Digital Copy

CARSON FARMER

(540) 793-6492 | Roanoke, VA | cfarmer6@liberty.edu | **linkedin**.com/in/carson-farmer
cfarm6.github.io/

EDUCATION

B.S. Mechanical Engineering Anticipated May 2021
Liberty University - Lynchburg, VA
- GPA: **4.0/4.0**
- Minor: **Mathematics**
- Relevant Coursework: Material Science, Mechatronics, Dynamic Systems, Numerical Methods
- Leadership: **President** - Engineering Missions and Research Club Aug. 2018 - Present
- Awards:
  - **NSF-GRFP Honorable Mention** 2021
  - **NXP Hardware Bonus Prize** - NXP Hovergames 2.0 [**Entry**] March 2021
  - **Phase I Finalist** - OpenCV AI Competition 2021 [**Link**] March 2021
  - **DoD S.M.A.R.T. Semi-Finalist** 2021
  - **Best Undergraduate Creationeering Award** - Best undergraduate researcher 2020
  - **First Place - Applied Research Poster** - Research Week 2020 [**Poster**] Apr. 2020

PUBLICATIONS

- Medina, H. and **Farmer, C.W.**, 2020. Improved Model for Conical Dielectric Elastomer Actuators With Fewer Electrical Connections. *Journal of Mechanisms and Robotics*, 12(3). [**Paper**]
- **Farmer, C.W.** and Medina, H., 2020. Dimensionless Parameter-Based Numerical Model for Double Conical Dielectric Elastomer Actuators. *Engineering Research Express*. [**Paper**]
- **Farmer, C.W.**, Gentry, N., and Medina, H., Remote Lab, Soft Actuators, and Machine Learning: Experimenting During a Pandemic. Poster Presented at: ASME IMECE 2020, 2020 Nov. 16-19

PROFESSIONAL EXPERIENCE

Undergraduate Researcher - Lynchburg, VA Aug. 2018 - Present
Liberty University - Dr. Medina's T.R.A.C.E.R. Lab Group
- Successfully recruited a total of 8 students and facutlty for OpenCV AI Competition
- Mentored two student researchers in the autonomous drone and sensor fusion research
- Provided support for ENGR 330 (Mechatronics) lab classes
- Developed drone for autonomous monitoring of crowds for transmission of COVID-19
- Implemented remote lab procedures for research group in response to Covid-19 mandates
- Utilized reinforcement learning controller for nonlinear hyperelastic soft actuators
- Worked to develop optical vibration dampening system utilizing soft actuators, sponsored by Directed Energy Professional Society
- Developed gesture based controllers for double-conical dielectric elastomers
- Formulated analytical method for finding performance of nonlinear soft actuators with Matlab
- Developed a framework in Julia for comprehensive hyperelastic material modeling framework

Entrepreneurial Engineering Intern - Remote May 2019 - Aug. 2019
The World Alliance for the Volunteer Economy: Entrepreneurial Ventures
- Created startup idea for using laser communications to provide internet to the Navajo Nation
- Worked with a mentor to develop a knowledge of electro-optical system design
- Developed strategic partnerships within the target community
- Identified and formed team for writing a Small Business Innovative Research Phase I grant

Mechanical Engineering Intern - Roanoke, VA May 2019 - Aug. 2019
Valcom
- Utilized SolidWorks for the design of injection molded and sheet metal enclosures
- Performed thermal, water, and stress tests on different product enclosure designs
- Improved cable strain-relief design on existing products with SolidWorks and experimental testing
- Conducted market research for new product development

Engineering Intern - Port-au-Prince, Haiti & Roanoke, VA June 2018 - Aug. 2018
AECOM
- Implemented performance tracking for documentation to improve productivity of Haiti office
- Conducted site inspections with other engineers to assess safety and construction concerns
- Created document templates and workflow to improve reoccurring reporting

SKILLS

Programming Languages: Matlab, Simulink, Julia, Python, C, C++, Mathematica, LaTeX
Software: PyTorch, SolidWorks, Ansys, AutoDesk Inventor, PSpice, LabView, MS Projects, Genesys