

Zuhair Khan

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EXPERIENCE

Software Engineer

May 2024 – July 2025

Ontario Power Generation (OPG)

Bowmanville, ON

System C & OHD Application

- Engineered enterprise **RESTful APIs** using **Python Flask**, enabling standardized data exchange across multiple internal planning systems and reducing manual data handling by **60%+**.
- Designed and optimized **Microsoft SQL Server** queries across large relational datasets, improving reporting and dashboard refresh performance by up to **93%**.
- Designed relational data models supporting centralized data governance practices, improving dataset consistency and reducing downstream reconciliation effort.
- Refactored legacy automation scripts into a modular **MVC-based architecture**, decreasing technical debt and improving maintainability for future feature development.
- Developed automated backend processes and scheduled workflows saving **10+ hours/week** for engineering and planning teams.
- Integrated backend services with Power BI dashboards enabling real-time visibility across **30+ enterprise reports**.
- Collaborated using **Azure DevOps** for source control, work item tracking, and controlled deployments within a regulated nuclear environment.

Matrix Optimization Tool

- Developed SQL-driven scheduling and transformation logic integrating multiple enterprise datasets.
- Engineered automated allocation algorithms modeling **150+ crews**, reducing schedule generation time from **16 hours to under one minute**.
- Built data-processing pipelines using **Python, VBA**, and relational interfaces supporting operational planning workflows.
- Maintained version control and collaborative development using **Git**, supporting iterative enhancements and algorithm validation.

Founder / Software Engineer

Dec 2025 – Present

ClippyIO

Toronto, ON

- Architected scalable backend services using **FastAPI**, enabling asynchronous processing pipelines handling high-volume media workloads.
- Designed event-driven task orchestration and queue-based processing improving system throughput and reducing blocking API calls.
- Developed containerized compute workers using **Docker**, supporting distributed GPU-based processing aligned with microservice architecture patterns.
- Implemented validation layers, structured logging, and monitoring improving observability and production stability across deployments.
- Integrated secure AWS storage and networking enabling reliable large-scale data processing workflows.

PROJECTS

QSense – Embedded IoT Firmware Platform (QClock v1)

Jan. 2025 – Present

- Developed full-stack IoT architecture combining embedded firmware with backend APIs and mobile interfaces.
- Implemented device configuration logic and REST endpoints supporting distributed device management.
- Applied event-driven programming and embedded state-machine design ensuring reliable device behavior under constrained hardware resources.
- Collaborated using GitHub workflows ensuring structured version control and deployment practices.

Apple Health Wrapped

Dec. 2024

- Built a full-stack personal data recap platform parsing Apple Health XML exports to generate yearly fitness insights including sleep, workouts, heart rate, and movement metrics.
- Implemented backend processing using **Python** and **FastAPI**, transforming raw XML datasets into structured summaries and analytics-ready data models.
- Developed a responsive frontend using **React.js**, **Next.js**, and **TypeScript**, creating dynamic visual recap pages and interactive dashboards for user metrics.

TECHNICAL SKILLS

Languages: Python, JavaScript (ES6+), Java, C#, TypeScript, SQL, C, C++, Bash

Enterprise & Data: Microsoft SQL Server, RESTful APIs, Relational Data Modeling, Data Governance, MDM Concepts

Frameworks: FastAPI, .net, Flask, Django, React, NextJS

Dev Tools: VS Code, IntelliJ IDEA, GitHub, Docker, Kubernetes

Cloud/Infra: AWS, Microservices Architecture, Containerization, CI/CD Concepts

Certificates: AWS Certified Cloud Practitioner, OPG Nuclear Site Clearance

EDUCATION

Toronto Metropolitan University (Formerly Ryerson University)

Toronto, ON

B.Eng, Computer Engineering

Expected Graduation, May 2026

- Electrical & Computer Engineering Student Society Leadership
- RUHacks 1st Place, REC 1st Place, MET Eng Comp 3rd Place
- Related Coursework: Distributed Systems, Database Systems, Embedded Systems, Advanced Algorithms, Computer Vision
- Relevant Topics: Real-Time Systems, Backend Architecture, API Design, Scalable System Development