Jimmy Li

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Education

University of California, Berkeley - Berkeley, CA **August 2020 - May 2024**

B.A. Computer Science, GPA: 4.00

Relevant Coursework: Data Structures and Algorithms, Advanced Algorithms, Operating Systems, Database Systems, Computer Architecture, Computer Security, Discrete Mathematics and Probability Theory, Machine Learning

Technical Skills

Languages: Python, Java, Golang, C, C++, PHP, HTML, CSS, JavaScript, TypeScript, SQL

Technologies: Unix, Git, Docker, ReactJS, NodeJS, SQL, NoSQL, GraphQL, Redis, Kafka, PyTorch, AWS, GCP, Kubernetes, Terraform

Experience

Pinterest - Software Engineering Intern **May 2023 - August 2023**

- Re-architected fleetwide SSH public key infrastructure to support host verification and automated root certificate rotation
- Coordinated with cross-functional teams to safely rollout PKI change with no downtime across all servers and laptops
- Implemented backwards compatible ephemeral SSH key and certificate generation into golang client used by all engineers
- Drove performance optimizations including using ssh-agent Unix socket and request parallelization leading to 3x speedup

Crowdstrike - Software Engineering Intern **August 2022 - December 2022**

- Redesigned a core data ingestion golang service processing over 100k QPS from Kafka to use Cassandra over ElasticSearch
- Implemented distributed cache using Redis to support caching new kafka partition key and reduce database writes by 60%
- Engineered full-stack solution to store and view metadata used by cornerstone data ingestion microservices

Pinterest - Software Engineering Intern **May 2022 - August 2022**

- Designed a Python workflow to analyze 15 million daily secret key requests and suggest improved access policies
- Improved observability of secret key usage by sending metrics from golang client used by all machines in the fleet
- Developed web interface to streamline accessing policy suggestions data from S3 using Typescript and NextJS

Relentlo - Software Engineer **August 2021 - May 2022**

- Technical lead responsible for Kubernetes, Kafka, and observability (Prometheus, ElasticSearch, Fluentbit) infrastructure
- Architected a real-time ad exchange in golang handling 3000 requests per second with 200ms latency requirements
- Implemented a write-behind database caching layer, reducing costs by 10x and improving throughput by 5x
- Designed CI/CD pipelines to automatically build, test, upload, and deploy Docker images to Kubernetes

Hatch - Software Engineering Intern **June 2021 - August 2021**

- Improved login flow by integrating Google OAuth as a sign-on provider reducing sign-on to just 1 click in ReactJS
- Integrated user authentication with AWS IAM to secure backend API access with access control levels
- Worked across the full stack with AWS Lambda, Cognito, RDS, and GraphQL to write highly scalable features

California State University, Fullerton - Research Intern **June 2019 - August 2019**

- Researched computational methods of detecting cyber intrusion using machine learning and statistics
- Experimented with decision trees and neural networks, achieving 97% accuracy on the KDDCup'99 dataset
- Designed an algorithm using 3D spatial relations to template and efficiently match motifs in unexplored proteins

Projects

GuessrApp | *ReactJS, NodeJS, Redis, PostgreSQL, Kubernetes*

- Designed a horizontally scalable, real-time song guessing game using Redis as a distributed messaging backbone
- Integrated ReactJS frontend with WebSockets to communicate with NodeJS backend and Spotify API in real-time
- Deployed production application to Kubernetes on GKE with Docker images stored in Google Artifact Registry

Phodexr | *Python, Pytorch, HTML, Javascript*

- Managed a team of 5 to research deep learning approaches for connecting images and text in a zero-shot manner
- Explored large scale pre-training with CLIP and embedding indexing for scalable similarity searching
- Developed and deployed a frontend to interface with multiple models served via FastAPI, allowing anyone to test the models

Activities

UC Berkeley Launchpad - Webmaster and Project Leader **September 2020 - Present**

- Worked with numerous teams to design and deploy machine learning models tackling computer vision
- Optimized website loading times via benchmarks and developed dynamic role management system using Django

Capture the Flag Security Competitions **September 2018 - Present**

- Compete as an application security specialist to find security vulnerabilities in challenging applications
- Finalist in GoogleCTF, DefconCTF, and reported real world vulnerabilities to Google VRP

Awards

DEFCON CTF Finalist **April 2022**