Matthew Embaye

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Education

University of Waterloo **Sep. 2024 – Apr. 2029**
Bachelor of Applied Science, Electrical Engineering Waterloo, ON

- President's Scholarship (2024), Alexander Rutherford Scholarship (2024)

Experience

FIRST Robotics, Team 4627 **Nov. 2023 – Mar. 2024**
Electrical/Mechanical Team Member Calgary, AB

- Built and designed the **"Excellence in Engineering" Award**-Winning robot for Team 4627 in the 2024 Crescendo Challenge using **Autodesk Fusion 360**, wiring, and assembling skills
- Made a robot to pick up and shoot discs into various targets and ultimately hang from a chain being shared with other robots within a specific time while competing and collaborating with other robots
- Collaborated with a **multidisciplinary ~50-person team** in a communication-focused environment to design, build, and validate chassis, wiring, and hardware prototypes

Midnight Sun Solar Rayce Team **Sep. 2024 - Present**
Hardware Team Member Waterloo, ON

- Designed and assembled various printed circuit boards using **Altium** for the accredited University of Waterloo design team, designing boards for a variety of applications, notably breakout and testing boards for the Solar Race Vehicle
- Collaborating with a **multidisciplinary >300-person team** to design a vehicle to compete in various solar car competitions. For more information, visit: www.uwmidsun.com

Westside Recreation Centre **Sep. 2023 – Aug. 2024**
Youth Worker Calgary, AB

- Exemplified **communication and teamwork** skills by managing queues and supervising volunteers, coordinating new ideas and methods for tasks, while training coworkers and new hires to improve customer service
- Improved operational efficiency by coordinating workflows among volunteers and staff, resolving conflicts and handling challenging situations, while ensuring a safe and welcoming environment for all guests

Projects

Arduino Bluetooth Race Car **Dec. 2023**
Personal Engineering Project Calgary, AB

- Planned, designed, built, and tested a remote-controlled race car utilizing an **Arduino** microcontroller programmed with **C++**, capable of being controlled via mobile device
- Tested and refined various iterations using a variety of technologies including infrared controls, motor controllers, and different chassis utilizing motor and technical skills in circuit design, soldering, and assembly

Portable Patient Alert System (PPAS) Lead **Sep. 2024 – Nov. 2024**
Team Lead, Design Studio Project Waterloo, ON

- **Lead a 5-person group** while researching, proposing, designing, prototyping and testing a portable vital reader to check for heart rate and temperature levels, outputting data on an LCD display alongside an alarm system, using a **STM32** microcontroller programmed with **C++**, and various sensors
- Led designs, delegated tasks, organized deadlines, and led the process of creating proposals and design documents for council approval, fabricating, testing, and demonstrating prototypes to diligently follow the engineering process

Technical Skills

Software & Tools: C++, Altium, VS Code, Autodesk Fusion 360, Revit

Skills & Interests: Design, Verification, and Fabrication skills from FIRST robotics, Car, and Vital Reader Projects, Expertise in Computer Literacy (IT), PC building, Troubleshooting Skills, Circuit Design, PCBs, Hardware QA and Testing