

VINCENT ALLEN

Principal Platform Engineer / Infrastructure Architect

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SUMMARY

Infrastructure platform leader who sets technical direction across teams and owns production outcomes. 15 years designing distributed platforms, HPC clusters, and cloud-native systems across biotech and scientific computing—writing production software in Go, Python, and TypeScript alongside the Terraform and Kubernetes that runs it. Track record of driving architectural decisions at organizational scale, building self-service platforms that multiple teams depend on, and leading through influence rather than authority.

EXPERIENCE

Senior Systems Engineer

June 2023 – Present

STEMCELL Technologies Canada Inc. | Vancouver, BC

Platform Engineering – SpEKS Application Platform

- Designed and built SpEKS, a 6-component internal platform (FastAPI API, Go CLI, Next.js UI, Go validator, Kustomize GitOps registry, Terraform EKS module) that replaced manual deployments with self-service delivery of 20+ scientific web apps—reducing deploy time from days to minutes.
- Implemented hybrid CRUD + GitOps architecture (DynamoDB cache + Git source of truth, FluxCD reconciliation, ShinyProxy Operator) enabling continuous delivery with full audit trail and one-click environment promotion.
- Built a Go-based validator and scaffolder that enforces platform standards, auto-generates boilerplate for 4 app types, and runs fleet-wide diagnostic checks—eliminating a class of deployment failures before they reach production.

Infrastructure & Cloud Architecture

- Architected multi-environment AWS infrastructure (EKS, ECS/Fargate, multi-AZ VPC, DynamoDB, ElastiCache, EFS, FSx ONTAP) across 3 Terraform Cloud workspaces, serving as the foundation for all MBBG applications and pipelines.
- Authored 5 reusable Terraform modules and 11 shared GitLab CI/CD templates adopted across every project in the monorepo—standardizing provisioning and cutting new-project setup from weeks to hours.
- Implemented observability stack (Prometheus metrics, Grafana dashboards, Loki log aggregation, CloudWatch alarms) with SLO-based alerting for 20+ production applications, enabling sub-10-minute MTTR for platform incidents.
- Maintained 18 hardened container base images with Trivy CVE scanning gates, non-root execution, and immutable tagging—achieving zero critical vulnerabilities in production containers.

Bioinformatics & Scientific Computing

- Built a 7-stage bioinformatics pipeline (Illumina GTC to CNV detection) on AWS Step Functions + Batch with 4 parallel analysis stages—processing sample batches that previously required manual orchestration across 9 containers.
- Deployed production Slurm HPC clusters (AWS ParallelCluster) with FSx ONTAP, GPU scheduling, and SlurmDBD/Aurora accounting for capacity planning and chargeback reporting across research teams.
- Developed self-service portals (CRO data upload via Cognito + S3, Electronic Lab Notebook with 28-table schema) that enabled external partners and internal scientists to operate independently without engineering intervention.

Developer Experience & Operations

- Integrated Okta SSO, Active Directory, and Kubernetes RBAC into a multi-tenant platform with team-scoped access—enabling 20+ data scientists to deploy and manage their own applications without infrastructure tickets.
- Designed multi-stage GitLab CI/CD pipelines (lint, build, security scan, deploy) with pull-based GitOps delivery, achieving consistent automated promotion from staging to production with rollback in under 5 minutes and measurable improvements in deployment frequency and lead time.

Senior DevOps Engineer

Dec 2015 – May 2023

Zymeworks Inc. | Vancouver, BC (Hybrid)

HPC & Scientific Computing

- Designed and operated autoscaling HPC clusters on AWS and on-prem (SGE/Slurm) for computational drug discovery, supporting 50+ researchers running molecular dynamics and ML workloads across hundreds of CPU and GPU nodes.
- Containerized scientific applications (molecular modeling, protein engineering) and integrated them with HPC schedulers, reducing environment setup from days to a single container pull.
- Managed hybrid cloud storage migration (on-prem NFS/Lustre to S3/EFS) for petabyte-scale research datasets while maintaining cross-environment access for active computational workflows.

Infrastructure & Delivery

- Developed Terraform modules and Ansible playbooks for reproducible HPC provisioning, enabling consistent compute/network/storage environments across AWS and on-prem.
- Built CI/CD pipelines (GitLab CI, Jenkins) automating container builds and infrastructure delivery —led the team’s adoption of GitOps-driven IaC, improving deployment reliability and enabling auditable rollbacks.
- Implemented cost controls (reserved instances, spot fleets, right-sizing) and capacity planning, reducing annual cloud spend by 30% while maintaining availability SLAs for research workloads.

Systems / DevOps Engineer

Jun 2011 – Dec 2015

Aretas Sensor Networks | Kelowna, BC (Hybrid)

- Designed and deployed AWS infrastructure for an IoT monitoring platform serving thousands of sensor devices with CouchDB time-series ingestion.
- Built autoscaled, Git-deployed web server platform (Tomcat, WordPress on EC2) and automated OS image pipelines for SBC-based monitoring hardware.

Earlier Experience

Consulting Systems Engineer, Geographic Research Inc. | New York, NY (Remote)

Jan 2009 – May 2011

Senior Systems Engineer, Hastings Entertainment / Great Canadian Gaming | BC

Dec 2006 – Sep 2009

SKILLS

Languages	Go, Python, TypeScript, Bash, PowerShell, HCL (Terraform), SQL, R
Cloud & IaC	AWS (primary: EKS, ECS, Lambda, Step Functions, Batch, VPC, DynamoDB, RDS/Aurora, S3, EFS, FSx, Cognito, KMS, WAF, SSM, ECR), Azure (VMs, networking, storage), Terraform Cloud
Kubernetes	EKS, Karpenter, FluxCD, Kustomize, Helm, External Secrets, RBAC, CRDs
HPC	Slurm, AWS ParallelCluster, SGE, GPU scheduling, MPI, EFA, FSx ONTAP/Lustre
CI/CD	GitLab CI/CD, GitHub Actions, FluxCD, ArgoCD, Docker, Trivy
Frameworks	FastAPI, Next.js / React, Cobra (Go CLI), Streamlit, Prisma
Data	PostgreSQL, RDS/Aurora (PostgreSQL/MySQL), DynamoDB, SQLite, Redis, CouchDB
Observability	Prometheus, Grafana, Loki, ELK Stack, CloudWatch, DORA metrics
Security	Okta SSO/OIDC, Active Directory, IAM/IRSA, KMS, WAF, Cognito
Certifications	AWS Solutions Architect (in progress)