Irvin Lim

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EDUCATION

Brown University　Providence, RI, USA
Master's of Science, Computer Science　*Jan 2019 - May 2020*
GPA 4.0 / 4.0

National University of Singapore　Singapore
Bachelor of Computing (Honours), Computer Science　*Aug 2015 - Dec 2018*
CAP 4.58 / 5.00, Dean's List

EXPERIENCE

Shopee　Singapore
Expert Software Engineer　*Jan 2023 - Present*

- Served as interim team lead responsible to drive project delivery, day-to-day project management and build up processes as the team scaled up to 6 members.
- Drove multiple resource utilization projects across the company, including resource overcommit, idle machine scheduling and online-offline colocation, in order to address several urgent resource shortages and drive massive cost savings.
- Led the unification and standardization of the team's deployments of node-level components running on 20,000+ nodes across 30+ Kubernetes clusters with Argo CD, minimizing toil and reducing total rollout duration by 4x.

Senior Software Engineer　*Jan 2022 - Dec 2022*

- Led the initial rollout for large-scale online-offline colocation within the company, reclaiming idle resource capacity on tens of thousands of Kubernetes nodes to run low-priority batch jobs.
- Designed and implemented Eunomia Agent, a node-level component that governs, monitors and enforces resource isolation between workloads on a single node using the Linux kernel (cgroups, cpuset, resctrl, eBPF).

Software Engineer　*May 2020 - Dec 2021*

- Spearheaded the revamped design of Runonce V2, a Kubernetes-based cron and adhoc job scheduler, including the cluster and federation controllers, REST API, and user interface.
- Successfully rolled out Runonce V2 in the entire company to support millions of job executions per day, replacing an older system based on Rundeck with much improved performance and fault tolerance.

Facebook　Menlo Park, CA, USA
Production Engineer, Intern　*May 2019 - Aug 2019*

- Developed a web service for managing hundreds of production PrestoDB clusters, which replaced the old Presto dashboard with 15x faster load time.

Shopee　Singapore
Software Engineering Intern　*May 2018 - Oct 2018*

- Rewrote a high throughput, Kafka-based transactional email gateway to support exactly-once processing, load balancing and high availability.
- Designed and developed Bromo, an Apache Mesos framework for scheduling and orchestrating container workloads for the entire company.

Banff Cyber Technologies　Singapore
Associate Web Security Developer　*May 2017 - Nov 2017*

- Designed and implemented the WebOrion SaaS WAF using OpenResty, ModSecurity and AWS, and developed the web UI using Vue and Laravel.

Conference Talks

Squeeze Your K8s: How We Adopt Time-Series Forecasting Models in FinOps Practices
KubeCon + CloudNativeCon Europe 2024, Paris

Colocating Hadoop YARN with Kubernetes to Save Massive Costs on Big Data
KubeCon + CloudNativeCon Europe 2023, Amsterdam

Open Source Projects

Furiko: github.com/furiko-io/furiko
Open-source Kubernetes-native cron and adhoc job platform

Skills

- Programming: Go, C, JavaScript, Java, PHP, Python
- Technologies: Linux Kernel, eBPF, Kubernetes, Prometheus
- Languages: English, Mandarin Chinese