Boluwatiwi Mafikuyomi
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EDUCATION

McMaster University | Major: Electrical Engineering **Expected May 2028**

- *Mentor* Women in Engineering |*member*, National Society of Black Engineers | *member* McMaster Midnight Association | *Executive team intern* Paper Trails Society

Niagara Christian Collegiate | High School Diploma

- *member,* NCC Model UN | *Executive Council Member,* Student Council| *Member,* NAVS Athletic Leadership Team | *Member,* Health leadership Community| *Volunteer* Math Tutor

Honors & Awards: Koledoye Award for Creative Writing, Eleanor Roosevelt Award for Diplomacy, McMaster Engineering Competition Finalist.

EXPERIENCE

Research Assistant May 2025 – August 2025

Learning Factory| McMaster University

- Developing a comprehensive simulation model of a residential microgrid using Simulink.
- Integrating solar generation, energy storage systems, and a realistic residential load profile.
- Simulating the system under various scenarios: normal grid-connected operation, outages, and islanded modes.
- Optimizing the microgrid for cost, efficiency, and reliability by adjusting battery and PV sizing.
- Evaluated system performance metrics such as state-of-charge, energy autonomy, and unserved energy.

Research Assistant May 2024 – December 2024

Learning Factory | McMaster University

- Developed a dynamic web application using Flask, Python, HTML, CSS, JavaScript, and MongoDB. Implemented a secure user authentication system and designed an intuitive dashboard that provides updates on 3D printing projects, including status tracking and upload management.

Technological Development Team April. 2024 -Current

Pathway Pavers

- Founding member of a student outreach program alongside a group of motivated black University students.
- Organize monthly webinars, student outreach programs and workshops for black high school students.
- Developed a website for students to easily access information on scholarships, opportunities e.t.c.

Project Manager February. 2024 - March. 2024

Flex View | McMaster University

- Led a team in the design and development of an adjustable rear-view mirror prototype for electric wheelchairs to enhance visibility and independence for users with mobility challenges.
- Managed the entire project lifecycle, including initial research, design, prototyping, and final delivery. Ensured that the prototype was user-centered, focusing on portability, ease of use, and cost-effectiveness.
- Oversaw team collaboration, addressed structural issues, and guided the team in iterating design solutions to meet the client's specific needs.
- Delivered a functional and innovative product that significantly improved the client's quality of life.

Projects

Astable Multivibrator

Utilized Altium to design an astable Multivibrator with a generated bill of materials, design rules check report, NC drills files and Gerber files, from schematic to full PCB, releasing outputs to a workspace.

Flexview

Designed a durable, portable and maintainable tool that provided our client with a wider range of vision.

ScotiaBuzz

Utilized Tailwind, React.Js and Typescript to design a reactive web platform that aids Scotiabank clients detect fraudulent messages.

LED PCB board

Designed a full PCB board, successfully creating schematic symbols, footprints, PCB stack up, set up layers and generated output files for manufacture (Pick and place, Assembly drawing layers, Gerber, NC Drill and BOM).

SKILLS

MATLAB & Simulink| Altium| Microsoft office |Python | SQL| MongoDB | Autodesk Fusion 360 | Arduino IDE | Raspberry pi | Html & CSS |