CAMERON SJAARDA

MECHATRONICS 4A

519-525-0242 CSJAARDA@UWATERLOO.CA

# Objective

Highly motivated and dedicated individual seeking a position in academic research to contribute to the field of soft robotics and pursue a career in research.

# Professional Experience

**Soft Robotics Research Assistant,** University of Waterloo, Waterloo, ON January 2023 - Present

* Design researcher for the development of a soft rigid robotic hand and McKibben Muscles
* Designed and executed tests for evaluating the performance of the hand and muscles.
* Collected and analyzed data, contributing to research findings and publications.

**Aeroacoustics Researcher,** Bombardier, Toronto, ON May 2022 - August 2022

* Conducted tests and developed methods to predict and analyze airframe noise.
* Analyzed test data and presented findings to the research team.
* Collaborated with a multidisciplinary team to improve noise reduction strategies.

**Teaching Assistant,** Sheridan College, Brampton ON January 2021-April 2021

* Organized and conducted tutorials, providing guidance to students.
* Conducted private lessons to assist students in understanding course material.

# Skills

* Research: Strong research skills with experience in soft robotics and aeroacoustics research
* Rapid Prototyping: Proficient in rapid prototyping techniques for developing robotic systems.
* 3D Modeling: Skilled in using 3D modeling software (e.g., SolidWorks, AutoCAD) for design and visualization purposes.
* Electrical Design: Familiar with electrical design principles, circuitry, and PCB design
* Programming: Proficient in Python, MATLAB, C++, C, and Swift for algorithm development and control systems implementation
* Finite Element Method (FEM): Experience in using FEM software (e.g., COMSOL, ANSYS) for mechanical modeling and simulation.
* Control Systems Design: Designing control structures for robots and autonomous systems to optimize performance and stability.
* Sensor Integration: Integrating various sensors (e.g., IMUs, force sensors, vision systems) into robotic platforms for feedback and perception.
* Data Analysis: Proficient in analyzing and interpreting experimental data using statistical methods and data visualization tools (e.g., MATLAB Toolboxes)
* Robotics Kinematics and Dynamics: Strong understanding of robot kinematics and dynamics for motion planning and control as well as mapping kinematic workspaces using DH parameters.

# Publications and Conferences

* Published paper on soft robotic hand development.
* Attendee at the Canadian Society of Mechanical Engineers Conference in 2023