

Summary

As an engineering team lead of a startup, I lead the team to build our SaaS product from 0 to 1 and is driven to keep the company growing by offering compelling new features and services to our customers.

I am an experienced Golang developer and built several production services in Golang, and a DevOps engineer with experience in AWS, Terraform, and Kubernetes. To boost the efficiency of the team, I standardized the process of CI/CD, deployment, monitoring, alerting of our services, and shaped the DevOps culture among members.

I love to participate in community activities and also share my knowledge with blogs and technical talks. Currently, I am the co-organizer of the Golang Taiwan community.

Experience

Umbo Computer Vision Inc.

2015 - 2021

Engineering Team Lead

- Team management
 - **Led engineering team of 8 members**
My responsibilities included OKR planning, regular 1-1 feedback, mentoring, sponsoring, and hiring. I committed to build a responsible, transparent and keep-learning engineering team.
 - **Focused on team-wise productivity improvement**
Standardized the development flow, introducing CI/CD and unit testing, adopting Infrastructure-as-code, and shaping DevOps culture in the team.
 - **Cross-team collaboration**
Frequently co-worked with different teams, such as Design, Product and Sales, to help them from different approaches, such as studying competitor, discussing product roadmap, joining customer concalls, etc.
- Architect and engineering
 - **Low latency video streaming service (Golang)**
Designed and developed Umbo's video streaming service on a large scale across multiple regions. It was the core architecture of Umbo and served more than 7500 cameras with below 3 seconds latency.
 - **IoT messaging service (Golang)**
Developed and maintained the core messaging service that provided real-time communication across devices by WebSocket and served all Umbo's cameras across 4 different regions.
 - **Launch a new product - Event Filter (Golang)**
Involved in the completed product lifecycle from market research, competitor studying, product design, development, and launching. Engineering-wise, I implemented 2 gateway services (SMTP and HTTP) and deployed to ECS Fargate with Terraform. As a result, it reduced 83% of false alarms for customers and boosted Umbo's monthly recurring revenue (MRR) by 230%.
 - **Firmware applications development (C/C++)**
Involved in firmware architecture design and development, such as firmware application, designing IPC protocol and service configuration, etc. Designed a flexible cross-platform firmware architecture that helps us to deliver different camera models efficiently.
- Infrastructure and process optimization
 - **Standardized production service deployment**
Standardized a consistent service deployment by using AWS ECS Fargate and Terraform. Different services could use the same way for secret management, log collection, monitoring, tracing, etc. It drastically reduced the loading of operation and speeded up the launch of new services by 300%.
 - **Cross-services tracing solution**
Led and supported the team to build a cross-services tracing by leveraging NewRelic tracing service. It gave us a clear view of end-to-end latency, and we built monitoring and alerting based on the metrics.
 - **Optimize AWS infrastructure costs**
Led and supported the team to continuously optimize AWS costs. I regularly reviewed AWS cost analysis and proposed different approaches, including EC2/Fargate Spot and ARM instance adoption, NAT and cross-zone traffic reduction, S3 lifecycle optimization. As a result, we reduced 54% AWS system cost under the same business scale.
 - **Internal infrastructure administration**
As an AWS architect of the team, I managed shared resources, such as IAM, VPC, purchasing RI/saving plan, building common AMI. I migrated internal services (e.g., Grafana, Sentry, ETL jobs) to EKS by using Terraform and Helm. I also optimized the performance of the log collection pipeline by fine-tuning Fluentd aggregator and ElasticSearch.

Trend Micro Inc.

2013 – 2015

Senior Engineer

- Trend Micro Safe Lock
 - A standalone system lockdown software for fixed-function devices.
 - Developed the backend REST API service.
- Trend Micro Portable Security
 - A malware scanning and cleanup tool for standalone PC or closed system.
 - Designed and developed this product from the fundamental core module to user interface.

CyberLink Corp.

2009 – 2012

Senior Engineer

- Worked on video decoder and new features development for H.264, MPEG2, and VC1.
- Performance tuning with SSE/Intrinsic SIMD optimization.
- Developed hardware decoding for H.264, Motion JPEG decoding using hardware acceleration.

Education

National Chiao Tung University

2007 – 2009

M.S in Computer Science

National Chiao Tung University

2003 – 2007

B.S in Computer Science

Technical Talks

Fuzzy test in Go	COSCUP 2021
Let's talk about testing in Go	COSCUP 2020
Centralized Logging Solution using FireLens and Fluent Bit for ECS	AWS Workshop 2020
How the Go runtime implement map efficiently	Golang Taiwan Meetup 2018
AV1: The next generation video codec	Taiwan Streaming Meetup 2018
Golang execution modes	iThome Gopher Day 2017
Building microservice with gRPC in Golang	Google I/O Extended Taipei 2017

Open Source Projects

lambda-extension-log-shipper | *Golang, Lambda*

- Ship your Lambda logs directly to any destination and bypass Cloudwatch Logs to save cost.
- This is my personal project that works like a log collection sidecar of the Lambda function by using Lambda Logs API.

terraform-provider-aws | *Golang, Terraform*

- A well-known terraform plugin to provision AWS resources.
- Contributed the EKS taint support in the Managed Node Group resource.

telegraf | *Golang*

- A popular opensource metrics collection agent from influxdata.
- Contributed a performance optimization in its AWS Cloudwatch integration.

Skills

Development

- **Languages:** Golang, C/C++, Java, C#
- **Databases:** MySQL, MongoDB, Etcd
- **Protocols:** HTTP, Websocket, gRPC, SMTP

Infrastructure & Operations

- **AWS:** S3, EC2, ECS, EKS, SQS, VPC, IAM, Lambda, EventBridge, Cloudfront, API Gateway
- **Container Orchestration:** Kubernetes, ECS
- **IaC:** Terraform, Helm, Packer, Ansible, Serverless
- **CI/CD:** Jenkins, Github Action
- **Monitoring & Logs:** Telegraf, Prometheus, Grafana, Fluentd, Fluentbit, Elasticsearch, Kibana, New Relic

Multimedia

- **Codecs:** H.264
- **Streaming:** RTSP, HLS, DASH
- **Framework:** FFMPEG, Live555, GStreamer
- **Acceleration:** DxVA, SIMD