




# Andre Arcaina

 andrearcaina  andrearcaina  andrearcaina.vercel.app

## Technical Skills

**Languages:** Go, Python, Java, C, C++, JavaScript, TypeScript, SQL, GraphQL, Bash

**Tools & Infrastructure:** GCP, AWS, Docker, Kubernetes, NATS, RabbitMQ, Postgres, Redis, MongoDB, GitHub Actions

**Frameworks:** FastAPI, Django, React.js, Next.js, Spring Boot, gRPC

## Work Experience

### Environment and Climate Change Canada (ECCC)

June 2025 – Present

*Software Engineer Intern*

*North York, ON*

- Reduced workflow triage and debugging time by 80% by developing a Go-based control plane with an SSE observability stream, eliminating manual log searches and providing real-time file state tracking.
- Accelerated onboarding for a 3-person team by reverse-engineering an undocumented C++ system, mapping its core structure to provide a clear, easy-to-follow blueprint for future development.
- Modernized internal R&D tooling by replacing a legacy VB6 application with a structured Python/PyQt GUI, implementing Graylog compatible structured logging and secure pycopg SQL queries to process 50,000+ row product datasets.
- Standardized 8 legacy enterprise Java components to Java 17 and Jakarta EE 10, resolving over 300 compiler warnings and replacing deprecated APIs during the migration.

### Undergraduate Science Society of TMU (USSTM)

Jan 2025 – Present

*Backend Engineer*

*Toronto, ON*

- Engineered a contract-first backend API in Go powering platform services for the undergraduate science student body, leveraging SQLc for type safety and OpenAPI to enforce strict definitions across 32+ endpoints.
- Built S3-based image storage with presigned URLs to support secure, horizontally scalable before and after item image uploads.
- Implemented a Redis-backed Async worker to asynchronously process queued email jobs and deliver notifications via AWS SES.
- Developed 37+ unit/integration tests achieving 85%+ code coverage, preventing regressions in core business logic.

### DataKinetics

May 2024 – Aug 2024

*Software Engineer Intern*

*Ottawa, ON*

- Engineered Spring Boot REST APIs bridging legacy mainframe systems with modern web applications, automating COBOL-to-JSON transformations for 10+ enterprise clients.
- Built an interactive data inspection dashboard using jQuery and DataTables, enabling non-technical stakeholders to explore complex copybook structures without manual parsing.
- Designed comprehensive Postman test suites achieving 70%+ code coverage across all mainframe REST API systems.

## Projects

### Fafnir, Distributed Paper Trading Platform | Go, gRPC, Docker, Kubernetes, NATS, PostgreSQL, Redis

GitHub

- Architected a distributed trading simulation in Go using GraphQL, gRPC and NATS JetStream, coordinating 8+ microservices to sustain 1,600+ RPS across 5,000 concurrent users with 0% failure (P95: 42ms, Avg: 7ms).
- Orchestrated production-grade networking using Kubernetes and Helm, integrating a full observability stack with Prometheus, Loki, and Grafana, enabling real-time visualization of RPC latency, error rates, and distributed logs across all services.
- Reduced external market data latency by 98% (~800ms to ~10ms) by implementing request coalescing and tiered Redis caching to handle high-frequency data spikes.

### ShopEcho, Agentic AI Merchant Platform | Shopify (Remix, Polaris), Python, FastAPI

GitHub | Devpost

- Built an autonomous Shopify app using Remix and Polaris that integrates AI-powered brand agents into the Shopify admin, winning two sponsored awards at UofTHacks 2026 (TwelveLabs – 3rd Place, Backboard.io – Runner-Up).
- Orchestrated concurrent workflows combining multimodal AI (TwelveLabs video understanding) and LLMs (Gemini/Opus) to autonomously generate brand-safe marketing assets from raw footage.

## Education

### Toronto Metropolitan University (TMU, formerly Ryerson University)

Sept 2022 – Present

Bachelor of Science (Honours), Computer Science (Co-op)

Toronto, ON

**Relevant Coursework:** Data Structures and Algorithms, Database Systems, Computer Networks, Operating Systems, Software Engineering, Software Project Management, UNIX, Object Oriented Programming, Web Applications