Gerald Spencer

Multi-dimensional engineering leader passionate about:
Automation, CI/CD, Community Building, Devops, Kubernetes and Networking

Education

2010-2014 **BSc, Mechanical Engineering W/ USCG License**

California Maritime Academy (Vallejo, CA)

Licensed United State Coast Guard 3rd Assistant Engineer

Experience

2019 - Present **Strateos - Director of Infrastructure**

Designing, developing, implementing and operating the robotic cloud drug discovery labs of the future.

- Actively worked with Product to strategically develop the Eng.Org's infrastructure roadmap to meet future growth targets
  - One facility to four facilities across two continents
- Revamped legacy build systems:
  - Decreased build times by 13x and drastically increased the org's feature velocity
- Bootstrapped a multi-account AWS configuration from scratch with full infrastructure-as-code (terraform)
  - Seemlessly assimulated legacy pre-merger AWS accounts, and transferred workloads between accounts and regions
- Lead multi-diplinary teams in converting legacy monolithic CI system(s) to a modern cloud native elastic CI system
  - Modern elastic Jenkins backed by full configuration-as-ccode and GitOps methodologies
- Lead an SRE team in shifting manual legacy bare metal deployments to fully automated CI/CD deployments to Kubernetes
  - Self-service and self-healing HA multi-cluster ArgoCD deployment
- Implemented, maintained and operated a cloud native observability platform comprised of: Prometheus, grafana, alertmanager, sumologic and pagerduty
- Implemented SSO via Okta for all mission-critical systems - from baremetal auth to internal apps to AWS to Eat Club
- Desgined and implemented a global transit system, by utilizing AWS transit gateways to:
  - Dynamically reconfigure the global network multi-region multi-cluster kubernetes footprint with local facilities via BGP peering

  - Provide a secure intranet for employees across the country, in Singapore, France and contractors in India
- Provided mentorship and training across the teams with respect to: architecture, CI/CD, infrastructure and networking

2015 - Present **Flux Foundation - Lead technologist**

A small arts collective that builds large art, which is shown at Burning man and numerous festivals around the country

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

Oversaw a multi-disciplinary team of 15 - from hardware to software engineers, and biologists to product specialists - to develop a high-resolution/high-throughput 3D medical imaging system.

- Lead a team of software engineers in designing, developing and implementing a system capable of ingesting 24GB/s of imagery
  - Redesigned the original storage pipeline from a massive bare metal Ceph deployment to a cloud native objectstore backeend that reached a max size of 3.8PB
- Merged a facility with the AWS cloud by executing a build out with 40Gbps of leased fiber from AWS(us-west-2) into downtown SF
  - Lead the effort for 3Scan to become officially recognized by ARIN
  - Acquire publically addressable /24 block of IPv4 space
  - Owned and operated BGP routing systems with two ISPs and AWS to route imagery into S3

10/2018 - 9/2019 **The Folly - Electrical and Lighting lead**

- Development of structure's power distribution and electrical layout
- Exterior and interior lighting design

1/2018 - 9/2018 **Temple Galaxia - Project Manager | Lighting lead**

- Engineering project management between 3 timezones
- Oversaw a crew of 7 individuals from electrical engineers to artists
- Development of structures electrical schematic to CA Title 24 standards
- Lighting design: Custom PCB circuit boards, manufacturing and layout
- Custom software architecture and compute hardware to control 1200 addressable incandescents light bulbs

1/2016 - 10/2016 **Black Rock Lighthouse Service - Lighting lead**

- Oversaw an electrical team of 3 individuals
- Development of structures electrical schematic to CA Title 24 standards
- Fire design: Custom fire effects protocol via GRPC, Linux and network installations
- Lighting design: Custom protocol for DMX over Ethernet to wirelessly modulate Color Kinetix

4/2011 - 4/2013 **Taylor Collaboration - Engineering Intern:**

Orthopedics bio-mechanical testing facility working with the medical industry to redesign and improve total knee and hip replacements

- Validated the improvement of a new method for a tibial tubercle osteotomy
- Designed a test setup to simulate humans striking their hip during falling in normal gait

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**: Bassel, Gradle, Lerna, Maven, Tox, Poetry
- **CI/CD**: ArgoCD, AWS CodePipeline, Buildkite, CircleCI, Jenkins, GoCD, 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, Docker Swarm, ECS, Kubernetes, Mesos, Lambda, Kubeless, Severless
- **Development Environments**: AWS Cloud9, Docker, Intellij, Vagrant
- **IT/Networking**: Manage 3Scan's AS, BGP peering with multiple ISPs and AWS. Cisco/JunoOs you name it!
- **Languages**: Bash, C, C++, Groovy, Java, Javascript, .Net, Node, Python, Scala, Typescript
- **Monitoring/Telemetry**: Centralized logging, Elk, Grafana, Graphite, Prometheus, Sumologic, Splunk
- **Operating Systems**: At home in any flavor of linux and windows
- **Testing**: Junit, PyTest, ScalaTest
- **Version Control**: Git, Github, Gitlab, Phabricator

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

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