SELINA ZARZOUR

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SUMMARY

AI-focused Computer Engineering student with hands-on LLM and vision model experience, real-world research impact, and 1,900+ open-source downloads.

EDUCATION

University of Toronto **Expected Graduation: June 2027 (PEY optional))**

Bachelor of Applied Science in Computer Engineering *Toronto, ON*

- Selected as an **Engineering International Scholar** – awarded $130,000 merit-based scholarship
- Minor in Artificial Intelligence & Engineering Business; focus on applied machine learning and product strategy
- Relevant Courses: Applied Fundamentals of Deep Learning, Introduction to Artificial Intelligence, Introduction to Machine Learning, Algorithms & Data Structures, Probability and Applications

WORK EXPERIENCE

Machine Learning Research Intern **May 2025 – Present**

University of Toronto, ImedLabs

- Built and shipped a multitask vision classification model and an LLM model, enabling robust, accurate, and interpretable clinical report generation from medical images and text.
- Fine-tuned CNNs and LLMs to improve dysphagia detection accuracy by **13%**
- Designed real-time **clinical UI** with feedback loop to enhance trust & usability

Co-founder & Product Lead **June 2023 – May 2025**

G12 Uni *Toronto, ON*

- Launched a student guidance app used by **10K+ students** across 5 schools
- Pitched to **Google** and secured **$2K+** in cloud credits for scaling roadmap
- Deployed backend on **Firebase** to handle **10K+** daily queries with **40%** faster latency

PROJECTS

HealthGPT – Fine-Tuned Medical Q&A LLM [GitHub] **Python** | **Hugging Face** | **Gradio** | **PyTorch**

- Fine-tuned **TinyLLaMA-1.1B** on **16K+** MedQuad Q&A using **LoRA** and 4-bit quantization
- Achieved **+20% accuracy** on medical QA via supervised instruction tuning with PEFT
- Deployed **Gradio UI** on Hugging Face Hub for public demo; reached **1,903 downloads in one month**, demonstrating strong user adoption and positive feedback

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CraveWell – AI Dietary Assistant [GitHub] **Python** | **React** | **Firebase** | **Google Cloud Vision** | **Cohere**

- Built food-photo analyzer in 36h hackathon using **Google Vision, Cohere & NLP**
- Generated advice based on calories, health goals, and dietary restrictions
- Chained APIs for end-to-end nutrition insights; recognized by judges

AI Research Assistant – MCP + LLM Integration [GitHub] **Python** | **Gradio** | **MCP** | **FastAPI** | **arXiv**

- Built an academic research assistant using **FastAPI** and the **Model Context Protocol (MCP)**
- Connected to **arXiv** and structured prompts for Claude/GPT-based paper summarization
- Designed modular **LLM backend** for real-time query & contextual memory integration

AI Try-On Web App + Chrome Extension [GitHub] **Python** | **Gradio** | **OpenCV** | **Diffusion API** | **JavaScript**

- Developed real-time try-on app using **diffusion models** and **Gradio**
- Designed Chrome extension for local demo with image detection and UI overlay

TECHNICAL SKILLS

Languages: Python, Java, SQL, C++, JavaScript
ML Frameworks: PyTorch, TensorFlow, Scikit-Learn, Hugging Face Transformers, LoRA, BitsAndBytes
NLP & Multimodal: Hugging Face, TF-IDF, SpaCy, NLTK, Vision-Language APIs (Google Vision, Cohere)
Cloud Platforms: Google Cloud, AWS, Firebase, Azure
DevOps: Git, GitHub, Gradio, FastAPI, Docker, Kubernetes
Math: Linear Algebra, Statistics, Probability, Applied Mathematics
Certifications: Azure AI Engineer Associate (Jul 2024), Deep Learning A-Z (Aug 2024), AWS Cloud Essentials (Jun 2024), AWS ML Solutions (Jun 2024), Google Cloud ML (Jun 2024), Accenture Consulting (Jun 2025)