

MATTHEW LEW

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Education

Toronto Metropolitan University

Honours Bachelor of Science (HSc) in Computer Science, Minor in Cybersecurity

- **CGPA:** 3.87; **Dean's List:** 2021 - 2025
- **Relevant Coursework:** Algorithms, Data Structures, Operating Systems, Database Systems, Artificial Intelligence, Computer Security, Data Mining

Sep. 2021 – May 2026

Experience

Toronto Metropolitan University – Faculty of Arts

Sep. 2025 – Present

AI Software Developer

Toronto, ON

- Developing an AI-powered academic program navigation chatbot using a Retrieval-Augmented Generation (RAG) architecture.
- Implemented a FastAPI backend with Dockerized PostgreSQL (pgvector), Redis caching, and hybrid retrieval to support low-latency question answering.

Toronto Metropolitan University – CRESSET Lab

Sep. 2025 – Present

Researcher - IoT Software Security

Toronto, ON

- Prototyping an agentic, LLM-driven pipeline that converts natural-language IoT software specifications into platform-agnostic JSON IR and UML state machines for downstream code generation.
- Implemented deterministic schema + type validation for NL→JSON→UML; evaluated on **20** scenarios with **100%** completion, **95%** first-pass validity, and **95.65%** constraint coverage.

Mitsubishi Heavy Industries RJ Aviation – MHI RJ

May 2023 – Aug. 2024

Software Developer

Mississauga, ON

- Navigator IETP | *Java, Python, MySQL, Jenkins, Maven, Tomcat*
 - Primary Developer maintaining a mission-critical, customer-facing Java application (web and standalone) supporting a global fleet of **1,300+** CRJ regional aircraft.
 - Resolved customer issues via email and live meetings using debugging and log analysis, supporting approximately **190** airline operator companies worldwide.
 - Implemented server and database migration from third-party to internal services, increasing application profit by **40%**.
- Automated Operator Data Pipeline | *Python, SQL* Loader, Pandas, OracleSQL, Cron*
 - Proposed, designed, and implemented automation for manual data loading, eliminating human error and saving **5+** hours weekly.
 - Developed Python scripts and SQL* Loader control files to fetch/load data and generate daily email reports via Cron-job scheduling.

Projects

Zoomer – Accessible AI Meeting Bot | *Next.js, Python FastAPI, Recall.ai, Gemini API, Git* Jan. 2026

- Built an AI meeting assistant that autonomously joins Zoom sessions via Recall.ai, ingests real-time transcripts via webhooks, and generates structured post-meeting artifacts for accessibility and review.
- Architected an event-driven FastAPI pipeline for transcript ingestion, topic tracking, multilingual translation, and LLM summarization, plus a Next.js UI with timestamp-synced meeting playback and Q&A.

CauseCompass (Hackathon) | *Next.js, TypeScript, Gemini API, Prisma, Supabase, Git, Devpost* Oct. 2025

- Built an AI-driven platform to evaluate company sustainability, human rights, and inclusivity practices.
- Developed Prisma/Supabase data models and integrated Google’s Gemini API to generate source-grounded company summaries.

AI Resume Tailor Web App | *Next.js, Tailwind CSS, OpenAI API, Prisma, SQLite, Git* Jun. 2025

- Developed an AI-powered web app that generates tailored LaTeX resumes and cover letters by analyzing user resumes and job descriptions using OpenAI’s GPT model.
- Implemented LaTeX/PDF parsing into structured JSON stored in SQLite for reuse and iterative editing.

Technical Skills

Programming Languages: Python, Java, C/C++, TypeScript, JavaScript, Bash

Web Development: HTML, CSS, React, Node.js, Next.js, Tailwind CSS

Data & Databases: SQL, PostgreSQL, MySQL, SQLite, Pandas

Tools & Platforms: Git, Docker, Jenkins, AWS, Azure DevOps, Linux, Agile