Alex Lin

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Experience

Research Programmer June 2023 – Aug. 2023

Boston Fusion Corp. | *ARCLIGHT Team* *Lexington, MA*

- Enhanced state-of-the-art machine learning models, complete with a custom Python API for conducting remote server inferences
- Implemented a state-of-the-art object detection pipeline in Python for model assessment (PR-Curves, F-1 Score, etc.)
- Deployed model training pipeline through Docker and optimized performance for a 30% decrease in training set-up time
- Investigated the application of transformers and masking techniques for novel object detection through a literature review of 15+ papers

Data Analyst June 2022 – Aug. 2022

Boston Medical Data Science | *Using Technology to Improve Healthcare Operations* *Boston, MA*

- Developed a database model with MongoDB to efficiently query and compute medical records
- Utilized Java for backend development of internal API to link MongoDB database
- Automated the internal MongoDB database maintenance to save 5 hours weekly in database management and ensured the timely update of outdated information
- Conducted statistical research on Conditional Random Fields and Word2Vec to enhance semantic matching in phrases

Avionics Lead Sep. 2021 – May 2024

Brown Space Engineering *Providence, RI*

- Successfully led a 10-person team through the design and implementation of the Electrical Power System on a 3U CubeSat
- Improved upon the previous CubeSat's power collection and distribution efficiency by 40% by implementing maximum power point tracking and point-of-load converters
- Supported the development of embedded flight control systems in C

Projects

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

- Implemented squat detection and classification for squat counting from the ground up using Tensorflow and Mediapipe
- Enhanced performance with OOP design and cython threads, achieving real-time performance
- Enhanced user experience by integrating Arduino-controlled features to improve user satisfaction by 50%

Course Clusters | *https://github.com/alex-lin64/Course-Clusters*

- A distributed and scalable course registration system developed through NodeJS and Javascript and deployed to EC2 instances on AWS
- Designed a core distribution API complete with data sharding, a gossip protocol, and map-reduce
- Designed a course search and registration API complete with 2-phase locking and TF-IDF indexing

Book of Ps | *https://github.com/alex-lin64/Book-Of-Ps*

- Digital recipe repository built on top of a custom hypertext framework
- Developed hypertext linking on text, images, and nodes, complete with user login and sharing akin to Google Docs
- Built on Typescript, React, NodeJs, MongoDB, and Express.js, deployed via Vercel and Render

Technical Skills

Languages: Python, Javascript, Java, TypeScript, Go, C, Bash
Technologies: Docker, Pytorch/Tensorflow, Linux, React, AWS, MongoDB, Node.js, SQL, Git, Jira
Relevant Coursework: Machine Learning, Deep Learning, Data Structures & Algorithms, Computer Systems, Computer Networks, Distributed Systems, Embedded Systems

Education

Brown University Providence, RI

Bachelors of Computer Science | *Teaching Assistant: Machine Learning* | *GPA 4.00* *Sep. 2021 – May 2025*