Jake Cook

Software Engineer

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Skills

Languages Python, Bash, Java, Go, JavaScript (Node.js, Vue.js, Angular, D3.js), SQL, C# (dotnet), Kubernetes YAML

Tools Linux (Ubuntu/Debian, Alpine, RedHat), AWS, Kubernetes (K8s), OpenShift, Docker, Jenkins, Grafana, Kafka, PostgreSQL, MySQL, MongoDB, ActiveMQ, LaTeX, Angular, ZMQ, GraphQL

Experience

Space Dynamics Laboratory

Logan, UT

Software Engineer

Jun. 2021 - Present

- Team lead transitioning a monolith application to a fully-containerized, Kubernetes managed microservice architecture on AWS GovCloud.
- SME for third-party platforms used by internal and external government partners; Interfaced with technical and non-technical teams for design planning and technical debugging to ensure mission success.
- Developed & documented automation scripts & tools in python & bash for repeatable workflows, systems testing, & benchmarking.
- Updated & maintained Jenkins servers for CI/CD pipelines and designed adaptable next-gen pipelines for microservice AWS architecture.
- Developed and maintained tools based around VSCode Devcontainers to allow for quick, portable, system full testing and development on any developer workstation (C#, Angular, k8s).
- Designed, developed, deployed, & maintained applications for Kubernetes, OpenShift, and EKS environments, including Helm charts and extensive documentation facilitating deployment repeatability.
- Composed and presented charts and technical presentations to many stakeholders, targeting various levels of technical proficiency.
- Developed cross-organization understanding in leveraging key technologies for performance-optimized workflows, including container management (Docker, Kubernetes), messaging technologies (Kafka, ActiveMQ), and databases (PostgreSQL, MySQL, MongoDB).
- Integrated with small team to become program experts in DoD DevSecOps practices, expanding SME role.

Space Dynamics Laboratory

Logan, UT

Assistant Software Engineer

Apr. 2020 - May. 2021

- Designed & implemented a dockerized GIS platform using open source tools & projects for customer integration.
- Contributed security & other general bug fixes to SPOONsite, an open source SmallSat web application, & provided customer support (project ported to NASA S3VI).
- Assisted a customer with data research, visualization, & reporting.
- Designed & implemented a new web application with an Agile team using PostgreSQL, Scrapy, Python, Javascript (Node.js, Nuxt.js) & Tailwind-css.

Projects

Home Server

- Built and configured a server with Ubuntu and multiple RAID arrays and automated offsite cloud backups; Configured DNS + TLS network connections to a local reverse proxy.
- Documented configurations and developed scripts to quickly deploy multiple Docker managed applications to any similar server configuration.

Data Sidecar

- Ongoing development of a k8s sidecar project to ingest any data over standardized communication protocols which can be injected at pod deploy time.
- Developing in C++ and Go to compare to legacy Java implementation as part of a general trade study on performance vs development gains in each language, including focus on resiliency.

System Checkout Application

Identified key validation components which best validate when a new deployment is operational, then developed a robust Python application which leverages various APIs, Docker, and robust logging with human-in-the-loop validation steps to allow anyone to quickly validate a deployment.

Education

Utah State University

Logan, UT

Bachelor of Science in Computer Science

May 2021