Aidan Kimberley

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aidankimberley

Summary

Analytical and versatile engineering student at McGill University with experience in robotics R&D, data-driven problem solving, and cross-disciplinary collaboration. Adept at applying engineering principles, statistical analysis, and creative design to deliver high-impact solutions. Proven track record in research, leadership, and technical execution, with work featured at the IEEE International Conference on Robotics and Automation.

Education

Montreal, QC

B.Eng., Mechanical Engineering — McGill University *2021–2026 (exp.)*
Minor: Applied Artificial Intelligence
CGPA: 3.88/4 – Dean's Honor List (Top 10%)
Awards: SAG Conference Award Foundation Scholarship
Relevant Coursework: Control Systems, Numerical Optimization, Manufacturing, Analog/Digital Electronics, Applied Machine Learning

Experience

Natick, MA

R&D Intern — Altec Research / Delsys *May 2025 – Aug 2025*
Validated human pose tracking software with injury-prevention applications.
Performed motion capture data collection, processing, and analysis.

Boston, MA

Research Intern — Mass General Hospital IHP *Jan 2024 – Aug 2024*
Debugged and optimized hardware/software for TMS and DC stimulation protocols.
Independently solved technical lab issues.
Analyzed noisy datasets and extracted insights using MATLAB.

Boston, MA

Undergraduate Research Fellow — Harvard Biodesign Lab (Conor Walsh, PhD) *Apr 2022 – Aug 2023 (2 summers)*
Designed, fabricated, and tested wearable ankle exoskeleton robots and pneumatic control boxes.
Fabricated devices via 3D printing, machining, electronics assembly, carbon fiber molding.
Ran benchtop/on-body testing (MATLAB, Simulink, Qualisys, EMG, force plate).
Improved device performance: mechanical advantage, stiffness, yield strength, comfort, adjustability.

Montreal, QC

Suspension Team Member — McGill Formula Electric *Oct 2022 – May 2023*
Designed suspension system components for electric race car using Siemens NX and FEA.

Publications

Cooper, M., Canete, S., Eckert-Erdheim, A., Kimberley, A., et al. (2024). *Design & Systematic Evaluation of Power Transmission Efficiency of an Ankle Exoskeleton for Walking Post-Stroke*. IEEE Int. Conf. on Robotics and Automation (ICRA), 5526–5532.

Skills

Robotics & Mechatronics: Mechanical design, wearable robotics, pneumatic systems, benchtop/on-body testing.

Design & Fabrication: SolidWorks, Siemens NX, AutoCAD, Abaqus; CNC machining, SLS/FDM 3D printing, carbon fiber molding, thermoforming, electronics assembly.

Programming & Analysis: Python, MATLAB, C/C++, Java, TypeScript; PyTorch, TensorFlow; MATLAB/Simulink; data processing and statistical analysis.

Motion Capture: Vicon, Qualisys, EMG integration, force plate analysis.

Management & Communication: Technical writing, project coordination, team collaboration, leadership in research/engineering teams.

Other

Athletics: McGill XC Ski Team, mountain biking, running, weight lifting, rock climbing, MMA. Hobbies: Piano