Basmalah Abdulmajeed

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Education

Engineering Bach. Management | Engineering Physics & Management | Minor: Nuclear Studies & Society (Nuclear Eng.)
McMaster University – Hamilton, ON **September 2024- May 2029**

Skills

Programming	Python, C, C++, MATLAB, HTML, SQL
Software	AutoCAD, Multisim, Maple, FlexPDE, COMSOL, Git, VS Code, Arduino IDE, Raspberry Pi (Linux), Microsoft 365
Lab	Oscilloscope, Waveform Generator, Multimeter, Spectrum Analyzer

Relevant Experience

Research Assistant **September 2025 – Present**
McMaster University – Hamilton, ON

- Researched and characterized microchip-based biosensors under the mentorship of Dr. Bradley and PhD candidates by evaluating the temperature sensitivity of gold nanoparticles and comparing findings with existing literature to support sensor optimization and validation

Accessibility Services Student Assistant **May 2025 – August 2025**
McMaster University – Hamilton, ON

- Optimized library cataloging system and created data sheets for accessible technology on McMaster's website
- Converted academic materials into accessible formats (MP3, Braille, etc.) using accessibility software and quality-checked outputs for accuracy, file integrity, and compatibility with assistive technologies
- Collaborated with a team on accessibility initiatives, incorporated user feedback, and aided in creating inclusive infrastructure

Print And Marketing Associate **June 2022 - January 2023**
Staples – Mississauga, ON

- Processed customer print orders using an online dashboard and advanced print software to ensure accurate, on-time delivery
- Communicated with customers to meet their needs and answered technology-related questions online, over the phone, and in-store

Projects

Vibrational Doorbell Bracelet
McMaster University

- Designed a low-cost wearable bracelet to auto-execute at boot and notify a deaf-blind user via vibration when the doorbell rings
- Built and tested circuits with voltage regulation, integrating a vibration motor, button, and power supply
- Led hardware assembly, including wiring, casing design, and troubleshooting of electronic and mechanical components
- Created a solid model and resolved design flaws related to casing fit and hardware layout

Key technologies: Raspberry Pi OS, GPIO interfacing, SSH/VNC, IP networking, API integration, AutoCAD

Student Number Sequencer
McMaster University

- Designed and built a JK flip-flop finite-state machine (FSM) to cycle a custom digit sequence on a 7-segment display plus extra state bits to handle repeated digits

Key technologies: BCD-to-7-segment decoding (74LS48 / CD4511), oscilloscope, waveform analysis, Multisim

Luggage Processing Prototype
McMaster University

- Created a mini–luggage processing prototype to transport luggage across platforms
- Led team coordination and documented progress through meeting minutes and ensured accurate luggage sorting and system reliability

Key technologies: AutoCAD (3D modeling), Python libraries (data processing)

Extracurricular Activities

Vice President External **October 2024 - Present**
Engineers Without Borders – Hamilton, ON

- Fostered collaboration while leading a team focused on driving impact through innovation, technical knowledge, and advocacy
- Built and maintained partnerships with external organizations and coordinated outreach projects that addressed global development
- Oversaw awareness campaigns promoting engineering-driven social change on and off campus

Electrical Design & Integration Member **September 2025 – Present**
Medical Engineering Design Team – Hamilton, ON

- Collaborated with a multidisciplinary team on a healthcare design challenge to develop an accessible engineering solution
- Calibrated and designed electrical components of the project, including circuit design, sensor integration, and system testing
- Coordinated across sub-teams on weekly deliverables, strengthening communication, time management, and technical skills

Ambassador **October 2024 - Present**
Women In Engineering Society – Hamilton, ON

- Created and presented engaging sessions to high school students, sharing stories about McMaster Engineering
- Highlighted the diverse opportunities in engineering to inspire young women to pursue STEM careers and fostered connections with aspiring engineers through interactive discussions and mentorship