Mohamed Elsayed

647-451-4724 | Email | LinkedIn | GitHub | Portfolio

Education

University of Toronto Toronto, Ontario

Bachelor of Engineering in Engineering Science *Sep 2025 – May 2030*

Relevant Coursework: Data Structures and Algorithms (Python/C), Linear Algebra, Engineering Mathematics and Computation, Calculus I/II

Experience

Undergraduate Research Assistant July 2025 – Aug 2025

American University in Cairo (AUC) *New Cairo, Egypt*

- Developed a custom electronic control system using microcontrollers to automate a precision translation stage for optics experiments.
- Designed and assembled circuit boards for motor control and magnetic field manipulation, ensuring reliability through rigorous testing.
- Programmed microcontrollers using C++ to integrate hardware and software for automated research setups.

Backend Intern July 2024 – Aug 2024

eVision *New Cairo, Egypt*

- Developed and deployed a high-performance file parsing system, automating data processing to accelerate integration workflows and improve data reliability.
- Partnered with frontend, database, and QA teams in a cross-functional agile environment to ensure seamless integration and system robustness.
- Acquired hands-on, full-stack experience across the entire software development lifecycle (SDLC), from design and implementation to testing and deployment.

Projects

LaTeX Notetaker Converter | *TypeScript, JavaScript, CSS, Python* Dec 2025 – Present

- Built a web-based tool to convert handwritten, typed, and audio notes into structured LaTeX documents optimized for notation heavy coursework and technical writing.
- Implemented OCR, parsing and automation pipelines to generate compilable LaTeX with support for equations, figures, and modular document organization.

Structural Beam Simulation | *Python, MATLAB* Nov 2025

- Built a general-purpose beam simulation engine for arbitrary cross-sections by computing section properties directly from geometry; generating deflection curves, and factor-of-safety statistics for arbitrary loads using numerical integration.
- Developed MATLAB stress/deformation visualizations, including 3D deflection animations under moving/distributed loads, and validated predictions against physical tests to improve accuracy.

Technical Skills

Programming Languages: Python, C, C++, Java, JavaScript, TypeScript, SQL, MATLAB, HTML/CSS
Hardware & Electronics: Microcontrollers, Motor Control, Circuit Design, PCB Assembly, Sensors
Developer Tools: Git, VS Code
Libraries: NumPy, Matplotlib