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**

Relevant Experience

Student Research Assistant   **September 2025 – Present**
McMaster University – Hamilton, ON
- Researched biosensor development and characterization with the mentorship of Dr. Bradley and PhD candidates
- Analyzed microchip-based biosensors, with a focus on evaluating temperature sensitivity of gold nanoparticles and comparing results with existing literature to support sensor optimization and validation

Accessibility Services Student Assistant   **May 2025 – August 2025**
McMaster University – Hamilton, ON
- Optimized the Libraries cataloging system and worked on the McMaster website creating data sheets for accessible technology
- Utilized advanced accessibility and engineering-relevant software tools including ABBYY FineReader, Adobe Acrobat Pro, Kurzweil, and SensusAccess to automate and optimize document conversion workflows
- Transcribed and converted academic content into accessible formats (MP3, Braille, etc)
- Applied detail-oriented document processing and digital problem-solving skills to ensure format accuracy, file integrity, and compatibility across assistive technologies
- Collaborated with team members on university-wide accessibility initiatives, contributing to long-term inclusive infrastructure

Print And Marketing Associate   **June 2022 - January 2023**
Staples – Mississauga, ON
- Reviewed the online dashboard and filtered the processing of customer orders in an efficient, accurate manner.
- Managed projects while following proper production procedures and using advanced print software
- Operated cash registers while following all loss prevention measures
- Communicated with customers to meet their needs and answered questions online, over the phone, and in store

Projects

Vibrational Doorbell Bracelet – Assistive Wearable for Deaf-Blind User
McMaster University
- Designed a low-cost wearable system using Raspberry Pi, Python (GPIO, networking libraries), and VNC to notify a deaf-blind user via vibration when the doorbell rings
- Configured Raspberry Pi OS, enabled SSH/VNC, and set up system services for auto-execution at boot.
- 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
- Supported teammates with CAD modeling and resolved design flaws related to casing fit and hardware layout

Luggage processing prototype | Python, CAD
- Worked with a team to Create a mini–Luggage Processing Prototype to transport luggage across platforms
- Applied Python for data processing and debugged team code
- Designed a solid model CAD model, optimized mechanical efficiency, and selected fabrication materials
- Led team coordination and documented progress through meeting minutes
- Integrated passenger & fleet data, ensuring accurate luggage sorting and system reliability

Extracurricular Activities

Vice President External   **October 2024 - Present**
Engineers without borders – Hamilton, ON
- Lead a team focused on driving meaningful social and environmental impact through engineering initiatives
- Coordinate outreach projects that address sustainability, inequality, and global development
- Build and maintain partnerships with external organizations to support EWB's mission and community involvement
- Oversee awareness campaigns promoting engineering-driven social change on and off campus
- Foster collaboration within team to integrate innovation, technical knowledge, and advocacy into every initiative

Electrical Sub Team Member   **September 2025 – Present**
Medical Engineering Design Team – Hamilton, ON
- Collaborate with a multidisciplinary team on a healthcare design challenge aimed at developing an accessible engineering solution
- Calibrate and design electrical components of the project, including circuit design, sensor integration, and system testing
- Coordinate with software and hardware members to ensure smooth electrical functionality within the prototype
- Strengthen communication, time management, and technical collaboration skills through weekly meetings and deliverables

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
- Fostered connections with aspiring engineers through interactive discussions and mentorship

Career Related Skills

Programming	Python, C++, MATLAB
Software	AutoCAD, Office 365, Multisim, Maple, FlexPDE, COMSOL
Lab	Oscilloscope, Waveform Generator, Multimeter, Spectrum analyzer