

Karl-Alexandre Michaud

karlthedeveloper.tech | linkedin.com/in/karlmichaud | github.com/Karl-Michaud

EDUCATION

University of Toronto

Toronto, Ontario, CA

Honours Bachelor of Science, Computer Science (Focus in Computer Systems), Mathematics Sep 2023 – Dec 2027

- **Relevant Coursework:** Operating Systems, Parallel Programming, Data Structures & Algorithms

EXPERIENCE

Software Engineer Intern

May 2026 – Present

Boost Collective (Startup)

Toronto, Ontario, CA

- Engineered and scaled platforms serving **50K+ independent artists** and processing **1M+ streaming data points**, shipping **172 merged PRs** and **316K+ code additions** across three production services in **3 months**
- Built and owned **Music Ads (93%** of the subsystem), growing the product from **\$0 to \$4.4K MRR (\$53K ARR)** within its first two weeks by engineering Stripe subscriptions, fulfillment automation, and tooling
- Rebuilt Boost's failing music-distribution platform protecting a **5,725-subscriber (\$2.76M ARR)** business serving **20K+ artists**, architecting a transactional DSP pipeline using **DDD** and **hexagonal architecture**
- Reduced customer-dashboard load time by **85% (17.6s to 2.46s)**, cutting **32%** of main-thread JS and achieving **72ms INP** by eliminating request waterfalls, route-gating tracking pixels, and resolving Safari rendering bugs
- Increased abandoned-cart recovery revenue by **310% (\$4.9K to \$20.1K/month)** and restored visibility into **\$110K/month** by rebuilding the CRM attribution pipeline, CAPI tracking, and lifecycle automation

Software Engineer

Sep 2025 – May 2026

saycamel.com

Toronto, Ontario, CA

- Built and scaled a full-stack event discovery platform serving **950+ users** and **5.3k+ monthly visitors**, connecting students to **1400+ UofT clubs** and **240+ weekly events** using **React**, **TypeScript**, and **Supabase**
- Engineered end-to-end **ticketing and payment infrastructure** using **Stripe**, implementing **webhook-driven** purchase flows, Supabase **Edge Functions**, and database triggers for reliable real-time payment processing
- Led a team of 3, **owning** the club dashboard development and **collaborating** with cross-functional teams to design and deploy **end-to-end features**, supporting **100+ prospective clubs** and **increasing engagement by 28%**

Software Developer (Markus, PythonTA)

May 2025 – Apr 2026

University of Toronto, Department of Computer Science (Prof. David Liu)

Toronto, Ontario, CA

- Engineered and maintained **MarkUs (OSS)**, a scalable web application supporting **10k+ daily users**, using **Ruby on Rails**, **React**, **PostgreSQL**, and **Docker** with **CI/CD pipelines** for reliable and secure deployment
- Developed and maintained **backend services and technical documentation** for **PythonTA (OSS)**, a static code analysis tool used by **35k+ students** in UofT courses since 2016, leveraging **Python** and **Astroid**
- Built **automated testing infrastructure** using **Pytest**, **RSpec**, and **Jest** within **GitHub Actions CI/CD pipelines**, improving reliability and maintainability of production systems

PROJECTS

CExpress | C, Shell, Make, Homebrew, Git

karl-michaud.github.io/CExpress/

- Created **CExpress**, a lightweight, high-performance **HTTP server / microservice framework** for **C** that enables rapid prototyping and development of **RESTful APIs** with minimal overhead
- Implemented **HTTP/1.1 request parsing**, **dynamic routing**, and low-level **TCP socket programming**, emphasizing efficient memory usage and high-performance network communication

AI Video Generator | C, Python, Shell, FFmpeg, Deepseek API, Whisper, Git

www.youtube.com/watch

- Engineered an **AI video generation pipeline** in **C**, automating script generation, TTS synthesis, subtitle burning, and media merging using **FFmpeg**, **Whisper**, and integrating the **DeepSeek API**
- Architected a multi-process Unix pipeline of 5 standalone CLI services communicating through **Unix pipes** and process orchestration

TECHNICAL SKILLS

Languages: C, TypeScript, JavaScript, Python, Java, Ruby, SQL, Shell

Frameworks: React, Next.js, Node.js, Ruby on Rails, PostgreSQL, Supabase, Docker

Tools: Git, GitHub Actions (CI/CD), Linux, Stripe, Jira, Claude Code, Codex, Cursor

Spoken Languages: English (Fluent), French (Native)