# Austin South

704.968.7971 | AustinAlexanderSouth@gmail.com | LinkedIn: /in/AustinSouth/ | Website: austinsouth.github.io | Charlotte, NC

**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

**Mechanical Engineering Testing and Analysis Co-op** June 2021- January 2022

General Dynamics Mission Systems, Greensboro NC

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

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

**Biomedical Optics Laboratory Researcher** May 2020- May 2021

UNC Charlotte Physics Dept, Charlotte NC

- Published results from research using MATLAB for data visualization as 1st author in a peer-reviewed paper in the journal Optical Engineering
- Constructed, calibrated, and resolved complex issues with electrical and optomechanical testing & validation equipment for laboratory studies
- 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

Enventys Partners, Charlotte NC

Focused on bringing innovative ideas to life, Enventys 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 industrial manufacturing techniques to fabricate beta prototypes, making design adjustments and documenting them
- Created prototypes and tested various material selections and mechanical designs for products used in patent applications

**Robotics Based Smart City Infrastructure Researcher** August 2019- May 2020

UNC Charlotte Engineering Dept, Charlotte NC

- Modeled and fabricated initial smart-city research testbed components after communicating about requirements directly with the professor
- Researched hardware requirements and electrical component compatibility for multi-agent robotics research (Arduino and Pololu Zumo)

**Engineering Teaching Assistant** August 2019- December 2019

UNC Charlotte Engineering Dept, Charlotte NC

- Provided personalized guidance on writing, math, electronics, engineering, and self-discovery projects for freshman engineering students
- Taught select topics to the class of 24 students after discussing best practices in pedagogy with engineering professors

## 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

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

**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 installing a turbine and wiring all powered lighting for the remote Jesús Maria Community Center
- 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, Autodesk Inventor, Simplify 3D, Microsoft Office (Excel, Word, PowerPoint, Project, Visio)
Digital: Java, Solidworks FEA/FEM, RobotC, C/C++, 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)
- Attained the rank of **Eagle Scout** in the Boy Scouts of America (June 2016)