Michelle Dominic

226-973-5464 | mmdomini@uwaterloo.ca | linkedin.com/in/michelle-dominic | github.com/m76domi98

Education

University of Waterloo — Waterloo, ON, Canada
Bachelor of Applied Science in Computer Engineering — *Sept. 2024 – Apr. 2029*

Experience

Programmer Analyst Intern — Jan. 2025 – Present
Stubbe's Precast — *Harley, ON*

- Integrated an **AI chatbot** into internal **ERP software** using **C#**, **.NET**, **Node.js**, **Vue.js**, and **TypeScript**.
- Developed predictive models with **TensorFlow**, **XGBoost**, and **Scikit-learn** to forecast warehouse production timelines, improving accuracy by 15%.
- Built SQL queries and **Python pipelines** with **Pandas** for real-time data automation and visualization.

Volunteer Research Assistant — May 2023 – Mar. 2024
University of Western Ontario — *London, ON*

- Contributed to open-source projects focused on energy optimization and sustainability.
- Developed economic heatmaps for hybrid energy systems using Python's **Matplotlib**.
- Created a **3D-printing** infill error correction algorithm leveraging **FullControl** and **Onshape**.

Projects

3D-Printing Infill Error Correction | *Python, FullControl, Onshape* — May 2023 – Mar. 2024

- Engineered algorithms to detect and correct infill pattern errors in **3D printed models** to enhance structural integrity and manufacturing consistency.
- Integrated **G-code** customization and Onshape **CAD** workflows to automate error correction during print

SAMA Heatmaps (Solar Alone Multi-objective Advisor) | *Python, Matplotlib* — Sept. 2023 – Dec. 2023

- Designed a **Python** tool that generates economic performance heatmaps for hybrid solar-battery energy systems across diverse climatic zones.
- Enabled data-driven decision-making for renewable energy deployment through clear, visualized regional economic viability models.

SenseSecure: Adaptive Alarm System | *C, STM32, PCB Design* — Sept. 2024 – Dec. 2024

- Built a **microcontroller**-based adaptive alarm system tailored for visually impaired users, providing tactile and auditory feedback under varying environmental conditions.
- Integrated sensors and actuators with **STM32 Nucleo boards**, programming device behavior with **embedded C** for an adaptive alarm system.

Podcastify | *Flask, Python, Vue.js, NLP, Speechify API* — Jan. 2025

- Built a web app converting textbook content into audio podcasts using **NLP** and **TTS APIs** to improve accessibility.
- Developed a scalable **Flask backend** for file processing, audio generation, and secure API integration.
- Implemented a **VoiceFlow chatbot** for context-aware responses, enhancing user engagement.
- Created a **Vue.js frontend** supporting uploads, real-time feedback, and routing.

Summus | *JavaScript, LLM, Python* — April. 2025

- Engineered a **Chrome extension** leveraging **LLMs** to summarize dense legal documents, highlighting essential clauses and user risks.
- Built a lightweight backend using **Python** and **Ollama** for local LLM inference; implemented a user-friendly frontend in vanilla **JavaScript**.

Personal Portfolio Website | *React, JavaScript, Vite* — May. 2025

- Developed a fully responsive personal portfolio website with **React** and **Vite** to showcase projects, technical skills, and professional experiences.
- Designed a clean and vibrant custom frontend aesthetic focused on accessibility, performance, and seamless user interaction.

Technical Skills

Languages: Python, C, C++, C#, Java, JavaScript, SQL, HTML5/CSS3, TypeScript, LaTeX
Frameworks: Node.js, Vue.js, React, .NET, Flask, TensorFlow, Scikit-learn, XGBoost
Tools: Git, Docker, Unity, Pandas, Matplotlib, Transformers, NLTK
Hardware: STM32, Arduino, Raspberry Pi
Soft Skills: Teamwork, Leadership, Problem-Solving, Adaptability, Communication