Gerald Spencer

Multi-dimensional engineering leader passionate about:
Culture Building, Observability, Reliability and Scalability
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Experience

2022 - Present **Cruise - Staff Site Reliability Engineer Technical Lead Manager (TLM)**

As a Staff Site Reliability Engineer TLM at Cruise, I led a six-person team in enhancing our software deployment strategies, focusing on technical and measurable improvements. Our major initiative was implementing an advanced release attestation packaging system, which streamlined deployment processes and reduced times by 40% through optimized package verification and distribution. We also established a robust deployment pipeline governance framework, improving deployment accuracy by 30% and compliance adherence by 25%. This involved integrating real-time monitoring and automated quality checks. The development of a centralized user interface resulted in a 35% increase in deployment efficiency, simplifying process management for engineers. Additionally, we created command-line tools that accelerated deployment actions, achieving a 50% increase in speed. These technical advancements significantly boosted Cruise's operational capabilities in the transportation sector.

2021 - 2022 **Skydio - Engineering Manager - Infrastructure/Site Reliability**

At Skydio, I led a team in reshaping our enterprise autonomous drone platform's infrastructure and operational processes, directly supporting 200 engineers. My team and I successfully achieved SOC 2 Type 1 compliance by executing a comprehensive overhaul of Skydio's cloud infrastructure within three quarters. We established an effective Incident Management process and on-call systems, significantly improving service reliability for both internal and external customers. A notable achievement was the integration of Kubernetes into our development lifecycle, which streamlined deployment and application management. We transformed legacy deployments to automated, container-based systems, cutting deployment time from 2 hours to 15 minutes. Additionally, we enhanced our Continuous Integration system to handle 5000 builds a day across 2500 ephemeral workers, supported by a Python-based backend worker pool management platform I developed. These efforts collectively elevated Skydio's technological capabilities and operational efficiency in the drone industry.

2019 - 2021 **Strateos - Director of Infrastructure (Merged with 3Scan)**

At Strateos, I led the expansion and modernization of robotic cloud drug discovery labs, scaling the infrastructure from one to four facilities across two continents. I collaborated with the Product team to devise an infrastructure roadmap, supporting our growth targets. My leadership in revamping legacy build systems resulted in a 13x reduction in build times, substantially accelerating feature development. I initiated a multi-account AWS configuration using Terraform, integrating legacy AWS accounts and transferring workloads efficiently across regions. Leading multidisciplinary teams, I transitioned our CI systems to a cloud-native, elastic framework

and spearheaded the shift to automated CI/CD deployments to Kubernetes with an SRE team, enhancing deployment efficiency. We implemented a comprehensive cloud-native observability platform, and I established SSO via Okta for all mission-critical systems. A key achievement was designing and implementing a programmatically defined global transit network, optimizing our multi-region, multi-cluster Kubernetes setup. Throughout my tenure, I provided mentorship in architecture, CI/CD, infrastructure, and networking, significantly bolstering Strateos's capabilities in digital cloud lab technology.

2013 - 2019 **3Scan - Director of Production Engineering**

At 3Scan, starting as a mechanical engineer, I led the development of a multi-petabyte imaging platform and oversaw a diverse 15-member team, including hardware and software engineers, biologists, and product specialists, to create a high-resolution, high-throughput 3D medical imaging system. I spearheaded a software engineering team to design and implement a system with a 24GB/s imagery ingestion rate. A major accomplishment was redesigning the storage pipeline from a large-scale bare metal Ceph deployment to a cloud-native object store backend, ultimately achieving a capacity of 3.8PB. I also played a crucial role in integrating a facility with the AWS cloud, facilitating a 40Gbps leased fiber connection from AWS (us-west-2) to downtown San Francisco. This project led to 3Scan's official recognition by ARIN, the acquisition of a publicly addressable /24 block of IPv4 space, and the establishment of BGP routing systems with two ISPs and AWS for efficient imagery routing into S3. These efforts significantly advanced 3Scan's capabilities in handling and processing large-scale medical imagery.

Technical Experience

Software/System Design

Production ready systems should be modular, composable, reliable and operation on the principle of least surprise.

Extensive experience with the following:

- **Build systems**: Bazel, CMake, Gradle, Lerna, Maven, Tox, Poetry
- **CI/CD**: ArgoCD, AWS CodePipeline, Buildkite, CircleCI, Jenkins, Github Actions, GoCD, Tekton, Travis
- **Cloud Infrastructure**: All things compute, networking, storage, security, AI/ML related to AWS or GCP
- **Configuration Management**: Ansible, Puppet, Terraform
- **Containers/Micro-services**: Docker, ECS, jib, Kubernetes, Lambda, KNative, Kubeless
- **Development Environments**: AWS Cloud9, Docker, Eclipse Che, Gitpod, Intellij, Vagrant
- **Edge Computing**: Akri, Balena Cloud, ioFog, AWS Greengrass, AWS IOT Core
- **Identity Management**: Active Directory, Okta
- **IT/Networking**: Managed 3Scan's AS, BGP peering with multiple ISPs and AWS. Cisco/JunoOS you name it!
- **Languages**: Bash, Python, Java, Go, Javascript, .Net, Node, Python, Scala, Typescript
- **Observability**: ELK, Grafana, Prometheus, Sumologic, Splunk
- **Operating Systems**: At home in any flavor of linux, MacOS and windows
- **Service Mesh**: Consul, Istio, LinkerD

Engineering Management

Engineering is fundamentally a creative task, and the job of a strong Leader is to maximize people's ability to get the thing they want to do done.

- **Agile methodologies**: Applied to both software and hardware
- **Project management**: From gantt charts and QFDs to task management, OKRs and KPIs
- The customer experience is key, dog-fooding is a must
- Have overseen complex multi-disciplinary teams from 2 to 15 engineers
- Deeply enjoy seeding an engineering culture that will meet the future organization needs

Education

BSc, Mechanical Engineering W/ USCG License

- *California Maritime Academy (Vallejo, CA)*
- *Licensed United State Coast Guard 3rd Assistant Engineer*

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