

Anurag Rath

SITE RELIABILITY ENGINEER · SOFTWARE ARCHITECT

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"Be the change that you want to see in the world."

Summary

DevOps Engineer at fintech & blockchain company Dunamu which is known for operating Upbit, the largest cryptocurrency exchange in Korea. Have led growth at infrastructure departments in two fintech companies as lead engineer and founding member. 12+ years of diverse software engineering experience with specialties in software architecture design, infrastructure operation, backend development, and security engineering.

Love to contribute to open sources and tech communities by sharing knowledge and experience. Prefers a command line interface environment as a big fan of Vim, Linux, and macOS. Always trying to customize to find the most optimal environment. Interested in devising a better problem-solving method for challenging tasks, and learning new technologies and tools.

Work Experience

Grenud

React Developer

Seoul, S.Korea

Sep. 2023 - Present

Danggeun Pay Inc. (KarrotPay)

FOUNDING MEMBER & SITE RELIABILITY ENGINEER & INFRASTRUCTURE TEAM LEAD

Seoul, S.Korea

Mar. 2021 - Jun. 2023

- Everything that matters.
- Designed and provisioned the entire infrastructure on the AWS cloud to meet security compliance and acquire a business license for financial services in Korea.
- Continuously improved the infrastructure architecture since launching the service. (currently 3.6 million users)
- Established a standardized base for declarative management of infrastructures and service deployments, enabling operational efficiency and consistency. Over 90% of AWS resources were all managed through standardized terraform modules. All add-ons and service workloads on the Kubernetes cluster were managed on a GitOps basis with Kustomize and ArgoCD.
- Saved over 30% of the overall AWS costs by establishing a quarterly purchasing strategy for RI (Reserved Instance) and SP (Savings Plan) and by introducing Graviton instances.
- Established a core architecture for regulating of outbound DNS traffic in multi-account and multi-VPC environments utilizing AWS Route53 DNS Firewall and FMS. This significantly increased the level of security confidence in the financial sector's segregated environment.
- Introduced Okta employee identity solution in the company, establishing security policies and configuring SSO integration with over 20 enterprise systems including AWS, GitHub, Slack, Google Workspace. Set up a Hub and Spoke architecture, enabling a collaborative account structure with the parent company, Daangn Market.

Danggeun Market Inc.

SITE RELIABILITY ENGINEER

Seoul, S.Korea

Feb. 2021 - Mar. 2021

Kasa

FOUNDING MEMBER & DIRECTOR OF INFRASTRUCTURE DIVISION

Seoul, S.Korea

Jun. 2018 - Jan. 2021

- Designed on-boarding process to guide new engineers, help them to focus on the right tasks, and set expectations to help them be successful at Infrastructure team.
- Migrated the orchestration system from DC/OS to Kubernetes which is based on AWS EKS. Managed 3 Kubernetes clusters and 300+ pods. Managed all Kubernetes manifests declaratively with Kustomize and ArgoCD.
- Designed and managed complex network configurations on AWS with 4 VPC and 100+ subnets. Separated the development network and operation network according to financial regulations. Established dedicated network connections from AWS VPC to partners' on-premise network based on AWS Direct Connect with secure connection using IPsec VPN. Provisioned OpenVPN servers with LDAP integration.
- Provisioned a observability system with Kafka, Elastic Stack(Filebeat, Heartbeat, APM Server, Logstash, Elasticsearch, Kibana). Collected log, uptime, tracing data from hosts, containers, pods and more. The ES cluster which has 9 nodes processed more than 1 billion documents per month. Wrote Terraform module to easily provision ES cluster on AWS EC2 instances.
- Provisioned a monitoring system with Kafka, Telegraf, InfluxDB, Grafana. Collected metrics from hosts, containers, pods and more. Wrote Terraform module to easily provision InfluxDB with HA on AWS EC2 instances.
- Introduced Kong API Gateway to easily connect all API microservices with a declarative management method based on Terraform and Atlantis to collaborate and audit change history.
- Provisioned the Directory Service for employee identity management based on OpenLDAP which guarantees HA with multi-master replication.
- Implemented Worker microservices consuming Kafka event topics for email, SMS, Kakaotalk and Slack notification. Developed in-house framework to easily build Kafka consumer microservice with common features including retry on failure, DLQ(Dead Letter Queue), event routing and more.
- Introduced Elastic APM to help distributed tracing, trouble-shooting and performance testing in MSA.

Omnious. Co., Ltd.

Seoul, S.Korea

SOFTWARE ARCHITECT

Jun. 2017 - May. 2018

- Provisioned an easily managable hybrid infrastructure(Amazon AWS + On-premise) utilizing IaC(Infrastructure as Code) tools like Ansible, Packer and Terraform.
- Built fully automated CI/CD pipelines on CircleCI for containerized applications using Docker, AWS ECR and Rancher.
- Designed an overall service architecture and pipelines of the Machine Learning based Fashion Tagging API SaaS product with the micro-services architecture.
- Implemented several API microservices in Node.js Koa and in the serverless AWS Lambda functions.
- Deployed a centralized logging environment(ELK, Filebeat, CloudWatch, S3) which gather log data from docker containers and AWS resources.
- Deployed a centralized monitoring environment(Grafana, InfluxDB, CollectD) which gather system metrics as well as docker run-time metrics.

PLAT Corp.

Seoul, S.Korea

CO-FOUNDER & SOFTWARE ENGINEER

Jan. 2016 - Jun. 2017

- Implemented RESTful API server for car rental booking application(CARPLAT in Google Play).
- Built and deployed overall service infrastructure utilizing Docker container, CircleCI, and several AWS stack(Including EC2, ECS, Route 53, S3, CloudFront, RDS, ElastiCache, IAM), focusing on high-availability, fault tolerance, and auto-scaling.
- Developed an easy-to-use Payment module which connects to major PG(Payment Gateway) companies in Korea.

R.O.K Cyber Command, MND

Seoul, S.Korea

SOFTWARE ENGINEER & SECURITY RESEARCHER (COMPULSORY MILITARY SERVICE)

Aug. 2014 - Apr. 2016

- Lead engineer on agent-less backtracking system that can discover client device's fingerprint(including public and private IP) independently of the Proxy, VPN and NAT.

ShitOne Corp.

Seoul, S.Korea

SOFTWARE ENGINEER

Dec. 2011 - Feb. 2012

- Developed a proxy drive smartphone application which connects proxy driver and customer.
- Implemented overall Android application logic and wrote API server for community service, along with lead engineer who designed bidding protocol on raw socket and implemented API server for bidding.

Honors & Awards

INTERNATIONAL AWARDS

2021	2nd Place , AWS ASEAN AI/ML GameDay	Online
2020	Finalist , DEFCON 28th CTF Hacking Competition World Final	Las Vegas, U.S.A
2018	Finalist , DEFCON 26th CTF Hacking Competition World Final	Las Vegas, U.S.A
2017	Finalist , DEFCON 25th CTF Hacking Competition World Final	Las Vegas, U.S.A
2014	Finalist , DEFCON 22nd CTF Hacking Competition World Final	Las Vegas, U.S.A
2013	Finalist , DEFCON 21st CTF Hacking Competition World Final	Las Vegas, U.S.A
2011	Finalist , DEFCON 19th CTF Hacking Competition World Final	Las Vegas, U.S.A

DOMESTIC AWARDS

2021	2nd Place , AWS Korea GameDay	Seoul, S.Korea
2015	3rd Place , WITHCON Hacking Competition Final	Seoul, S.Korea
2017	Silver Prize , KISA HDCON Hacking Competition Final	Seoul, S.Korea
2013	Silver Prize , KISA HDCON Hacking Competition Final	Seoul, S.Korea

COMMUNITY

- 2022 - **AWS Community Builder (Container)**, Amazon Web Services (AWS)
- 2022 - **HashiCorp Ambassador**, HashiCorp
- 2018 - **Organizer of HashiCorp Korea User Group**, HashiCorp

Certificates

- 2023 **AWS Certified Advanced Networking - Specialty**, Amazon Web Services (AWS)
- 2022 **AWS Certified Security - Specialty**, Amazon Web Services (AWS)
- 2022 **AWS Certified Solutions Architect – Professional**, Amazon Web Services (AWS)
- 2021 **AWS Certified SysOps Administrator – Associate**, Amazon Web Services (AWS)
- 2020 **Certified Kubernetes Application Developer (CKAD)**, The Linux Foundation
- 2023 **HashiCorp Certified: Consul Associate (002)**, HashiCorp
- 2023 **HashiCorp Certified: Terraform Associate (003)**, HashiCorp

Education

POSTECH(Pohang University of Science and Technology)

B.S. IN COMPUTER SCIENCE AND ENGINEERING

Pohang, S.Korea

Mar. 2010 - Aug. 2017

- Got a Chun Shin-Il Scholarship which is given to promising students in CSE Dept.