

EDUCATION

- **University of Waterloo** Waterloo, Ontario
Bachelor of Applied Science in Electrical Engineering; GPA: 4.00 *Expected 2030*

EXPERIENCE

- **Software & Automation Developer Co-op** North York, Ontario
Renellence Inc *August 2026 – December 2026*
 - Automated the order-to-cash pipeline end to end in n8n, covering order intake, human-in-the-loop approvals, e-signature gating, QuickBooks Online invoicing and 3PL shipment tracking synced back to HubSpot
 - Built and shipped **Renellence Edge**, a sales operations platform used daily by a five-rep national sales team, with pipeline forecasting, KPI scorecards, a postal-code territory map and event ROI across 20+ screens
 - Architected Edge's serverless Node.js API on Vercel (12 routes, 15K+ lines) with role-based access control and HMAC-signed sessions, replacing N+1 CRM lookups with batched HubSpot v3/v4 calls and a Redis-cached order book
 - Integrated nine external APIs (HubSpot, Stripe, Shopify, QuickBooks, Meta Marketing, SignatureAPI, Google Sheets, VoIP, Gemini) through signed webhooks and token auth, including two-way contact and call sync
 - Designed for failure with paginated batch reads, exponential backoff on rate limits, deduplication and two-phase syncs that never delete before a copy is confirmed, so outages never blank the UI or lose records
 - Wrote a dependency-free test harness (1,600+ assertions, 46 suites) and a mocked local environment simulating every upstream API; released through a scripted dry run, backup and verification against live executions
- **Software Developer Intern** Waterloo, Ontario
Normative *January 2026 – April 2026*
 - Built **NIMBUS**, a full-stack profitability modeling tool (React, TypeScript, Node.js, PostgreSQL) with a reactive calculation engine for live COGS, margin and profit tracking without unintended re-renders
 - Automated seniority-to-cost mapping from backend rate card data, eliminating manual rate-mapping errors and keeping cost and billing data consistent
 - Built 15+ reusable React, TypeScript and MUI components, eliminating recurring UI-state bugs and manual state-sync workarounds
 - Integrated type-safe tRPC APIs across 10+ endpoints, driving runtime type errors on new API calls to zero
 - Designed PostgreSQL schemas and optimized queries through Prisma ORM, reducing redundant data by 25% and improving query response times by 30%

PROJECTS

- **yAI: Hybrid Local/Cloud AI Platform** | *Vercel, vLLM, FLUX.1, Upstash, Cloudflare, LM Studio* Oct 2026
 - Built **yAI**, a ChatGPT-style web app that routes each chat between LLMs on a 6 GB laptop GPU (up to 200 tokens/s) and **Qwen 3.8 27B** on a 48 GB serverless cloud GPU (34 tokens/s)
 - Deployed Qwen 3.8 27B (4-bit AWQ) on RunPod serverless vLLM that scales to zero when idle (about \$0.05 per conversation), with automatic failover to the cloud model when the home PC is offline
 - Added text-to-image generation with **FLUX.1 [schnell]** on a second serverless GPU (about 4 s and under \$0.01 per image), screened by a prompt safety filter and per-user daily rate limits
 - Architected a serverless Node.js API on Vercel with a Cloudflare Tunnel to LM Studio and Server-Sent Events streaming; stored script-hashed accounts, HMAC-signed sessions, chat history and images in Upstash Redis
- **Patient Motion Detection System** | *C++, ESP32, Python, Bluetooth, Signal Processing* Sep 2025 – Jan 2026
 - Designed an ESP32-based embedded system that classifies patient movement in real time from IMU accelerometer and gyroscope data to flag fall-risk scenarios
 - Developed signal processing and motion classification algorithms in C++ to detect abnormal movement patterns associated with delirium

TECHNICAL SKILLS

- **Languages:** Python, TypeScript, JavaScript, C++, Java, Kotlin, SQL, Verilog, HTML/CSS
- **Frameworks & Libraries:** React, Next.js, Node.js, tRPC, Prisma, Material UI, Tailwind CSS, LangChain, LangGraph
- **Infrastructure & Tools:** PostgreSQL, Redis, Upstash, Vercel, RunPod, vLLM, Cloudflare Tunnel, LM Studio, n8n, REST, GraphQL, Webhooks, Git, GitHub Actions, Docker