Kevin Mok

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Work Experience

Red Hat

May 2020 — Aug 2021

Cloud/Software Engineer Intern <Kubernetes, GoLang, Jenkins>

- **Reduced deployment time by 66%** by implementing a solution for deploying locally-compiled binaries onto Kubernetes/OpenShift via command-line, **cutting average deployment times from 45 minutes to 15 minutes**. (**Kubernetes/GoLang** used for this and three below).
- **Eliminated 80% of manual configuration errors** by enabling the Kubernetes operator to automatically fetch data from deployed services and update configurations, **deprecating legacy startup scripts and reducing overall startup time by 40%**.
- **Improved application stability** by introducing startup probes for legacy applications with longer boot times, **resulting in a 50% reduction in startup-related failures and downtime during production launches**.
- **Enhanced system reliability** by refactoring probes to assign default values dynamically based on deployed YAML files and fixing reconciliation issues, **increasing probe accuracy by 30%** and preventing misconfigurations.
- **Increased CI pipeline efficiency** by rewriting the **Jenkins (Groovy)** nightly pipeline to run in a GitHub PR environment, allowing for automated testing of all team-submitted PRs prior to merging, **reducing manual intervention by 60%**.
- **Increased project reproducibility** by taking initiative to write a reusable GitHub parameters file for the pipeline, **enabling 100% reusability** and ensuring consistent pipeline setups across different environments.

Projects

AWS Server <AWS, Kubernetes, Docker, Terraform> May 2024

- **Deployed and maintained multiple web applications** using **Docker Compose** on **AWS EC2 Debian/Linux servers**, ensuring consistent environments for applications handling **over 2,000+ monthly requests**.
- **Automated AWS infrastructure provisioning** by writing **Terraform** files to deploy AWS EC2 instances and Docker containers, **accelerating deployment times by 80%** and providing an easily reproducible infrastructure setup.
- **Improved web application accessibility** by configuring **AWS Route 53**'s DNS and **NGINX** to route subdomains to individual web apps, **enabling seamless navigation between apps**.
- **Built a uptime monitoring system** by writing a JavaScript script and setting up a systemd service/timer to check and display page uptime, **ensuring near real-time monitoring and reducing downtime time by 95%**.
- **Enhanced data resilience** by automating regular backups using Amazon EBS snapshots, ensuring **99.9% uptime and data integrity** by creating consistent and reliable backups, **reducing potential data loss by 95%** in disaster scenarios.

Rarity Surf <Python, Django, JavaScript, React> Oct 2021

- **Developed a full-stack web application** to generate rarity rankings for NFT's integrated with leading NFT marketplace's (OpenSea) API, enabling users to **quickly identify rare NFT's** and check their listing status, **improving market research efficiency by 80%**.
- **Architected a robust Django (Python)** backend to fetch and process NFT metadata from IPFS, store rarity rankings in **PostgreSQL**, and serve the data via GraphQL API, **ensuring low-latency access and scaling to handle 2,000+ concurrent requests**.

Skills

Python, **Django**, **JavaScript**, **React**, Node.js, PostgreSQL, MongoDB, Bash, **Git**, **Linux**, **Command Line**, Go(Lang), AWS, Kubernetes, Terraform, Docker (Compose), Jenkins, Groovy, Solidity, C

Education

University of Toronto (St. George)

2019 — 2024

Computer Science Specialist — 3.84 GPA (CS). Graduated with High Distinction.

References

See my LinkedIn for references from my Red Hat managers/mentee, a startup client and a graduate student mentor.