

**SYNOPSIS**

Senior Software Developer fascinated by infrastructures, networks, and security.

**TECH USED**

**Recently:** Python, Terraform, Amazon Web Services (AWS), Kubernetes, Golang, Apache Kafka, SQLite, PostgreSQL, GitLab. **Previously:** Scala, Clojure, JavaScript, C#, C/C++, PHP, RethinkDB, MongoDB, Datomic, ElasticSearch.

**SELECTED EXPERIENCE**

**Auvik Networks** R&D / Platform and Infrastructure (DevOps): *Senior Software Developer* 2018-07 - Present  
(2022-04), *Intermediate Software Developer* (2021-04), *Software Developer* (2018-07)

- Consulted by R&D teams on best known practices on a variety of topics.
  - Security: allowing external resource access, writing into resource X from account Y.
  - Infrastructure: which database best fits X workload?; how do we create resource Y in AWS?; workload X is degraded, can you help investigate?
  - Cost and finance: are we being charged correctly by our AWS reseller?; how much are we spending per product segment in development and production?; are there any savings opportunities?
  - Continuous Integration/Continuous Delivery: can we speed our builds up?; how do we deploy this to Kubernetes?; should I use a StatefulSet or Deployment?
- Led projects to upgrade our infrastructure and tooling, keeping us up-to-date with security fixes and features.
  - Python et al., 2.17 to >=3.8; Kubernetes et al., 1.10 >=1.22; Terraform et al., <0.10 to >=1.0
- Created and maintained internal projects for managing infrastructure as code.
  - Made wrappers around our CLI tools, reducing errors via misconfiguration and accidental modification.
  - Reduced/removed said wrappers once certain tools (kOps, Terraform) matured.
  - Scaled our tooling and processes to work with >10 AWS accounts spread across >5 regions, mitigating various large-scale outages.
- Implemented authn+authz best known practices for Auvik's cloud infrastructure.
  - Maintained our WireGuard VPN setup for accessing development and production environments.
  - Wrote AWS IAM policies to allow developers to safely access development and production environments.
  - Wrote Kubernetes Roles and RoleBindings for authorizing access, authenticating using client certificates.
  - Switched Identity Providers from Google to Okta for our internal tools/support website. This made onboarding/offboarding easier and authorization to be granted on day 1.
- Implemented Continuous Integration/Continuous Delivery across the R&D team, multiple times in various ways.
  - Migrated from Atlassian Bamboo to Jenkins. Jenkins gave developers access to more ways to develop and deploy their software, and was easier to manage.
  - Once available, migrated from Jenkins to GitLab CI/CD. The Jenkins integration suffered from observability. Moving to GitLab allowed developers to more easily debug their development lifecycle.
- Was on the on-call rotation from 2018-01 to 2022-04 in addition to my role.

R&D / Data Acquisition: *Software Developer* (2017-10) 2017-10 - 2018-07

- Improved the range of our device support.
  - Wrote and maintained parsers for terminal output (e.g. parse the output of `show arp` across different devices).
  - Extended our strategies for identifying device features, including functions, make, and model using SSH/Telnet, SNMP, MAC Address, mDNS.
  - Correct data gained from devices (e.g. decode non-standard SNMP records).
- Implemented a specialized logging system to debug SSH/Telnet sessions on live devices, allowing both R&D and Support to understand why functionality on a device is not supported.

**CENX (acquired by Ericsson)** R&D: *Software Developer* 2016-05 - 2017-09

- Reduced external lookups within hot loops of data processing.
- Added support to use multiple LDAP servers for authentication.
- Wrote parsers to map data from external systems into our data model (stored in Datomic and ElasticSearch and in-memory).
- Maintained the team's demo infrastructure, reducing backend toil and instability.
- Improved developer workflow by writing `docker-compose` manifests to run services locally.

**Prior experience available upon request.**

**EDUCATION**

**Carleton University** Bachelor of Computer Science: Computer and Internet Security, Honours

*Thesis:* FrankenSSL: Recombining Cryptographic Libraries to Create Software Variants

*Supervisor:* Dr. Anil Somayaji