

Steven Haener

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MS Robotics candidate (4.0 GPA) with 2+ years in the mechanical engineering industry and 4 years of robotics research. Experienced in robotics software/hardware development, focused on deployable systems that solve real-world problems.

EDUCATION

Georgia Institute of Technology Atlanta, Georgia
Master of Science in Robotics (4.0 GPA) May 2026

Selected Coursework: Robotics Research (ROS2), AI, ML, Deep Learning, Deep RL, Networked Control, Bio-mechatronics, Advanced Dynamics, Nonlinear Controls, Robotic Dynamics/Control

University of Idaho Moscow, Idaho
Bachelor of Science in Mechanical Engineering (3.76 GPA) May 2021

Minors in Math, Music, and German | Grand Challenge Scholars Program (GCSP) founding member

TECHNICAL SKILLS

Languages/packages: Python, C++, MATLAB, ROS2, IsaacSim, MuJoCo, PyTorch, Git, Linux, Bash, Numpy, Gazebo
Design/manufacturing: SolidWorks, Fusion, AutoCAD, FEA, Plasma Cutting, 3D printing, CNC, Soldering, Welding

PROGRAMMING AND HARDWARE PROJECTS

Dynamic Mobility Lab (Dynamo) July 2025 – Present | Atlanta, Georgia

- Investigating the influence of introducing ground reaction force (GRF) data into the training of bipedal locomotion policies using motion capture data and imitation learning pipelines. We hypothesize that including GRF in the locomotion policy will lead to higher sample efficiency and stabler gait for humanoids/exoskeletons.
- Implementing policies in IsaacSim and MuJoCo for sim-to-sim and sim-to-real transfer on Unitree G1 hardware.
- Published a paper on GRF influence in motion retargeting and writing now on objective functions of RL policies.

Georgia Tech Robotarium May 2025 – Present | Atlanta, Georgia

- Migrated backend communication between robots on the testbed with the server/tracking cameras to ROS2-based client to better handle juggling synchronized tracking, real-time pose streams, and multi-robot coordination.
- Led to higher reliability, simpler sensor fusion, and higher bandwidth for large sensor data like cameras.
- Upgraded current robot hardware and implemented MATLAB code to include distance sensors (SLAM) and IMUs to enhance the tools provided to researchers that wish to run experiments with a larger arsenal of sensors.

Lab for Intelligent Decision and Autonomous Robots (LIDAR) Aug 2024 – Present | Atlanta, Georgia

- Designed and developed a foot in Fusion for a bipedal Cassie robot aimed at improving walking stability, slower walking gaits, and reduced actuation effort, leading to a longer lasting robot and more natural-looking movement.
- Integrated tactile/IMU/auditory sensors using C++ with actuated tarsal segments on both sides of the foot.
- Developing Python algorithm to leverage these additional signals for classification of the terrain being walked on, informing our control system of the terrain characteristics so it can tune its strategy for increased stability.
- Writing a journal paper describing design/testing methodologies and results.

Robotics Research Lab Sessions (ROS2) Aug 2024 – Dec 2024 | Atlanta, Georgia

- Gained hands-on experience implementing navigation, state estimation, control, SLAM, computer vision, image processing, and machine learning algorithms on TurtleBot robotics hardware using ROS2.
- Implemented ROS2 topics, nodes, pub/sub architecture, Linux, and incorporated sensor data streams.
- The final lab involved writing an ML/CV algorithm to discern between signs in a maze to make navigation decisions and reach the goal state. Our TurtleBot successfully found the goal state and we received 100%.

INDUSTRY/WORK EXPERIENCE

Georgia Tech | *Graduate Teaching Assistant* May 2025 – Present | Atlanta, Georgia
– Held office hours, wrote exams, and graded papers for graduate-level AI and Machine Learning courses.

Campos EPC Inc. | *Mechanical Engineer I* June 2023 – June 2024 | Salt Lake City, Utah
– Assessed and proctored IFC drawings and surveyed pipelines, automation systems, pumps, and control valves.

Partner Engineering and Science Inc. | *Project Engineer* June 2022 – June 2023 | Salt Lake City, Utah
– Verified conditions of mechanical systems in commercial spaces and prepared technical reports on findings.

Terraclear Inc. | *Mechanical Engineer* Nov 2021 – Mar 2022 | Bellevue, Washington
– Implemented FEA and design analysis in SolidWorks to reduce the weight of the rock picker by nearly 40%.