

# Samuel Gossett

[sgossett2020@gmail.com](mailto:sgossett2020@gmail.com) | (704) 840-9326 | [www.sgossettportfolio.com](http://www.sgossettportfolio.com) | Boston, MA

## EDUCATION

---

### Boston University

Master of Science in Robotics and Autonomous Systems

Boston, MA

Expected Dec 2025

- Relevant coursework: Motion Planning, Robot Deep Learning, Embedded Systems, Modern Control Theory

### Clemson University Honors College

Bachelor of Science in Mechanical Engineering; Minor in Mathematics

Clemson, SC

May 2024

- GPA: 3.80/4.00

## EXPERIENCE

---

### Robotics Lab Assistant | Clemson University

Clemson, SC | Jan 2022 - May 2024

- Collaborated on nonlinear dynamics, quadruped control, and node-based planning
- Acquired data using ROS, MATLAB, and Python to support motion-planning investigations inside Quad-SDK
- Enhanced quadruped LiDAR research by creating a snap-on battery pack, cutting setup time by 10 minutes

### Medical R&D Engineering Intern | Medical Murray

Charlotte, NC | May 2023 - Aug 2023

- Developed and streamlined prototypes of delivery systems, catheters, and implants boosting productivity
- Formulated and fabricated a device fixture and stencil using Solidworks and prototyped using drill-press, milling, and lathe to reduce feasibility testing time from 2 minutes to 15 seconds
- Conducted Design Verification tests using pneumatics, tensile testers, hot boxes, and EFD machines
- Drafted Manufacturing Process Indices, Engineering Change Orders, Design Verification reports, and Feasibility tests to consolidate key information

### Application Engineer Intern | Ellison Technologies

Charlotte, NC | May 2022 - Aug 2022

- Implemented Doosan robotic tools into manufacturing cycles with Solidworks and Python, increasing production
- Designed and collaborated on autonomous manufacturing cells via Solidworks, ABAQUS, and time studies
- Spearheaded integration of Doosan robots into manufacturing cells using Python

## PROJECTS

---

### Sample-Based Planning in Quadrupeds (Undergraduate Thesis)

Jan 2023 - May 2024

- Synthesized Probabilistic Road-Map using Python to navigate a simulated maze
- Developed ROS and MATLAB scripts to communicate with and track a Unitree Quadruped in Gazebo and RVIZ
- Investigated the quadruped's footstep accuracy, resulting in a leg redesign to enhance step repeatability by projected 20%+
- Presented to a panel of Mechanical and Electrical engineers resulting in Departmental Honors distinction and thesis award

### FEA Raytheon Rotor Modal Analysis

Feb 2024 - Apr 2024

- Analyzed Rotor assembly feasibility if switched from carbon steel to 6061-T6 aluminum using Solidworks
- Validated primary mode of frequency was retained at 500Hz using ABAQUS while also assessing at 100-400 Hz
- Executed simulated load of 10g quasi-static acceleration to validate factor of safety requirement of 1.25 for yielding
- Identified fastener worst-case loads with ABAQUS to determine ANSI bolt size and bracket thicknesses

### Double Pendulum Control and Simulation Algorithm

Jan 2023 - Apr 2023

- Derived nonlinear equations of motion (EoM) for double pendulum using knowledge of dynamics and MATLAB
- Linearized EoM using Taylor-Series and Simulink, decreasing motion accuracy by 11% and computational time by 60%+
- Monitored responses to certain initial conditions using MATLAB and Simulink to verify controllability and observability

## KEY SKILLS

---

**Programming and Simulation:** Python, ROS, MATLAB, C++, Linux, Simulink, Gazebo, RVIZ

**Computer Aided Engineering (CAE):** Solidworks (certified), Siemens NX, Inventor, ABAQUS, Solidworks Simulation FEA

**Data Analysis and Optimization:** Excel, MATLAB, Python, R, Minitab, AMPL

## LEADERSHIP & AFFILIATIONS

---

### Rowing Club President & Member, Clemson Crew

Jan 2020 - May 2024

- Led a team of 100+, achieving top placements in regattas, including 3rd at the Head of the Charles
- Supervised the construction of an emergency \$600K boathouse