

Taheer Khan

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TECHNICAL SKILLS

Languages: C/C++/C#, Assembly, VHDL/Verilog, MatLab, Python, Java, JavaScript, HTML/CSS, SQL, SSH
Technologies/Tools: Cadence, Quartus, Microchip Studio, KiCad, MultiSim, Simulink, GIT, MS Power BI, Linux
Hardware: ARM Cortex-M3, FPGA, Raspberry Pi, ESP32, ATM328, STM32, OPAMP, MOSFET, Oscilloscope, Soldering

EXPERIENCE

Hardware Intern

May 2025 – Aug 2025

Aerosports

Oakville, ON

- Programmed **ESP32** microcontrollers using **MicroPython** to add **NFC** peripherals into embedded arcade systems.
- Helped design and assemble **custom PCBs** to interface card readers with arcade control circuitry using **datasheets**.
- Modified embedded hardware to support **UART** communication and system-level compatibility.
- Collaborated with team members to **solder**, deploy, and validate NFC readers integrated with a secure backend API.
- **Tested & validated** data flow between NFC readers and PC systems to ensure reliable account & transaction handling.

Electrical Co-Lead

Sept 2024 – Current

TMU Baja Racing SAE

Toronto, ON

- Designed the vehicle's electrical harnesses from battery & fuse box, integrating power distribution & sensor systems.
- Weatherproofed harnesses with sleeves & heat-shrinking; **tested for automotive grade reliability standards**.
- Designed a **custom PCB** for gear sensor with **thermal management** and **LCD** for real-time gear display.
- **Mentored team members** on harness assembly, PCB design, and best practices for electrical integration.

PROJECTS

Embedded Media Console | C, ARM Cortex-M3, Keil uVision

- Developed a media center with a photo gallery, mp3 player, & joystick based games using **ARM Cortex-M3** MCU.
- Implemented **RTOS-based architecture** to manage GUI & USB audio with volume control, & game logic
- Debugged RTOS firmware using tools eg. **performance analysis**, **disassembly**, & watch windows to identify scheduling & latency issues.

Posture Correction AI Application | Python, MediaPipe, OpenCV

- Developed a real-time posture correction system using **MediaPipe** and **OpenCV**, applying pose estimation.
- Used **machine learning** to track body points and calculate deviations, **improving user posture by 30%**.

Banking Application | Java, JavaFX/FXML SceneBuilder, JUnit

- Developed an app with secure login verification for clients & admins, supporting transactions & managerial actions.
- Designed a UI using **JavaFX & FXML SceneBuilder**, focusing on intuitive layout & responsive interactions.
- Created **UML** diagrams to model system structure & class interactions and performed tests & debugged with **JUnit**.

EDUCATION

Toronto Metropolitan University

Expected 2028

Computer Engineering

Toronto, ON

Relevant Courses: Computer Networks, Embedded Systems, Digital Systems, Control Systems, Microprocessor Systems, Electronic Circuits, Signals & Systems, Operating Systems, Advanced Algorithms