

# Austin South

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US Secret clearance, active (July 2021 – present)

## Education

### University of North Carolina at Charlotte

GPA: 3.97 / 4.00

December 2022

B.S. in Mechanical Engineering

- University Honors Program
- University Scholars Program (Albert Engineering Leadership)
- Engineering Honors Program

## Experience

### Human Factors Engineering Design Intern

June 2022- August 2022

NASA - National Aeronautics and Space Administration (Marshall Space Flight Center, EV74), Huntsville AL

EV74 is the systems analysis and Human Factors Engineering branch in the Spacecraft & Vehicle Systems group

- Analyzed a Mars Transit Habitat for human factors deficiencies and improved usability using Siemens NX, Process Simulate Human and VR
- Used creative problem solving to optimize building space for future spacecraft mockup models using Creo Parametric and agile development
- Increased engineering efficiency across departments by effectively communicating and implementing VR/AR capabilities with other groups

### Mechanical Engineering Testing and Analysis Co-op

June 2021- January 2022

General Dynamics Mission Systems, Greensboro NC

GDMS is creating unique solutions for extreme environment undersea communications, monitoring, and mission support

- Persevered with problem-solving efforts to configure/utilize an IP camera system for high framerate test analysis & design improvement
- Designed in SolidWorks & led a team in the construction of a 60-ft test stage saving the company \$10,000 in costs by repurposing equipment
- Worked closely with an interdisciplinary team on verification testing and documentation that led to a successful CDR on a \$253M contract

### Biomedical Optics Laboratory Researcher

May 2020- May 2021

UNC Charlotte Physics Dept, Charlotte NC

- Constructed, calibrated, and resolved issues with electrical/optomechanical testing & validation instrumentation for experimental lab studies
- Published results from research using MATLAB for data visualization as 1st author in a peer-reviewed paper in the journal Optical Engineering
- Presented a research summary at the SPIE Photonics West Conference 2021 following the publication of FEA research in a conference paper

Published written work as an author on four papers, Publication record: <https://orcid.org/0000-0002-9968-7177>

### Product Development Intern

November 2019- January 2020

Eventys Partners, Charlotte NC

Focused on bringing innovative ideas to life, Eventys Partners takes ideas from clients, designs the product, patents it, and brings it to market

- Learned from engineers and machinists through the entire product development process from idea to fruition (cradle-to-grave)
- Utilized manufacturing techniques in a machine shop to fabricate beta prototypes, making design adjustments and documenting them
- Fabricated prototypes and tested various material selections and mechanical designs for products used in patent applications

## Unique Engineering Projects

### Lead Design Chair

January 2019- Present

The Helping Hand Project, Charlotte NC

The HHP club focuses on the inclusion and encouragement of children with limb differences through customized recreational prosthetics

- Optimized prosthetics for children based on their feedback by modeling the 3D printed mechanical limbs in Blender and Simplify 3D
- Facilitated involvement for 40+ people in the design and fabrication of biomedical prosthetics for children with limb differences

### Rural Electrification Project Engineer

June 2019- August 2019

WindAid, Trujillo Peru

Providing clean and reliable energy for remote areas in Peru without access to traditional sources of energy is the purpose of WindAid

- Collaborated with a multicultural team to build an experimental vacuum chamber to create stronger turbine blades for remote use
- Welded joints and supports for a 20ft 500W turbine tower and created resin cast blades with steel, foam, fiberglass, and carbon fiber

## Skills

Design: Solidworks, Creo Parametric, Siemens NX/Process Simulate/TC, Simplify 3D, STAR-CCM+, Microsoft Office

Digital: Solidworks FEA/FEM, RobotC, C/C++, Java, HTML, MATLAB, LabView, Multisim, IP networks, NI-DAQ, ANSYS

Physical: Welding, wiring/soldering, milling, 3D printing, laser cutting, waterjet cutting, lathing, thulium fiber lasing, carpentering

## Achievements

- Graduate of the Engineering **Leadership** Academy at UNC Charlotte (August 2019- May 2021)
- Awarded an undergraduate **research fellowship** from the Charlotte Research Scholars Program (Summer 2020)
- Two-time Recipient of the Chick-Fil-A Emerging Leaders Scholarship for **excellence** in the workplace (2018-2019)
- FIRST Robotics Alumni (Team Captain of team #6972) (2010-2018)
- Attained the rank of **Eagle Scout** in the Boy Scouts of America (June 2016)