Andrew Vincent O'Connor

Senior Site Reliability Engineer
AI Security, Multi-Cloud & ML Infrastructure

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Summary

Senior Site Reliability Engineer focused on AI security, regulated ML infrastructure, and multi-cloud platform engineering. 10+ years in software and infrastructure engineering, with recent work securing PHI-processing medical AI systems across AWS and GCP in HIPAA, SOC 2, HITRUST, and FDA quality-controlled environments. Hands-on experience with private model endpoints, AI governance and coding-agent guardrails, keyless workload identity, CI/CD supply-chain hardening, GPU training infrastructure, petabyte-scale medical image de-identification, and production observability.

Experience

Senior Site Reliability Engineer

March 2024 - Present | Imagen Technologies

- Own secure deployment, reliability, performance, and cloud infrastructure for FDA-approved AI medical devices processing PHI in HIPAA, SOC 2, HITRUST, and FDA quality-controlled environments.
- Architected a petabyte-scale GCP medical image de-identification pipeline using Cloud Dataflow, batched SQL updates, right-sized workers, and Parquet manifests; reduced run costs ~75% from ~$356K to ~$90K while supporting compliant AI training data preparation.
- Productionized fine-tuned vLLM inference on AWS by packaging 100GB+ Docker images, publishing via GitHub Actions, and deploying isolated SageMaker model containers with no public internet exposure for PHI-bearing inference traffic.
- Provisioned secure 256-GPU NVIDIA H100 Slurm training infrastructure on GCP with private subnet isolation, firewall controls, encrypted shared storage, access/job logging, and Terraform-managed infrastructure for production AI research.
- Established enterprise AI governance and coding-agent safety controls across Claude, Claude Code, GitHub Copilot, and Cursor by deploying Claude Apps Gateway, enforcing engineer-level spend limits and access controls, requiring read-only credentials and PR/Atlantis workflows, and blocking secrets, PHI, destructive Terraform, and mutating AWS CLI actions.
- Introduced governed Terraform-based IaC for previously manually managed GCP environments, using EKS-hosted Atlantis and GCP Workload Identity Federation to enforce PR review, least-privilege access, and keyless cross-cloud deployments.
- Strengthened ML/cloud vulnerability and supply-chain security with AWS Inspector/ECR scanning, Snyk, Dependabot, Terraform/IaC scanning, CVE remediation, hardened AMIs/containers/EC2 instances, immutable patching pipelines, and SHA-pinned GitHub Actions.

Site Reliability Engineer

August 2022 - March 2024 | Imagen Technologies

- Created reusable Terraform modules adopted across 20+ AWS accounts to standardize CloudWatch dashboards, GitHub Actions OIDC federation, AWS Lambda infrastructure, and AWS Verified Access endpoints for the broader engineering organization.
- Led OIDC-based AWS authentication rollout across ~10 GitHub Actions repos, replacing stored AWS keys with short-lived federated credentials, repo/branch-restricted IAM trust policies, least-privilege access, branch protection, CODEOWNERS, required reviews, and separated Terraform plan/apply workflows.
- Implemented zero-trust access for sensitive internal applications using AWS Verified Access and Okta, replacing VPN-based access for Tableau and Terraform drift detection tools used by approximately 20–30 users.
- Built centralized observability, alerting, uptime dashboards, and incident runbooks for ~30 production systems across 3–4 teams using CloudWatch, Okta-secured access, and PagerDuty, improving incident visibility and MTTR.
- Supported security investigations by helping the security team locate and analyze relevant CloudWatch Insights, CloudTrail, AWS Security Hub, and production telemetry logs.
- Automated AWS operational workflows with Step Functions, Lambda, and Systems Manager for EC2 patching and production operations; extended Terraform CI/CD across AWS/GCP, modernized the EKS delivery platform to reduce cost by ~83%, and built immutable image pipelines for reliable releases and patch management.

Technical Consultant

February 2021 - August 2022 | Philips

- Installed and configured the PerformanceBridge radiology analytics platform and supporting systems across Linux and Windows Server environments for healthcare customers in multiple regions.
- Resolved complex customer concerns and technical issues through deep investigation, research, and reproduction.
- Automated recurring configuration tasks, created procedural documentation, and provided training to colleagues, improving operational consistency and onboarding.
- Supported product expansion into EMEA and APAC through client implementations and technical configuration for organizations including:
  - medneo GmbH
  - King Faisal Specialist Hospital Saudi Arabia
  - Chiba University Hospital

Software Engineer

March 2020 - February 2021 | Azenta / Brooks Life Sciences

- Built high-performance cloud-based applications for biobanking and laboratory automation.
- Won employee Key Strategy award for contributions to COVID-19 projects.
- Streamlined COVID-19 testing and reporting workflows, increasing efficiency and reducing errors for global biobanking processes.
- Designed a sample lineage interface for the UK NHS COVID-19 system, enabling the processing of hundreds of thousands of tests per week.
- Developed a sample normalization workflow for Curative Korva Labs, which conducted 20% of all tests in California, and integrated with state and local public health departments for reporting results.

Software Engineer

December 2017 - February 2020 | RURO Inc

- Built Rails-based software for clients including Roche and the National Institutes of Health.
- Reduced sample turnaround times for multiple clients from weeks to hours.
- Designed integrations with hardware devices and external systems including:
  - Scientific instruments (ASTM E1394)
  - Billing interfaces (HL7)
  - Payment systems (Stripe)
  - EHR/EMR systems (Epic)
  - Insurance preauthorizations

Senior Associate

June 2016 - December 2017 | Avalere Health

- Designed and built analytics tools for the post-acute care industry.
- Built web scrapers to collect plan data from state health insurance exchanges.
- Rebuilt a Tableau-based product using open-source software and on-demand cloud solutions, lowering costs by 50%.

Junior Software Engineer

June 2015 - May 2016 | RURO Inc

- Designed and developed a medical sample inventory application for an Android RFID reader.
- Integrated with hardware devices including:
  - Barcode readers
  - Signature pads
  - Robotic freezers

Education

Towson University

January 2010 - December 2012 | Towson, MD

Bachelor of Science in Computer Science

Skills

AI / ML Security & Infrastructure

AWS SageMaker, vLLM, private AI inference, no-egress model containers, Claude Apps Gateway, enterprise AI governance, AI coding-agent guardrails, Amazon ECR, AWS Bedrock Data Automation, Slurm, NVIDIA H100, GPU training infrastructure, medical imaging foundation models, de-identification pipelines

Cloud Security / Zero Trust

AWS PrivateLink, VPC endpoints, private subnets, security groups, IAM least privilege, KMS, AWS Verified Access, Okta, GCP Workload Identity Federation, cross-cloud role mappings, workload identity, access controls

Application / Supply Chain Security

AWS Inspector, ECR image scanning, Snyk, Trivy, Dependabot, Terraform/IaC scanning, CVE remediation, hardened Linux AMIs, hardened containers, hardened EC2 instances, immutable image pipelines, SHA-pinned GitHub Actions

Infrastructure as Code / CI/CD

Terraform, Atlantis, CloudFormation, Ansible, GitHub Actions, CodeBuild, EC2 Image Builder, CircleCI, OIDC federation, GCP Workload Identity Federation, branch protection, CODEOWNERS, required reviews, governed multi-cloud infrastructure delivery

Observability / Incident Response

CloudWatch dashboards, CloudWatch Insights, CloudTrail, AWS Security Hub, PagerDuty, monitoring, alerting, uptime dashboards, incident response runbooks, production telemetry, reliability engineering

Backend / Data

Python, Ruby, PostgreSQL, Nginx, GCP Dataflow, GCS, AWS Lambda, Step Functions, Systems Manager, Docker, Linux

Healthcare / Compliance

HIPAA-regulated systems, SOC 2, HITRUST, FDA quality controls, PHI, medical imaging data, radiology workflows, clinical document processing, HL7, Epic, laboratory workflows

Certs

AWS Certified Solutions Architect - Associate

credly.com

Projects

drumroll.world website

drumroll.world
Explore drumming history visually

Languages

English
Native

Spanish
Native