNLP models in the backend to categorize potential toxins in ingredients.

Technical Skills

Languages: C++, Python, Java, C, Go
Technologies: React.js, Flask, Express.js, TensorFlow, PyTorch, jQuery, Bootstrap, Flask, Node.js, Docker, Git, Unix, AWS, Firebase
Honors: 2024 D.E. Shaw Discovery Fellow, 3x American Invitational Mathematics Exam (AIME) Qualifier, Scholastic Art & Writing Awards Gold Medalist for Poetry, National Merit Scholarship Recipient
Interests: Word games (crosswords), poetry, fiction, video games