Brian Liao

Software Engineer

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Education

University of California - Berkeley — *Berkeley, CA*

M.S. in Electrical Engineering and Computer Science (Research Track) — *August 2019 - May 2020*

B.A. in Computer Science — *August 2017 - May 2019*

Experience

Amazon Web Services — *Boston, MA*

Software Engineer Intern — *May 2019 - August 2019*

- Worked on the Elastic File System (EFS) Team which manages a **distributed file system service on AWS.**
- Intern project was to create a testing framework that ensured EFS follows the **NFS Protocol** and would help **identify kernel bugs in Linux and EC2 instances backing EFS.**
- Created framework that could send a **distributed workload to multiple EC2 instances** connected to an EFS file system. Allowed for testing of file input/output, lock management, and load shedding **failover scenarios.**
- Using: Python, Boto3, Argparse, EC2, DynamoDB, EFS, S3

Amazon — *Seattle, WA*

Software Engineer Intern — *May 2018 - August 2018*

- Worked on the Box Team in Amazon Fulfillment Technologies which manages software for **shipping box sizing.**
- Project was designed to address the issue of the **difficulty in debugging incorrectly fitted boxes** resulting in several vague support tickets to my team per week by fulfillment center operations.
- Solved this issue by updating the UI to show **order data** that **explained the box choices** and display **alternative boxes to choose**. This successfully **reduced the number of support tickets** given to my team.
- Scaled in production to handle over **3 million box transactions per day** for items sold on Amazon in **over hundreds of fulfillment centers worldwide.**
- Using: Java, Lombok, JUnit, Mockito, Spring, JSP, AWS, and S3

Berkeley Swarm Lab — *Berkeley, CA*

Computer Vision Researcher — *January 2018 - Present*

- Worked with robotics professor Kris Pister on developing **computer vision and deep learning** for low powered devices and micro-robots.
- Researched both **software and hardware optimizations** to **optimize power performance** of deep neural networks. This included **compressing neural network model sizes** and designing **deep learning hardware accelerators.**
- Previous work included using computer vision and deep learning to do **object detection and localization of drones** under the constraints of **low-powered hardware.**
- Using: Python, PyTorch, Tensorflow, Keras, OpenCV, and Chisel

Skills

Languages — Java, Python, Go, C, OCaml, Rust, SQL, JavaScript, HTML, CSS

Technologies — **Unix, Linux**
AWS: EC2, DynamoDB, Lambda, S3, EFS
Docker, PostgreSQL, Spark

Frameworks — **Java:** Spring, JSP, Guava, Lombok, Log4J, JUnit, Mockito, JMX
Python: Jupyter, Boto3, NumPy, Pandas, PyTorch, TensorFlow, OpenCV

Areas — Cloud Computing, Large Scale Software Systems, Distributed Systems
Machine Learning, Computer Vision