

Zuhair Khan

zuhairhk.ca | zuhairhk@gmail.com | [linkedin.com/in/zuhairhkhan](https://www.linkedin.com/in/zuhairhkhan) | github.com/zuhairhk

EDUCATION

Toronto Metropolitan University (Formerly Ryerson University)

Toronto, ON

B.Eng, Computer Engineering

Expected graduation, May 2026

- Electrical & Computer Engineering Student Society (Exec. Advisor, VP Operations, Jr. Rep, FYR)
- RUHacks 1st Place, REC 1st Place, MET Eng Comp 3rd Place
- Related Coursework: Digital Systems Engineering, Advanced Algorithms, Software Project Management, Computer Organization & Architecture, Operating Systems, Computer Vision, Software Design & Architecture

EXPERIENCE

Software Development Engineering Intern

May 2024 – July 2025

Ontario Power Generation (OPG)

Bowmanville, ON

System C & OHD Application

- Engineered and deployed **RESTful APIs** using **Python Flask** and **pymssql** to streamline data integration across internal systems.
- Refactored legacy scripts into a structured **3-tier MVC architecture**, improving scalability and maintainability.
- Delivered a **93% reduction in data-request latency**, transforming system performance and accelerating end-user workflows.

Matrix Optimization Tool

- Re-engineered a critical work plan matrix program using **Flask**, **VBA**, and **pyodbc**, modernizing scheduling infrastructure for Darlington & Pickering's Planning & Cost Control divisions.
- Developed an algorithm for NG-M datasets that dynamically computes crew allocation and task dependencies, reducing schedule generation time from **16 hours to under one minute**.

Power Platform Integration

- Built and maintained **Power BI dashboards** visualizing operational metrics across engineering teams, integrating automated SQL data pipelines.
- Developed and maintained **Power Apps** to facilitate stakeholder interaction with workplans, aligning with business processes and governance.

Project Manager (CEN 100)

Sep. 2023 – Dec. 2023

Toronto Metropolitan University

Toronto, ON

- Oversaw the end-to-end execution of a **Reverse Engineering Design Project** for a cohort of 35 first-year engineering students, ensuring all deliverables were met on schedule and to specification.
- Facilitated weekly project review meetings as the primary liaison for project governance, risk management, and issue resolution, while coordinating milestones and reporting progress to faculty supervisors.

PROJECTS

QSense – Smart IoT Device

Jan. 2025 – Present

- Designed and implemented an embedded IoT system using **ESP32 (C++/Arduino)** and **TFT eSPI** display.
- Built a companion mobile app with **React Native (TypeScript, Expo)** to interface with hardware.
- Developed backend APIs with **Django/Python** deployed on **Render** for real-time synchronization of services.

Cache Controller Design

Sept. 2025 – Oct. 2025

- Engineered a **Cache Controller** system in **VHDL** for direct-mapped memory access between **CPU**, **SRAM cache**, and **main memory controller**.
- Designed and implemented the **control logic** for cache hit/miss handling, data forwarding, and synchronization between CPU and main memory.
- Simulated timing and signal behaviour in **ModelSim** and verified performance improvements in access latency.

TECHNICAL SKILLS

Languages: Python, C, C++, Java, Dart, C#, SQL, VHDL, JavaScript, Bash, MATLAB, HTML/CSS

Frameworks: Flask, Flutter, React, Django, Node.js, .NET

Embedded Systems: UART/I2C/SPI, ESP32, Arduino, ModelSim, CMake, JTAG Debugging

Technologies: Git, Docker, MS Project, Azure DevOps, GCP, Cloudflare, Agile (Kanban), SSMS, PowerBi

Certificates: Python AI Development: Intermediate ([Skillsoft Percipio](#))