# Joshua Liu

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I am a rising junior at Brandeis University seeking software engineering internships to apply my skills in computer science and applied mathematics. Driven by curiosity and a passion for problem-solving, I aim to contribute to meaningful projects while expanding my technical expertise.

## EDUCATION

**Brandeis University**                                                                                                  **Waltham, MA**
*B.S. in Computer Science and Applied Math*                                                   *(expected) Class of 2026*
- Cumulative GPA: 3.9, Student-Athlete (2022-2024), Dean's List (Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024)

## RELATED EXPERIENCE

**The Commons XR**                                                                                          **San Diego, CA (Remote)**
*Data Engineer and DevOps Intern*                                                              *June 2024 - September 2024*
- Led standups and optimized data processing and storage in Azure databases for the data manager.
- Designed and implemented a testing environment and automated GitHub Actions CI Workflow, enhancing testing efficiency and code merging.
- Developed code for automated Power BI dashboard refresh for data visualization via Azure Logic Apps increasing efficiency per session by 30%.
- Fixed data consistency issues for the recorded session date in the database to account for certain edge cases the software might have.
- Added a new port in the virtual machine to receive new types of data from the software and managed how the data would be sent to the databases.

**Boston College Computer Vision Research**                                               **Chestnut Hill, MA**
*Research and Software Engineer Intern*                                                       *June 2023 - August 2023*
- Summer research intern under Donglai Wei, a Professor of Computer Vision and Biomedical Image Analysis at Boston College. Contributed to the development of a web app for segmenting and labeling neurons for clients.
- Developed the front end using React.js and the back end with FastAPI to organize high-resolution neuron images. Created functionality for labeling, tagging, renaming, and reverting files for clients.
- Built a React.js feature that enabled users to run multiple visualization tabs. This required backend updates in FastAPI and modifications to support running multiple instances of Neuroglancer simultaneously.

**ProScout.Ai**                                                                                                          **Remote**
*Software Engineer Intern*                                                                        *August 2024 - December 2024*
- Created a React dashboard for clients to streamline system operations, reducing deployment time by 50% and enabling remote control/monitoring.
- Developed and deployed a Raspberry Pi-based camera system for real-time image capture and analysis utilizing OpenCV.
- Designed a scalable and high-performance cloud infrastructure by integrating Google Cloud, BigQuery, and Cloud Functions.

**Brandeis University Machine Learning Research**                                        **Waltham, MA**
*Research Intern*                                                                                   *October 2023 - December 2024*
- Conducting research with Professor Hongfu Liu on enhancing the wrapper method for feature selection by leveraging inference functions.
- Researched facial recognition and machine learning model interpretability under Professor Dylan Cashman (2023- 2024).

## OTHER WORK EXPERIENCE

**TAMID**                                                                                                             **Waltham, MA**
*Software Engineer*                                                                                   *January 2024 - present*
- Developed a Unix Shell and a Persistent Database in C and learned SQL and NoSQL databases as a foundation for future projects.

**TravelMug**                                                                                                         **Boston, MA**
*Software Developer*                                                                                *December 2023 - May 2024*
- Developed a unique coffee recommendation website based on personal preferences and coffee roasting and brewing methods using React.js, Redux, and Firebase.
- Containerized the application with Docker and set up automated testing and deployment with GitHub and Azure.

**Brandeis University**                                                                                          **Waltham, MA**
*Teaching Assistant and Tutor*                                                                     *August 2024 - present*
- Teaching assistant for COSI 12B (Advanced Programming Techniques in Java) responsible for grading and office hours
- Brandeis University Study Group (BUGS) Tutor for COSI 10A (Python), COSI 12B (Java), COSI 21A (Data Structures and Algorithms)

## PROJECTS
- Developing a VS Code comment linter extension that automatically checks and corrects comments as code is updated.
- Built a fully functioning website for University Alumni using Express.js as the frontend, MongoDB as the backend, and Socket.io for chat features.
- Developed a Machine Learning model for Boston housing price prediction using K-means clustering, LASSO regression, and neural networks.
- Built a face detection and recognition system in Python, leveraging singular value decomposition (SVD) for feature extraction.

## RELATED COURSEWORK/SKILLS

Data Structures ○ Operating Systems ○ Algorithms ○ DevOps ○ Java ○ Javascript ○ Python ○ C++ ○ SQL ○ PyTorch ○ Azure ○ MongoDB