

Henri Cerio-Cain

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EDUCATION

Dalhousie University

Halifax, NS

Bachelor of Computer Science

Expected Sep 2026

Relevant Coursework: Data Structures, Software Engineering, Operating Systems, Algorithms

Member, Dalhousie Computer Science Society

SKILLS

- **Languages & Frameworks:** TypeScript, JavaScript, React, React Native, Python, Java, C, SQL, HTML/CSS, FastAPI, Android (Java, XML, MVVM)
- **ML & Optimization:** PyTorch, Hugging Face Transformers, Model Fine-Tuning (LoRA/QLoRA), GPU Optimization (FP16/TF32, mixed precision)
- **Tools & Platforms:** Firebase, Git, GitLab CI/CD, Android Studio, Google Colab, Cloudflare, Uvicorn
- **Practices:** Test-Driven Development (TDD), Domain-Driven Design (DDD), Clean Architecture

PROJECTS

Domyn (Expected Release: Oct 2025)

Founder & Developer

Jan 2025 – Present

- Independently developing a full-stack React Native fitness tracking app, handling all aspects including UI/UX design, frontend development, backend architecture, and Firebase integration for real-time data synchronization and user authentication.
- Building a real-time workout tracking system with complex multi-level state synchronization between local and Firebase, implementing live timers, optimistic UI updates, and hierarchical data reconciliation for seamless user experience during active workouts.
- Architected a constants management system eliminating all hardcoded strings across 50+ components, ensuring type-safe Firebase operations and production-validated extensibility patterns for scalable development.

DalTutor

Personal Project

May 2025 – Sep 2025

- Rebuilt an Android tutoring marketplace with Java, MVVM, and Firebase (Auth, RTDB, Functions, FCM), delivering a production-ready app with real-time availability, secure registration, and tutor tools.
- Implemented campus discovery and payments with Google Maps/Places search, faceted filters, and PayPal checkout, persisted bookings and receipts in Firebase via atomic multi-path writes and role-based Security Rules, enabling one-tap booking and payment.
- Built a Reddit-style Community tab on Firebase RTDB/FCM with threads, replies, stars, push, moderator tools, and CI tests (JUnit/Espresso), ensuring authorized and conflict-safe content.

HenriAI

Personal Project

Dec 2024 – Aug 2025

- Fine-tuned a 6B parameter GPT-J model using LoRA adapters and 4-bit quantization (QLoRA) on a single A100 GPU, reducing memory usage by ~75% while adapting the model to personal datasets.
- Built a custom PyTorch training pipeline with Hugging Face Transformers, incorporating dataset preprocessing, gradient checkpointing, AdamW optimization, and cosine learning rate scheduling to enable efficient large-scale model training.
- Deployed the model to a live website by engineering a FastAPI inference server with Uvicorn and Cloudflare tunnelling, exposing REST endpoints with authentication and CORS controls for real-time text generation.

ADDITIONAL

Languages: French and English (fluent), Cebuano (intermediate)

Certifications: New Brunswick French Oral Proficiency - Advanced