Lucas Lawrence

Senior Software Engineer

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Links

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EXPERIENCE

Canoga Perkins, Chatsworth - *Lead Software Engineer*

JAN 2024 - PRESENT

- Architecting and delivering a cloud-native Network Management System (NMS) using Java, gRPC, and Kubernetes.
- Defined clear domain boundaries and ownership for core services: Inventory, Topology, Virtual Circuits, and Alarms, following Domain-Driven Design (DDD) principles.
- Introduced standardized observability stack (Prometheus, Grafana, Loki) and secured service-to-service communication using mTLS and SRV discovery.
- Mentored engineers and promoted code quality and ownership.
- Coordinated delivery across product and QA to ship reliable features at pace.

Canoga Perkins, Chatsworth - *Senior Software Engineer*

NOV 2021 - JAN 2024

- Extended ONOS (Open Network Operating System) to support engineered virtual circuit provisioning across SDN-controlled topologies.
- Implemented virtual circuit path computation using Object-Oriented design patterns and Dijkstra's algorithm, enabling precise control over service routing and protection paths.
- Developed WebSocket-based messaging between ONOS and the Angular-based web UI to provide live updates on service state, path computation results, and topology changes.
- Collaborated with UI engineers and systems testers to ensure responsive, operator-friendly workflows in production environments.
- Integrated with device abstraction layers and simulation tools to validate provisioning flows across diverse hardware targets.

Canoga Perkins, Chatsworth - *Software Engineer*

NOV 2018 - NOV 2021

- Contributed to development of ONOS-based SDN controller for telecom applications, including service provisioning workflows and topology modeling.
- Built internal testing frameworks and automated regression flows for the Bell Interface Module.
- Collaborated with hardware teams to integrate software stack with custom telecom hardware.
- Developed and extended Angular-based admin UI components for configuration and monitoring.
- Supported early efforts toward virtual circuit modeling, laying groundwork for future engineered path provisioning.

SKILLS

Languages:
Java, TypeScript, Python, SQL

Frameworks & Libraries:
Spring Boot, React, Angular, Node.js

Cloud & Infrastructure:
Kubernetes, Docker, Helm, MicroK8s

DevOps & Tools:
Git, GitLab CI/CD, Prometheus, Grafana, Loki

Protocols & APIs:
gRPC, REST, NETCONF

Methodologies:
Agile (Scrum, Kanban), Test-Driven Development (TDD), Domain-Driven Design (DDD)

Projects

GitLab Management Portal *(React, TypeScript, GitLab API)*

- Designed and implemented a custom project planning dashboard to visualize GitLab epics, features, and issue dependencies as an interactive issue tree with Gantt chart overlays.
- Enabled milestone filtering, drag-and-drop scheduling, and progress tracking by integrating GitLab metadata, blockers, and due dates.
- Helped leads and managers align scope, resolve blockers, and coordinate roadmap execution across teams.
- Supported PDF export, swimlane views, and recursive dependency rendering for scalable planning across large GitLab groups.

PATENTS

Method and System for Network-Level Synchronization of Low Latency Packet Transmission

U.S. Patent No. 11985054 – Granted **May 14, 2024**

Co-inventor of a system to minimize end-to-end latency in packet-switched networks by synchronizing queue transmission windows across multiple switches using measured link delays, spanning tree analysis, and scheduling offset alignment. Developed as part of Canoga Perkins' time-sensitive networking (TSN) initiatives for ultra-low-latency applications.

EDUCATION

University of California, Los Angeles June 2016
Electrical Engineering B.S

University of Miami May 2020
Computer and Electrical Engineering, M.S