Alex Lin

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Education

Brown University Providence, RI

Bachelor of Science in Computer Science, Applied Mathematics | GPA 3.95 *Aug. 2021 – May 2025*

Experience

Research Programmer June 2023 – Aug. 2023

Boston Fusion Corp. *Lexington, MA*

- Implemented a state-of-the-art object detection pipeline
- Enhanced and implemented machine learning models, complete with a tailored API for conducting remote server inferences
- Investigated the application of transformers and masking techniques for novel object detection in images through extensive literature review and experimentation
- Designed the baseline system for Boston Fusion's research proposal to DARPA's broad agency announcement ECOLE (Environment-driven Conceptual Driven)

Data Analyst June 2022 – Aug. 2022

Boston Medical Data Science *Boston, MA*

- Utilized C#, Linq, and AgilityPack to scrape websites, generating a dataset for medical product development
- Managed and automated MongoDB database maintenance, ensuring the timely update of outdated information
- Employed geocoding techniques for semantic matching with street addresses, improving data accuracy
- Conducted statistical and probability-related research on Conditional Random Fields and Word2Vec to enhance semantic matching in phrases

Avionics Lead Sep. 2021 – Present

Brown Space Engineering *Providence, RI*

- Successfully led a 10-person team through research and implementation of the Electrical Power System on a CubeSat
- Designed circuitry for battery charging and management, IO board, and driver board using Eagle CAD software
- Supported the development of embedded control systems for flight software in C

Projects

Squatty | *https://github.com/alex-lin64/Squatty* Aug. 2023

- Implemented squat detection and classification for squat counting
- Enhanced performance with multithreading, achieving near-realtime detection and prediction for Squatty
- Enhanced user experience by connecting an Arduino-controlled water gun to a program countdown for added motivation.

ARCLIGHT | *https://github.com/alex-lin64/object_detection_pipeline* June 2023 – Aug. 2023

- Created an object detection pipeline with built-in analytics for comprehensive model-to-model performance comparisons
- Successfully deployed YOLOv7 and Facebook's Detectron2 using ONNX, Docker, and the Triton Inference Server
- Implemented the validation and visualization software CVAT and Fiftyone for efficient inference
- Collaborated closely with team members to develop and refine the system diagram, ensuring seamless project progress

Shell | *https://github.com/alex-lin64/C-Shell* Oct. 2022 – Dec. 2022

- Modeled and developed a C terminal shell inspired by Bash and Zsh
- Implemented a wide range of traditional shell commands, including cd, ln, rm, fg, and bg
- Introduced advanced features such as signal handling, job list tracking, and multitasking support
- Conducted debugging and resolved issues using GDB and memory examination in Assembly

Technical Skills

Languages: Python, C/C++, Assembly, Java, C#, Scheme, TypeScript, HTML/CSS
Frameworks: Flask, React, Express.js, Node.js, .Net, Pytorch, ONNX
Developer Tools: Git, Docker, VS Code, Jupyter Notebook, Visual Studio, IntelliJ
Libraries: pandas, NumPy, Matplotlib, seaborn