

Waleed Rashid

waleedrashid.com | wrashid@torontomu.ca | linkedin.com/in/waleed-rashid | github.com/waleed-rashid

EDUCATION

Toronto Metropolitan University

Toronto, ON

Bachelor of Engineering, Computer Engineering

Sep. 2023 – Apr. 2027

- **Relevant Coursework:** Electric Networks, Digital Systems, Electronic Circuits I, Signals & Systems II, Microprocessor Systems, Control Systems, Communication Systems, Data Structures & Algorithms, Operating Systems.

EXPERIENCE

Electrical Design Intern

Jul. 2025 – Aug. 2025

EPCM

Oakville, ON

- Revised **20+** electrical schematics in AutoCAD and EPLAN based on P.Eng. redlines, eliminating documentation errors and delivering compliant drawings on schedule across 3 active industrial projects.
- Built and maintained electrical BOMs covering **150+** components per project, reducing procurement discrepancies by standardizing part tracking and improving cross-team handoff accuracy.
- Completed full design-review cycles under a licensed P.Eng., gaining direct exposure to engineering sign-off workflows and technical documentation standards used in industry.

LEADERSHIP

Electrical Design Team Member

Sep. 2024 – Dec. 2025

Toronto MET Baja Racing

Toronto, ON

- Redesigned the vehicle's power distribution architecture by replacing point-to-point wiring with a busbar-based solution, reducing total wire count by **40%** and improving subsystem reliability under race conditions.
- Engineered a transistor-based emergency shutdown circuit capable of disconnecting all power under **40ms** of a fault signal, mirroring hardware-level watchdog protection logic used in embedded firmware systems.
- Assembled and soldered **30+** electrical connections across 4 subsystems in a high-vibration automotive environment, achieving near-zero resistance joints verified through continuity testing.

PROJECTS

Mini Multithreaded HTTP Server | C++, Linux, TCP Sockets

- Building a multithreaded HTTP/1.1 server in C++ by implementing TCP sockets and a custom request parser, enabling concurrent handling of client connections and serving static web content on localhost.
- Improving concurrency by designing a thread pool with a synchronized task queue, reducing request-handling overhead and allowing scalable parallel processing of HTTP requests.
- Implementing static file serving by integrating filesystem I/O and MIME-type handling, ensuring correct delivery of HTML, CSS, and images with proper HTTP responses.

AyahTrack | React, JavaScript, TypeScript, Node.js, Express, PostgreSQL, C++, ESP32

[GitHub Link](#)

- Built a full-stack "Islamic study progress tracker" web application to help users plan, monitor, and improve daily memorization and revision consistency in a structured learning system.
- Designed and implemented a React + TypeScript dashboard with RESTful APIs, PostgreSQL database integration, and secure JWT-based authentication for user sessions and access control.
- Extended the system into an IoT-enabled platform by integrating an ESP32 embedded device for real-time session tracking, progress syncing, and interactive feedback.

Maze-Solving Autonomous Robot | Assembly, HCS12 Microcontroller

[GitHub Link](#)

- Programmed an HCS12 microcontroller using **assembly language** to autonomously follow a maze using optical sensors to detect black tape, integrating real-time sensor processing, motor control, and navigation logic.
- Designed and implemented a finite state machine to detect T-intersections and dead ends, perform 180° recovery turns, and validate correct autonomous operation through testing and a live demonstration to **150+ people**.

ALU & FSM Central Processing Unit Design | VHDL, FPGA

[GitHub Link](#)

- Designed and implemented a custom 8-bit CPU on an Altera FPGA using **VHDL**, integrating an ALU, control unit, and registers to support arithmetic and logical operations with FSM-based instruction control.
- Verified system functionality by simulating CPU operations and interfacing a 7-segment display to visualize signed binary outputs, arithmetic results, and logic states for clear system validation.

TECHNICAL SKILLS

Languages/Libraries: Java, HTML, CSS, C, C++, VHDL, MATLAB, JavaScript, TypeScript, Python, SQL, Assembly.

Frameworks: React, Node.js, Express.

Technologies/Tools: Eplan, AutoCAD, Quartus, Arduino, Microsoft Office, AWS, MySQL, VS Code, Git.