Dalia Victoria Mahidashti

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Education

University of Toronto **Sept. 2021 – May 2026**
Bachelors of Applied Science in Computer Engineering *Toronto, ON*

Experience

NVIDIA **May 2024 – June 2025**
Systems Software Engineer Intern *Toronto, ON*

- Re-architected three core APIs across **150+ engineers** by migrating from Flask to FastAPI with async worker pool, enabling significantly higher throughput and scalable concurrency — handling production load **5× more efficiently** with lower latency. Managed all containerization, Kubernetes deployment, and CI/CD pipelines to ensure **100% uptime** during rollout.
- Architected and deployed a real-time financial tracking and auditing platform for hardware acquisition oversight at the executive level. Designed a resilient pipeline using Prisma, Redis queues and PostgreSQL, reducing manual intervention and turnaround time from **hours to minutes.**
- Implemented Milvus-based vector search and top-N semantic retrieval for an internal analytics platform. Delivered fast, context-aware access to system performance and usage metrics for **100+ engineers**, improving query resolution and data discoverability efficiency by over **60%** .
- Led the development of an LLM-based classification system for executable detection across **10,000+ software build artifacts**. Applied a few-shot prompting with hierarchical metadata to achieve **91% precision**, reducing manual triage workload and accelerating QA inference pipelines.
- Developed an image processing pipeline for real-time GPU-driven game testing, improving anomaly detection reliability by **88%** using histogram equalization, HSV filtering, and K-means clustering.

Qualcomm **May 2023 – August 2023**
Software Engineer Intern *Markham, ON*

- Developed functional prototype of a brand new tool to do responsive data logging, collection and visualization for Snapdragon SoC telemetry data, utilizing Python & C++ to create a seamless UI/UX experience with **40% reduction in latency** and enabling adoption by **150+ internal users.**
- Proactively identified, proposed and implemented technology upgrades and process improvements, leading to cost savings and **75% increased operational efficiency** in CI/CD pipelines and telemetry.
- Analyzed power delivery networks from a variety of engineering documents and used the knowledge to improve overclocking tools and capabilities.
- Implemented Python Scripts to automate tests, and parse & generate a complete register database for a new chip revision, achieving a **30% reduction** in debugging time.

National University of Singapore **May 2023 – August 2023**
Research Student *Singapore, SG (Remote)*

- Developed and compiled research paper on implementation of FPGA-accelerated CNN models to **45% optimized inference latency**, and power consumption, and particularly memory utilization through mixed pruning, paving the way for scalable and efficient AI solutions in computing applications.

University of Toronto **May. 2022 – December 2022**
Research Assistant *Toronto, ON*

- Engineered an optical trapping system using structured illumination on a cytometer chip, achieving a **40% improvement in separation efficiency** for biomarker detection by segregating beads and cells based on physical size.
- Optimized complex geometrical optics models using Comsol Multiphysics, reducing simulation time by **25%** while improving accuracy in multi-component problem analysis.
- Improved biomarker sensitivity by 35% through innovations in bead-based assay separation, enabling more precise detection and characterization of biomarkers in diagnostic applications.

University of Toronto **Jan. 2024, 2025 – May 2024, 2025**
Calculus I Teaching Assistant *Toronto, ON*

- Delivered weekly tutorial content, and implemented a standardized rubric system to streamline grading and feedback, resulting in **87% reduced time** spent while maintaining accuracy and consistency in feedback delivery.

University of Toronto **Sept. 2025 – Present**
Engineering Strategies & Practice Teaching Assistant *Toronto, ON*

- Led tutorials and guided student teams through engineering design processes, fostering collaboration, communication, and problem-solving skills in a large first-year course.

Projects

Elcano | *Python, JavaScript (React), Firebase, Figma* **January 2023 – Present**

- Led a team of 8 in designing and developing an open-source, *faculty-endorsed*, interactive tool aimed at streamlining course selection and career exploration for **1400+ users** of the UofT ECE student body.
- Architected a high-performance system that successfully passed load tests, achieving an **85% reduction** in search time through optimized architecture and efficient design principles.
- Earned the **Best Paper Award and Publication** at the International Conference in Education & E-Learning 2024, emphasizing the project's role in transforming and fostering innovative approaches to digital learning.

Centre for Global Engineering Aquagenx | *Python (Pytorch), Flask, Docker, Firebase, SQL* **April 2024**

- Led a team of 10 in the development of a smartphone app for rapid water quality assessment in decentralized communities in Mexico City, integrating image processing algorithms with OpenCV and TensorFlow frameworks.
- Integrated edge detection and histogram equalization techniques to preprocess images for ResNet-50 (CNN), within real-time data collection methods, enhancing the model's accuracy in identifying bacterial colonies for water quality assessment applications.

Technical Skills

Languages: Python, C/C++, JavaScript, SQL, Verilog, ARM/NIOS II Assembly

Frameworks & Libraries: React, Node.js, Flask, Django, FastAPI, CUDA

DevOps & Tools: Git, Bash, Docker, Kubernetes, Redis, Prisma, PostgreSQL

Student Societies

IEEE University of Toronto Student Branch **April 2023 – Present**

Branch Chair *Toronto, ON*

- Led a diverse team of **95+ members** across 6 sub-teams, overseeing expansion initiatives and fostering cohesive communication within the organization and our partners.
- Managed the organization of nationwide events, including AWSHack, NewHacks & MakeUofT, Canada's largest makeathon, with 550+ attendees and 90+ project submissions, achieving a **130%** increase in engagement and applications.

Engineers Without Borders UofT Chapter **April 2023 – Present**

VP of Technical Branch *Toronto, ON*

- Led sourcing and management of technical projects in collaboration with various partners including the Center for Global Engineering Canada, Engineers Without Borders Canada, the Canada Mortgage and Housing Corporation, and the Prince Albert Grand Council.
- Directed project planning, overseeing technical strategy and resource allocation to ensure alignment with organizational goals and timelines.
- Mentored and coached a team of 8 engineers, fostering skill development in PyTorch and Convolutional Neural Networks (CNNs) for effective implementation of water quality assessment technologies.
- Facilitated cross-functional collaboration with stakeholders, including academic and community partners, to enhance project impact and sustainability.

Publications

Dalia Victoria Mahidashti, Bella Yang, Leo Hc Li, Kovid Srivart, Hamid S Timorabadi. *ELCANO: Enhancing Academic Pathways for Course Planning & Career Alignment in Higher Education.* In Proceedings of the 8th International Conference on Education and E-Learning (ICEEL), ACM, Tokyo, Japan, November 2024. https://doi.org/10.1145/3719487.3719507

Dalia Victoria Mahidashti, Sambea Cochrane, Shai Cohen. *Why Do We Fall? Analyzing Demographic Patterns in Failure and Academic Improvement in First-Year Calculus.* To appear in Proceedings of the Canadian Engineering Education Association Conference (CEEA-ACÉG), Polytechnique Montréal, June 2025.