Carl Maalouli

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EDUCATION

Sept. 2019 - June 2024	**University of Toronto (UofT)**	St. George Campus - Canada

BASc in Computer Engineering - Minor in Artificial Intelligence
Dean's Honour List (Years 1/4)

Relevant Coursework: Operating Systems • Computer Networks • Artificial Intelligence / Machine Learning • Computer Security • Software Engineering • Probabilistic Reasoning & Analysis • Digital Systems & Electronics • Hardware & Computer Architecture • Engineering Leadership • Intercultural Communication • Organizational Behaviour & People Management

Sept. 2015 - June 2019	**SABIS International School**	Adma – Lebanon

Lebanese Baccalaureate (General Sciences section): Highest Honours - "Mention très bien"
Ranked 50 in Lebanon

SAT Score: 1510/1600 (99th Percentile)

TECHNICAL SKILLS

Programming Languages: C • C++ • C# • Python • JavaScript • Assembly Languages • HTML • CSS

Framework, Databases & Other: ASP.NET • .NET • Blazor (WASM & Sever) • Flask • Django • Flutter • Bootstrap • Tailwind CSS • Ant Design for Blazor • Azure Cloud Services • SQL/NoSQL Databases • DevOps • Front/Back-end Software Development • Agile • Scrum • Docker • AI/ML • Cybersecurity • Hardware Security • Secure Development • Source Control (Git) • IT Fundamentals • Computer Hardware & Architecture • Linux/Unix Scripting • Analog/Digital Electronics

Also familiar with: Verilog • MATLAB • Intel Quartus Prime • Java • Xamarin.Forms • LaTeX • Microsoft 365

WORK EXPERIENCE

May 2022 - Aug. 2023	**.NET Applications Developer**

Environment and Climate Change Canada - Downsview, Toronto, CA
- Worked on a greenfield project to explore the development of **cloud based applications** at ECCC: Developed new features/components using **C#**, **JS**, and **HTML** based on **secure coding** principles, fixed bugs, created tests, updated documentation, and managed databases according to **Agile** methodologies.
- Supported a few legacy **on-premise applications**: code updates and bug fixes.
- Cooperated with other students at ECCC to develop an **internal tracking and management tool** for ECCC applications.

June 2021 – Sept. 2021	**Staff Member**

What A Bagel, Toronto, CA
- Managed online app orders, provided technical support, and assisted with customer service and daily operations.

SOFT SKILLS

Languages: English (Excellent) • French (Very Good) • Arabic (Native)

Other: Diplomacy **(Model UN Award)** • Public Speaking • Leadership • Teamwork • Intercultural Communication • Software Design Communication • Adaptability • Problem Solving • Decision-Making • Time Management • Fast-Learning

UNIVERSITY PROJECTS

Sept. 2023 - April 2024

Capstone Project (AI/ML) - Large Language Model for Financial Report Analysis | Final Engineering Project

University of Toronto, Toronto, CA

- Developed a comprehensive financial database using **Python** and **SQL**, which streamlined data retrieval processes for public company filings.
- Created custom tools for data exchange between DB and **Large Language Models (LLMs)**.
- Leveraged open-sourced LLMs (GPT-4) and LLM frameworks **(LangChain)**, along with **prompt engineering** methods, to analyze filings accurately.
- Designed and implemented a modern **web app with a chat-based UI** that exposes the LLM agent to end-users looking to ask questions.

Sept. 2023 - Dec. 2023

Web Application for Event Management and RSVP Tracking

University of Toronto, Toronto, CA

- Developed and deployed a Flask-based web application to manage events and track RSVPs, enhancing event planning efficiency and user communication.
- Technologies Used: **Flask**, **Python**, **JavaScript**, **HTML**, **Bootstrap**, **SQL**, **Docker**, **GitHub Organization**.
- Employed **Agile** methodologies with **Scrum**, planning tasks using **sprints**.
- Served as Software Lead in a team of seven students, designing the **software architecture**, overseeing development, designing and developing new components, and coordinating team tasks using GitHub for version control.

Jan. 2022 - April 2022

Machine Learning Project

University of Toronto, Toronto, CA

- Designed and developed an **object detection machine learning model** and integrated it into a program that counts the number of people in a room via video feed, aiding in enforcing capacity limits during the Covid-19 pandemic.

March 2021 - April 2021

ARM Processor Open Software

University of Toronto, Toronto, CA

- Developed a version of the game "Breakout" on an ARM processor using **C** and **ARM Assembly**.

Jan. 2021 - April 2021

Interactive City Mapping Software

University of Toronto, Toronto, CA

- Designed and developed an interactive city mapping software **for Linux** using **C++**, with **algorithms** for efficient path finding.

Jan. 2020 - April 2020

Client Communication & Software Design

University of Toronto, Toronto, CA

- Worked under direct communication with our **client**, Professor Chris Bouwmeester (UofT), to design a software solution for in-class group formation and seat assignment.