Samuel Liu

Providence, RI

samuel_liu@brown.edu, (978)-760-0595

GitHub: sliu526, LinkedIn: sliu526

Education

Brown University — Providence, RI

Sc.B. Applied Math–Computer Science | GPA: 4.00 — *Expected Graduation: May 2026*

Coursework: Machine Learning, Algorithmic Design and Analysis, Data Structures and Algorithms, Computer Systems, Real Analysis, Honors Statistical Inference I, Differential Equations

Georgia Institute of Technology — Atlanta, GA

B.S. Computer Science, Minor in Mathematics | GPA: 4.00 — *Transferred to Brown University*

Coursework: Python, Java, Database Systems, Object-Oriented Design, Linear Algebra, Discrete Mathematics

Skills and Activities

Programming Languages: Python, Java, SQL, C, C++, Golang, HTML/CSS, JavaScript, TypeScript
Packages: PyTorch, scikit-learn, NumPy, pandas, pydot, Matplotlib, SymPy
Tools and Frameworks: Git, Docker, MySQL, React, Next.js, Tailwind CSS, AWS, Express.js, Firebase
Awards: Georgia Tech Faculty Honors (2023/2024), 4x Debate National Qualifier (2021-2023), NMSQT Finalist (2023), Gold President's Volunteer Service Award (2022), NSDA Academic All-American (2022)

Experience

Full Stack @ Brown — Providence, RI

Software Engineer | JavaScript, TypeScript, HTML/CSS — *Sept. 2024 – Present*

- Built full-stack React and Node.js web application for an independent film group, improving page load time by 40% for 100+ users through optimized Firebase data querying and Express.js user authentication
- Streamlined client-side content management for 20+ team members by integrating a headless CMS, reducing average update deployment time by 60% using 10+ custom REST API endpoints

Deep Learning Playground — Atlanta, GA

Software Engineer | Python, Golang, CSS, TypeScript — *Aug. 2023 – May 2024*

- Managed backend updates in Python and Golang to migrate frontend secrets in AWS Secrets Manager. Increased developer velocity for 20+ developers by ensuring accurate secrets retrieval during build process
- Implemented a frontend to display 6 neural network layers and handle user inputs using CSS and TypeScript, allowing users to train and interact with deep models in a simplified, no-code environment
- Enhanced the navigation bar's responsiveness to screen size changes across devices using CSS

Overbrook Scientific — Acton, MA

Data Analytics Intern | MySQL — *June 2022 – Aug. 2022*

- Designed and implemented database schema changes in MySQL to update outdated contact lists with 100+ columns, implementing 20+ stored procedures and 40+ views
- Researched and compiled pricing models of 10+ competitors via Excel/Sheets under Overbrook's CEO. Developed and proposed adjusted pricing points for 15+ products based on current market conditions

Projects

Car Purchase Decision Tree Predictor | sklearn, NumPy, pandas, pydot — *Oct. 2024*

- Built a recursive decision tree machine learning model from scratch. Incorporated meta-learning with bagged trees, random forests, and AdaBoost, and used pydot to visualize the model and key feature splits
- Cleaned and processed car purchase datasets to train a predictive model with 86% test accuracy

iRobot Maze Solver and Autonomous Delivery | Python — *Dec. 2023*

- Automated iRobot Roomba in Python to solve mazes of any size and deliver objects to specific grid locations, incorporating 20+ fail-safe behaviors and asynchronous functions for simultaneous actions
- Programmed Roomba to avoid obstacles by updating optimal approach path using infrared sensors and automatic navigation readjustments, tested against 20+ new enviroments with 100% accuracy