

# MAXWELL PALEN ANDERSON

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## EDUCATION

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### University of Colorado, Boulder

Master of Science in Mechanical Engineering — Robotics and Controls Focus

Expected 2023

Bachelor of Science in Mechanical Engineering — Engineering Honors Program

05/2022 — GPA: 3.536

## WORK EXPERIENCE

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### Student Research Intern: NorthWest Research Associates

06/2021 - 08/2022

- 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

- Conducted biomedical and soft robotics research.
- Designed novel experimental platforms for manufacturing, data collection, and sensor calibration.
- Designed a novel electromechanical tether for a robotic capsule endoscope.

→ 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

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### 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 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

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- 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

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### Rapid Prototyping

3D Printing: Stereolithography & Filament Deposition, Laser Cutting

### CAD & Technical Drawings

Certified SolidWorks Associate, GD&T, Ordinate Dimensioning

### Manufacturing Methods

Lathes, Mills, Band & Miter Saws, Drill Presses, CNC Routing

### Software & Tools

Arduino, Corel Draw, Excel, Latex, HTML, CSS

### Programming Languages

MatLab, C++