# Andre Arcaina

linkedin.com/in/andrearcaina | github.com/andrearcaina | andrearcaina.me

## Technical Skills

**Languages:** Go, Python, Java, C, C++, C#, TypeScript, JavaScript, SQL, GraphQL
**Frameworks/Libraries:** Spring Boot, Flask, FastAPI, Django, React, Next.js, TailwindCSS, JPA, SQLAlchemy
**Tools:** Git, Bash, Jenkins, Docker, Kubernetes, GCP, Vercel, PostgreSQL, MySQL, MongoDB, Redis, Postman
**Concepts:** Microservices, REST/gRPC APIs, CI/CD, Cloud Computing, Agile/Scrum, System Design, Automated Testing

## Work Experience

**Environment and Climate Change Canada (ECCC)**                           June 2025 – Present
*Software Engineer Intern*                                                    *North York, ON*

- Engineered a Spring Boot microservice for geospatial telemetry, integrating Redis caching to reduce query latency by 98.3% (523ms to 9ms) for frequently accessed data, enabling faster real-time processing of ice monitoring datasets.
- Modified and documented a legacy C/C++98 ETL pipeline for Synthetic Aperture Radar (SAR) satellite data, mapping end-to-end data flows across decoding, calibration, and encoding modules to support system modernization.
- Optimized GeoTIFF and JPEG generation workflows, reducing conversion latency by 40% (5 to 3 seconds per file).
- Modernized 8+ Java 1.8 codebases to Jakarta EE 10, refactoring 5,000+ LOC and resolving 1,200+ compiler warnings.
- Developed Python GUI tools using PyQt for visualizing and validating iceberg datasets across multiple models.
- Integrated PostgreSQL database operations with psycopg2, enhancing data access performance and validation logic.

**Undergraduate Science Society of TMU (USSTM)**                            Jan 2025 – Present
*Backend API Engineer*                                                        *Toronto, ON*

- Built and maintained 27+ API endpoints across 3 PostgreSQL databases following CLEAN principles for testable code.
- Developed 37+ unit, mock integration, and end-to-end tests to ensure reliability and correctness of business logic.
- Defined OpenAPI YAML specifications and implemented RESTful API endpoints for core backend services.

**DataKinetics**                                                            May 2024 – Aug 2024
*Software Engineer Intern*                                                    *Ottawa, ON*

- Developed Spring Boot APIs that automated COBOL-to-JSON conversions, improving data interoperability.
- Built front-end visualization features with DataTables and jQuery for uploaded copybooks.
- Designed comprehensive Postman API test suites to validate endpoints and streamline QA workflows.

## Projects

**Fafnir** | Go, PostgreSQL, Redis, Docker, Kubernetes, NATS, gRPC, GraphQL, Prometheus, Grafana        GitHub

- Engineered a distributed stock-trading simulation platform using Go microservices with REST/gRPC inter-service communication, GraphQL API Gateway, database-per-service design, and Pub/Sub (NATS) for event orchestration.
- Integrated a Redis caching layer to reduce FMP API calls and improve response times by 98.7% (790 ms to 10 ms).
- Developed DevOps workflows with Docker, Makefile automation, and monitoring using Prometheus and Grafana.

**Vivid Fitness** | Python, Django, Supabase (PostgreSQL), WebSockets, React.js/Next.js, TailwindCSS        GitHub

- Led a 5-person team to build a membership and finance management system for fitness clubs, earning highest possible grade in Intro to Software Engineering course at TMU.
- Developed secure Django REST APIs with JWT authentication and real-time messaging using Django Channels.

**Whisp** | Go, NeonDB (PostgreSQL), Docker, WebSockets, Alpine.js, TailwindCSS        GitHub | Live Site

- Designed a concurrent WebSocket architecture with hub-based client management and message broadcasting.
- Deployed via multi-stage Docker builds and GitHub Actions CI/CD, hosting on Render with GHCR.

## Education

**Toronto Metropolitan University (TMU, formerly Ryerson University)**        *Sept 2022 – Present*
Bachelor of Science (Honours), Computer Science (Co-op)                        Toronto, ON
**Involvements:** Backend Lead @ PACS, Backend Engineer @ USSTM, Web Developer @ TMUCSA
**Relevant Coursework:** Data Structures, Algorithms, Operating Systems I, Database Systems I, Computer Networks I