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 and Algorithms
> Member, Dalhousie Computer Science Society

SKILLS

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

PROJECTS

Domyn (Expected Release: Oct 2025)
Founder and Developer Jul 2025
- 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 constant management system eliminating all hardcoded strings across 50+ components, ensuring type-safe Firebase operations and production-validated extensibility patterns for scalable development.

DalTutor
Software Engineering, Dalhousie University Apr 2025
- Independently rebuilt an unfinished group project into a full Android tutoring marketplace app, re-architected with Java, MVVM, and Firebase to handle authentication, data storage, and real-time updates.
- Developed core marketplace features: integrated Google Maps SDK for location-based tutorial discovery and PayPal checkout, with bookings and receipts securely stored in Firebase.
- Added a community module: Reddit-style Threads with posts, replies, starring, and real-time notifications; implemented moderation tools and ensured reliability with CI-gated JUnit/Espresso test coverage.

HenriAI
Personal Project Dec 2024
- 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 Certificate — Advanced