

David M. Youssef

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Education

University of Waterloo + Wilfrid Laurier University **September 2025 – Present**
Bachelor of Computer Science + Bachelor of Business Administration (Double Honours Degree) *Waterloo, ON*

University of Toronto School of Continuing Studies **June 2024 – October 2024**
Certificate in Artificial Intelligence & Machine Learning *Toronto, ON*

Skills & Technologies

Languages: Python, Java, JavaScript, Node.js, C#, C/C++, Racket

Technologies: OpenAI API, SKLearn, Pandas, NumPy, SciPy, Matplotlib, Discord API

Tools: Git, Google Cloud, Jupyter, Vercel, Android Studio, Unity Engine

Experience

Data Engineering & NLP Intern **November 2025 – Present**
Catena Bible *Remote*

- Supported data processing for **100+ biblical commentaries**, optimizing access for **100,000+ Catena users** through structured chapter, and verse, level parsing.
- Refined regex patterns for **text scraping** and JSON output, improving raw text parsing accuracy by **15%** and reducing formatting errors for **250+ commentaries**
- Adapted processing workflow **to support Windows and C++ compilers**, enabling cross-platform execution for a team of **5+ developers**, reducing OS-related errors by **100%**

QA Analyst Intern **September 2024 – August 2025**
SiteGenie.ai *Remote*

- Validated **AR architectural visualization** systems in Unity (C#), resolving spatial alignment and rendering defects that reduced scene drift and object misplacement issues by **30% during internal testing**
- Analyzed **point cloud-based spatial mapping pipelines**, identifying reconstruction and depth inconsistencies that improved virtual object placement accuracy by **25% in controlled environment tests**

Software Lead **June 2024 – March 2025**
FIRST Tech Challenge (FTC 16397) *Brampton, ON*

- Developed **robot control software** using Java and the FTC SDK, for autonomous routines, TeleOp controls, and sensor/encoder integration, including **computer vision with TensorFlow**.
- Applied PID control and path optimization for precise robot navigation, qualifying for the **Ontario Provincial Championship** and earning the **Inspire Award** (out of 250+ participants).

Projects

LifeSaver | 1ST PLACE OVERALL WINNER **March 2026**
AI & Data Science for Good Hackathon 2026 by WatAI & Waterloo Data & Artificial Intelligence Institute

- Built a **911 emergency bridge app** for non-English speakers that places real outbound calls and speaks on the user's behalf via AI-generated voice
- Engineered a **live AI voice pipeline** using Groq (LLaMA 3.1 8B) within a **Twilio STT → LLM → TTS webhook loop** to autonomously hold full dispatcher conversations
- Engineered an accessibility-first React UI with an icon-driven quiz, enabling **zero-literacy emergency intake** for **non-English speaking users**

Ploutos | JavaScript, Node.js, Express, REST APIs **March 2026**

- Built a **drag-and-drop financial modeling canvas** using React Flow with **parallel RAG Agent analysis** on every canvas update
- Architected a **dual-AI engine** running Gemini and Backboard.io agents in parallel, with **persistent cross-session memory**
- Integrated 5 Canadian economic APIs (Bank of Canada, StatsCan, FRED, Square, UPC) to power a **location viability score** across **47+ Canadian cities**