

# SELINA ZARZOUR

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## Education

### University of Toronto

Expected Graduation: June 2027

Bachelor of Computer Engineering — Minor Artificial Intelligence & Engineering Business

Toronto, ON

- Engineering International Scholar — **C130K\$ for 4 years**
- Courses: Data Structures Algorithms(C), Programming Fundamentals (C++), Linear Algebra, Engineering Strategies Practice, Calculus I, II, Mathematical Physics and Advanced Mathematics

## Work Experience

### University of Toronto

Dec 2024 – Present

AI Researcher, Spiking Neural Networks

Toronto, ON

- Developing a **dictionary learning-based sparse coding** for image compression, reducing data redundancy by **60%**
- Planning to present and publish research on Spiking Neural Networks at the ICAI 2025 International Conference on Artificial Intelligence in Toronto, focusing on efficient image compression through dictionary learning

## Projects

Crave Well | [Devpost](#)

Gemini API | Google Cloud Vision | Cohere R+ | Python | Firebase | React

- Built an **AI-powered nutrition advisor** that transforms meal photos into real-time, personalized health insights using multimodal analysis
- Designed an end-to-end AI pipeline by integrating **Google Cloud Vision, USDA, Cohere, and Gemini APIs** to extract food data and generate tailored dietary recommendations based on user profiles

CSGPT Pro | [Devpost](#) | [Source Code](#)

Scikit-Learn | Numpy | Pandas | TF-IDF

- Developed a **Retrieval-Augmented Generation (RAG)** model with **TF-IDF** and **OpenAI API**, improving response accuracy by **75%**
- Processed **large-scale datasets (PDFs, notes)** using **Pandas** and **Numpy**, reducing response latency by **40%**

EmpowerSafe | [Source Code](#)

React.js | JavaScript | Flask

- Built an **ML-powered risk prediction model** with **Linear Regression & Google Maps API**
- Integrated **DialogFlow NLP models**, enhancing chatbot efficiency for immediate safety guidance

Volontariato | [Devpost](#) | [Source Code](#)

JavaScript | MongoDB | React.js

- Created a full-stack web application using **React and Flask**, that connects volunteers with local charities
- Integrated **TripAdvisor & Soup APIs**, increasing user engagement by **40%**

## Leadership & Extracurriculars

G12 Uni | [Website](#)

Jun 2023 – Present

- Co-founded G12 Uni, an officially registered company in Ontario, Canada, building a cross-platform app with **Flutter** to support students across 5+ high schools
- Secured Google Cloud for Startups funding, scaling cloud services to handle **10,000+** concurrent queries

Competitive Athlete

Sep 2021 – Sep 2023

- Represented **Lebanon** in **international competitions**, achieving personal bests and podium finishes
- Competed in **Belgium**, fostering **cultural exchange** through sports

## Technical Skills & Certifications

**Languages:** Python, Java, SQL, HTML5, CSS, JavaScript, Verilog, C, C++, Dart, Linux, Shell Scripting

**Developer Tools:** AWS, Postman, Git, Azure, Docker, GCP, Microsoft Azure AI, Hugging Face, Firebase

**Libraries/Frameworks:** Flask, ReactJS, TensorFlow, NextJS, NodeJS, PyTorch, Pandas, Scikit-Learn, Flutter

**Deep Learning, A-Z, SuperDataScience(Aug 2024) | [Certificate Link](#)**

**Microsoft Azure AI Engineer Associate (Jul 2024) | [Certificate Link](#)**

**Introduction to AI, Machine Learning, Google Cloud (Jun 2024) | [Certificate Link](#)**

**AWS Cloud Essentials for Business Leaders, Amazon Web Services (AWS) (Jun 2024) | [Certificate Link](#)**

**Developing Machine Learning Solutions, Amazon Web Services (AWS) (Jun 2024) | [Certificate Link](#)**