

Experience

EducationPlannerBC

Lead Full-Stack Developer

Victoria, BC

July 2021-Present

- Migrated the migration of a post-secondary application service from IdentityServer4/.NET MVC with React to Next.js, enhancing performance, accessibility, and developer productivity
- Architect system-wide design patterns and technical standards across frontend, backend, and infrastructure teams, establishing best practices for the broader engineering organization
- Identified and resolved critical performance bottlenecks causing system failures under load, using k6 load testing and database optimizations to increase max supported concurrent users from 3 to 250
- Designed and developed event-driven services for processing applications using Go, NATS JetStream, and MSSQL
- Integrated the BC Services Card digital ID to streamline user signup and auth with secure, government verified credentials
- Led development of cross-functional projects, serving as the engineering point of contact with product, design, and leadership; accelerating delivery and quality by conducting technical interviews, hiring and mentoring 8 new developers

Eddyfi Technologies - Inuktun

Electrical Engineering Co-op

Nanaimo, BC

Jan-Apr 2020

- Designed high voltage power distribution hardware for submersible remotely operated vehicles
- Authored design documentation, technical references, testing plans, and standard operating procedures for ROV systems
- Standardized a system for flashing microcontroller configurations, reduced device misconfigurations by 10%, reduced waste of critical components with long lead-times, derisking large orders and saving ~12 QA hours/month
- Manual software QA and triaged issues in Azure Boards, identified critical issues and improved release quality

Projects

Code samples, demos, and additional information available at github.com/liamcoop

Distrace: Distributed tracing backend for correlating OpenTelemetry spans into complete traces

Go
Kafka
OpenTelemetry

- Built a correlation engine that assembles out-of-order spans from multiple services using TraceID-based grouping and parent-child relationship resolution
- Implemented intelligent trace completion strategies with 30-second inactivity timeouts and 5-minute maximum age limits to balance completeness with memory management
- Designed event-driven architecture consuming OTLP protobuf messages from Kafka, processing spans through goroutines and channels with backpressure handling

Rules Engine: Custom rules evaluator, predefine your schema and evaluation criteria, then pass in your facts and get results

TypeScript
Next.js
PostgreSQL

- Uses a Common Expression Language (CEL) to process arbitrary user defined schemas, rules, and facts
- Supports custom schemas and validation rules.

Education

B.Eng., Electrical Engineering

University of Victoria

2015-2020

Skills

Languages

TypeScript, JavaScript, Go, C#, C++

Frontend

Next.js, React, Redux, TanStack Query, TailwindCSS, Storybook, Jest, Vite/Webpack

Backend & Infrastructure

OAuth2, IdentityServer4, REST APIs, Kubernetes/k8s, Goose, Prisma, OpenTelemetry

Databases & Search

MSSQL, PostgreSQL, MeiliSearch

Messaging

Kafka, NATS JetStream

Other Tools

Git, Docker, k6, Figma, Azure Boards

Spoken Languages

English (native), French (fluent)