Digital Copy

LUcfarmer6.github.io/

CARSON FARMER

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EDUCATION

B.S. Mechanical Engineering Anticipated May 2021

Liberty University - Lynchburg, VA

- GPA: **4.0/4.0**
- Minor: **Mathematics**
- Relevant Coursework: Mechatronics, Dynamic Systems Modeling, Numerical Methods
- Leadership: **President** - Engineering Missions and Research Club Aug. 2018 - Present
- Awards: **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 - Soft Robotics Research Group

- Implemented remote lab procedures for research group in response to Covid-19 mandates
- Utilized machine learning controllers for nonlinear hyperelastic soft actuators
- Determined relationships between geometry and soft actuator performance in Julia
- Received a grant from Directed Energy Professional Society for research on vibration dampening for laser communication systems
- Developed gesture based controllers for double-conical dielectric elastomers
- Formulated analytical method for determining performance of nonlinear soft actuators with Matlab
- Utilized differential equation solvers in Julia to create comprehensive hyperelastic 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 Small Business Innovative Research Phase I funding opportunity and formed the team to write the 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: SolidWorks, Ansys, AutoDesk Inventor, PSpice, LabView, MS Projects, Genesys