

Julian Ho

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Education

Brandeis University, Waltham, MA

BS in Computer Science

Expected May 2021

Dean's List (Spring '18, Spring '19, Fall '19, Spring '20) CGPA 3.65

Research: *Highly Available Data Storage for Microservices*

Sept 2020 - Present

- Year-long senior research thesis focused on creating a new kind of distributed database (microDB)
- Designed a distributed in-memory relational modular database for microservices use as "side-car" to minimize single-point-of-failure and increase availability guarantees in a distributed architecture

Technical Skills

Languages: Go, Java, Ruby, Python, Scheme, SQL, Bash

Tools: Docker, Kubernetes, GRPC, Grafana, Prometheus, Concourse, Git, AWS Suite, Terraform

Work Experience

Amazon Web Services, Remote

Software Development Engineer Intern - Infrastructure Automation

Jun - Sept 2020

- Three-months full time internship at AWS's Infrastructure Automation team based in Seattle
- Worked on a specialized datacenter inventory management system used for managing over \$64B worth of equipment in 1,800 AWS data centers worldwide
- Designed and implemented a browser-based tool for ingesting new consumable inventory into our management system, with an idempotency guarantee and high availability, built using React.js, Lambda, DynamoDB, and CloudFormation
- Modified existing backend system to support ingesting non-serializable inventory (aka consumables)
- Instrumented consumable tool with Cloudwatch alerts and logging, along with integration and canary tests to assure operational readiness

DigitalOcean, Cambridge, Massachusetts

Cloud Engineering Intern - Network Services

Jun 2019 - May 2020

- Full time summer internship at DigitalOcean, a leading SaaS platform, between June to August 2019
- Designed and implemented a high-performance MAC address generation microservice for regionalized distribution of MAC addresses. The service is capable of generating 10 million unique addresses per second on a dual-core machine
- Implemented a feature that allows a distributed IP address management (IPAM) system to handle the ability to create/destroy floating IP addresses across all 14 data centers globally
- Internship extended into a remotely part-time role from September 2019 to May 2020. The only non-penultimate year Summer Intern offered to return to work for the Network Services team
- Facilitated monitoring/alerting for the rollout of IPAM 1.5, which included a live migration of over 6 million unique private IP addresses to new subnets across all data centers

Lalamove, Hong Kong

Software Engineering Intern - Backend & Infrastructure

Jul - Aug 2018

- Full time summer Internship at Lalamove, the second-largest on-demand logistics startup in Asia
- Refactored the core API service (> 50,000 Loc) for retrieving configuration from PHP to Go
- Investigated and resolved high latency problem in the core MySQL database in production
- Instrumented the Node.js API with Prometheus for improved error analysis
- Designed and implemented a testing tool for creating and running REST tests written in JSON, which supports simulating concurrent users and sequential operations on the database

School Activities

Teaching Assistant - Autonomous Robotics (*Sept 2020 - Present*), Software Engineering For Scalability (*Jan - May 2020*), Data Structures and Fundamentals of Computing (*Sept - Dec 2019*)

Brandeis "DeisHacks" 19" Hackathon - 1st runner-up

Jan 2019