GARRETT WOODSON

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EDUCATION

McGill University, 3.98 GPA — **Montreal, Canada**
BEng. in Software Engineering Co-op, Minor in Artificial Intelligence — **2022-2027**

- J.W. McConnell Scholarship: Awarded by McGill University based on high academic standing, qualities of leadership in community and school activities, and faculty recommendations.

SKILLS

- **Programming and Scripting Languages**: C++, Java, Python, JavaScript, C, C#, SQL, Bash
- **Frameworks and Tools:** React, Flask, Pandas, NumPy, Bokeh, ROS, VHDL, Git, GitHub
- **Spoken Languages:** Native English, Intermediate French

ENGINEERING EXPERIENCE

Rogue Research — **Montreal, Canada**
Embedded Software Developer Intern — **May 2024-August 2024**

- Developed and tested C++ embedded software for the VetRobot a microsurgical robot used in neurosurgery.
- Refactored the Server-Client communication protocol, improving maintainability and system resilience.
- Prevented robot crashes by implementing a boundary limit check for movement commands.
- Lowered minimum injection speed by 90%, overcoming compatibility issues by integrating a new Python API.
- Created a robot emulator to facilitate faster testing without relying on physical hardware.

McGill Robotics — **Montreal, Canada**
Software Team Member — **September 2023-August 2024**

- Contributed to software development of an autonomous rover designed to explore the surface of Mars.
- Utilized AI search algorithms (A*, Dijkstra's) to create a dynamic path planning algorithm for rover traversal.

Quebec Engineering Competition (QEC), 4th Place Junior Design — **January 2023**

- Won McGill Engineering Competition 2022. Placed 4th in Junior Design Competition at QEC 2023. Responsible for designing, constructing, testing, and presenting a prototype robot created to solve a real-world problem.

PERSONAL PROJECTS

***Swimming with a Mission Montreal* Swimmer-Instructor Pairing Application** — **August 2024**

- Led development of a full-stack web application using Python Flask and React.js to streamline swimmer-instructor pairings for a local non-profit offering swim lessons to children with disabilities.
- Implemented features to upload and filter data, create pairings, and automatically assign lesson times.

Laptop Power Bank — **August 2023**

- Designed and created a fully functional 100 W laptop power bank integrating USB-C power delivery protocol.

Interactive Movie Voter — **May 2023**

- Composed an interactive web application designed to help users decide what movies to watch with friends.
- Integrated IMDb datasets to provide users with over 400,000 movie titles to choose from.

Detailed Descriptions of these and additional projects available at gwoodson1.github.io

LEADERSHIP EXPERIENCE

The Cube — **Montreal, Canada**
3D Printing Operations Manager — **March 2023-May 2024**

- Oversaw a team of eight technicians to facilitate the reception, production, and delivery of additive manufacturing orders for students, researchers, and the public.
- Increased number of orders by 90% and sales by 239% by streamlining order process.
- Performed regular maintenance and troubleshooting on six FDM and SLA printers.