

Mustafa Shahid

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EDUCATION

McMaster University

Hamilton, ON

Bachelor of Engineering, Electrical Engineering 3rd-year

Sep. 2022 – May 2027

Relevant Courses: Electrical Power Generation, Circuits & Systems, Signals & Systems, Electromagnetics, Electronic Devices & Circuits

TECHNICAL SKILLS

- * **Design/Hardware:** CAD (Autodesk Inventor), PCB Design, 3D Printing, Microcontrollers (Arduino, Raspberry Pi), Verilog, Soldering.
- * **Electrical & Analysis:** Circuit design, testing, troubleshooting, Power BI, Microsoft Access, LTSpice
- * **Programming:** Python, C, C++, MATLAB
- * **Documentation:** Report Writing, Feasibility Studies, Safety Compliance
- * **Collaboration:** Teamwork, Project Coordination, Vendor Communication, Organization

EXPERIENCE

Assistant Technologist

May 2024 – August 2024

ISDN Technologies Inc

Burlington, ON

- * Designed and implemented **hardware prototypes** using **Raspberry Pi** and **Arduino** for **embedded systems**, aligned with **regulatory safety standards**.
- * **Coordinated** with engineering teams and external **vendors** to ensure **design feasibility**, **component sourcing**, and **project success**.
- * Optimized **data processing algorithms** in **Python** and **C++**, improving system performance by **40%**.
- * Conducted **circuit testing** and **debugging** using **MATLAB**, producing internal documentation and ensuring **electrical safety compliance**.

Electrical Engineering Support Intern

May 2023 – August 2023

E2G Energy Services Inc.

Mississauga, ON

- * Performed **data analysis** and **system simulations** using **MATLAB** and **Verilog** to support **electrical system validation**.
- * Drafted **technical reports**, **feasibility assessments**, and **safety compliance documentation** based on Canadian electrical standards
- * Participated in client meetings and engineering reviews, contributing to **design proposals**, **requirement gathering**, and **engineering solutions**.
- * Supported evaluation of **low-voltage (LV) power distribution systems**, including **protection strategies** and **equipment sizing**.

PROJECTS

Autonomous Electric Vehicle System

Jan 2025 – Apr 2025

- * Designed and integrated control, localization, and mapping modules on a 1/10th scale autonomous vehicle using **ROS**, **Jetson Nano**, and **LiDAR**.
- * Implemented real-time mapping using fused data from **LiDAR**, **IMU**, and **wheel odometry**, enabling autonomous navigation.
- * Developed feedback and optimization-based controllers for path tracking and obstacle avoidance using **Python** and **C++**.

AI-Powered Medical Tool | (devpost.com/software/healai)

Feb 2023

- * Built an AI tool that analyzes physical injuries and suggests treatments using **Python** and **SKLearn**, demonstrating problem-solving skills and data-driven decision-making.
- * Achieved **80% accuracy** in symptom analysis, receiving the **Best Health Hack Award** at MacHacks 3.

Embedded Spatial Measurement Lidar System

Jan 2024 – April 2024

- * Developed a 3D-printed rotary mechanism using **time-of-flight sensor** technology to capture 360-degree distance measurements.
- * Collected and processed spatial data using a **microcontroller**, enhancing data acquisition for 3D reconstruction.
- * Emphasized **safety** and **accuracy** in designing and deploying time-of-flight sensors for measuring distances, meeting strict performance criteria.

EXTRACURRICULAR

ECE Ambassador/ @McMaster University

Sep 2024 – April 2025

- * Represented the ECE department at recruitment events and led campus tours to support **student outreach** and **engagement**.

Electrical and Computer Engineering Society Representative/ @McMaster University

Sep 2023 – April 2024

- * Organized academic review sessions and coordinated events to enhance **student-faculty interaction** and **peer support**.

Google Development Student Club/ @McMaster University

Sep 2023 – March 2024

- * Assisted in **planning** and **executing** technical workshops and challenges, contributing to a collaborative learning environment.