

KRISH SHAH

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Education

University of Waterloo

September 2013 – April 2027

Bachelor of Applied Science in Computer Engineering

Waterloo, Ontario

- Relevant Courses: DSA, Embedded Systems, Systems Programming, Digital Systems, Computer Architecture

Experience

Toronto Transit Commission (TTC)

January 2025 – April 2025

Software QA Intern

Toronto, ON

- Automated laptop imaging with **Python** by retrieving MAC addresses via subprocess and network scanning, pushing info to DSM, and accelerating deployment of 1,000+ devices by **10%**
- Incorporated scripts using **Python** and **PowerShell** to aggregate XML test results into an organized format and to load the latest build code onto the hardware, so that daily testing can be performed.
- Developed **PowerShell** script to rename new Windows 11 devices by connecting to **Azure AD**, enabling domain join and Intune enrollment for automated image deployment
- Built validation scripts to test post-image provisioning (disk health, network, identity) using **Linux terminal utilities** and **PowerShell**

Dundas Life

May 2019 – August 2019

Front End Developer Intern

City, State

- Developed a **Flask**-based web scraper using **Python** to extract key insurance data via keyword parsing and stored structured results in a **MySQL** database for easy querying and analysis
- Built full-stack AI chatbot using **React**, **Flask** and **PostgreSQL**, integrating **OpenAI API** to analyzed scraped data and generate personalized policy recommendations with **80%** accuracy
- Redesigned main website using **React**, **Node**, **ShadCN**, and **Tailwind CSS**, enhancing interactivity and implementing responsive media queries for mobile devices.
- Integrated weekly feedback from users and managers in **Agile** sprints to enhance chatbot response quality, resulting in **5+** iterative releases

Electrium Mobility

October 2023 – December 2024

Embedded Systems Developer

Waterloo, ON

- Developed firmware in **C/C++** for a universal longboard remote control system using dual ESP32-C6 MCUs, handling communication, control, and safety logic
- Programmed robust bidirectional wireless communication using **ESP-NOW**, ensuring reliable ESC signal transmission over **CAN** at distances exceeding **100m**
- Implemented interrupt service routines (ISR) and preemptive task scheduling via **FreeRTOS**, reducing input-to-response latency to under **10µs**

Projects

Moodify [!\[\]\(206536f97fdb267876a3a10ea42b0254_img.jpg\)](#) | *React.js, Flask, Spotipy, scikit-learn, pandas, Numpy, Axios, PKCE Auth, Git*

May 2025

- Developed Moodify, a full-stack emotion-based music recommendation app using **Flask**, **React**, and Spotify's Web API to personalize song suggestions based on user emotion and intent
- Trained and integrated three custom **NLP** models (emotion, intent, context classifiers) using **10,000+** labeled samples to interpret user input and drive music selection logic
- Built a **RESTful API** backend for scalable ML inference, supporting efficient audio-text sentiment mapping and dynamic playlist generation based on detected mood

Embedded Motor Control Module [!\[\]\(c1b924320d9ec7587a1dd427119524d0_img.jpg\)](#) | *STM32, C++, PCB Design, SPI, UART, HIL*

August 2024

- Designed and routed a custom motor-control & diagnostics PCB featuring **STM32 MCU**, hall-effect current/voltage sensors, power filtering, and **UART/SPI** interfaces
- Developed real-time embedded firmware in **C++**: implemented closed-loop PI current controller at 1, acquired sensor data via SPI, and relayed telemetry over UART
- Executed hardware-in-the-loop testing with power supplies and oscilloscopes; tuned control-loop gains and resolved EMI during high-current draws

Flight Tracker [!\[\]\(dcadc17c064c775919616fcc152162e9_img.jpg\)](#) | *Django, SQL, REST API*

December 2023

- Developed **Django** app that optimized **SQL** queries, improving lookup speeds by **20%** and improving data retrieval
- Integrated live flight status updates using **REST APIs**, parsing **JSON** data to give real-time route information
- Designed a mobile-friendly interface with **Django** templates and **Bootstrap**, ensuring responsive accessibility across devices

Technical Skills

Languages: Python, C++, C, JavaScript, SQL, Bash, HTML/CSS, Java, RISC-V

Frameworks/Libraries: React, Flask, Node.js, Express.js, Tailwind CSS, Bootstrap, Passport.js, PyTorch, scikit-learn

Developer Tools: Git, GitHub, VS Code, Postman, Jupyter, Docker, Firebase, Heroku, MongoDB Compass

Technologies/Platforms: Linux, MySQL, PostgreSQL, REST APIs, OAuth2, Mapbox, Azure, AWS, PowerShell