MAXWELL PALEN ANDERSON

303-562-7266 ⋄ maxwell.anderson@colorado.edu ⋄ maxwell-p-anderson.github.io/portfolio/

EDUCATION

University of Colorado, Boulder

Master of Science in Mechanical Engineering — Robotics and Controls Focus — 05/2023 — GPA: 3.625

Bachelor of Science in Mechanical Engineering — Engineering Honors Program — 05/2022 — GPA: 3.536

WORK EXPERIENCE

Student Research Intern: NorthWest Research Associates 06/2021 - 08/2022

- Matlab Software development, data collection, and data analysis on atmospheric data.
- Developed standardized file formats, naming conventions, and data structures.
- Calculated and analyzed second-order statistics to evaluate micro-meteorological theories.

Undergraduate Researcher: Advanced Medical Technologies Laboratory 03/2019 - 05/2021

- Applied for grants to conduct surgical robotics and soft robotics research. Received over $5000 in funding.
- Designed a novel electromechanical tether for a robotic capsule endoscope.
- Designed novel experimental platforms for manufacturing, data collection, and sensor calibration.

→ Sundaram V, Ly K, Johnson B, Naris M, **Anderson MP**, Humbert S, Correll N, Rentschler M, "Embedded Magnetic Sensing for Feedback Control of Soft HASEL Actuators", *IEEE Transactions on Robotics*, 2022.

PROJECTS

Soft Robot for Minimally Invasive Surgery 2021-2022

Research & Development: Developed a soft robot that can perform complex actuation based on research.
Project Management: Technical Lead: Lead design discussions, finalized decisions, coordinated team.
Industry Clients: Team communication manager in charge of working with our three clients.
Prototyping: 55+ prototypes: Iteration, optimization, and qualitative/quantitative testing.

Linear Displacement Correlation Platform 2021

Scholarly Publication: Work earned a co-authorship on a paper published in IEEE T-RO.
Time Management: Ensured completion of design and fabrication on a limited three-week schedule.
Mechanical Design: Designed a mechanism that displaces a magnet at 0.1 mm increments.

Calibration of Magnetometer and Magnetic Sensing Skin for Soft Actuators 2020

Calibration Validation: Developed validation procedures to assess accuracy of calibration method.
Design Requirements: Designed calibration platform using only magnetically inert materials.
Technical Writing: Prepared and submitted research proposal to the Biological Sciences Initiative.

Robotic Capsule Endoscope (RCE) Tether 2019

CAD & Manufacturing: Generated CAD and engineering drawings to manufacture unique hardware.
Iterative Design: Developed a novel tether that was thin, flexible, with concentric tooling channel.
Collaboration: Integrated individual and collaborative work in an ongoing research project.

AWARDS

- BSI Scholars Continuation Funding, $2500. Funding for work on Mag-skin project. 2020 - 2021
- Biological Sciences Initiative Scholars Award, $2500. Funding for work on RCE tether project. 2019

TECHNICAL STRENGTHS

Rapid Prototyping	3D Printing: Stereolithography & Filament Deposition, Laser Cutting
Manufacturing Methods	Lathes, Mills, Band & Miter Saws, Drill Presses, CNC Routing
Software & Tools	Arduino, Corel Draw, Excel, Latex, HTML, CSS
CAD & Technical Drawings	Certified SolidWorks Associate, GD&T, DFMA
Programming Languages	MatLab, C++