Logan Boswell

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EDUCATION

Northwestern University **Evanston, IL**
Master of Science in Robotics Expected: September 2025

Georgia Institute of Technology **Atlanta, GA**
Bachelor of Science in Mechanical Engineering (Highest Honors) May 2024
Concentration in Automation and Robotics

EXPERIENCE

Georgia Tech Research Institute **Smyrna, GA**
Student Assistant - Part Time Jan - May 2024
- Collaborated with electrical engineers to design housings and mounts for RF systems using SolidWorks
- Operated mills, water jets, and sheet metal folders to fabricate components for electro-mechanical systems

Chick-fil-A Corporate Support Center **Atlanta, GA**
Equipment and Systems Engineering Co-Op Jan 2022 - Aug 2023
- Developed code libraries using Python, C++, and Git for an automated frying mechatronic system
- Modeled an electric heater in SolidWorks to meet strict size and watt density specifications
- Created a user-friendly GUI with Python and PyQt5 to streamline operation of an automated frying system

PROJECTS

Ping Pong Robot from Scratch (in progress) Winter 2025
- Designing and building an omnidirectional robot capable for returning ping pong balls to a player
- Developing a ROS2 package in C++ and Python for identifying balls and enabling coordinated movement
- Utilizing the YOLOv8 deep learning model for ping pong ball object detection

7-DOF Pool-Playing Robot Fall 2024
- Collaborated with a team of 5 to develop a Python ROS2 package for a Franka Panda arm to play a game of pool
- Wrote a Python ROS2 API wrapper to plan and execute trajectories using MoveIt2
- Modeled and printed custom pool cues in Onshape to achieve a better fit with the Franka gripper

Mobile Manipulation Pick and Place with KUKA youBot Fall 2024
- Simulated a pick and place task of a youBot by generating a reference trajectory based on modern screw theory
- Implemented a feed forward + PI controller to minimize error between actual trajectory and reference trajectory
- Performed physical simulation using an ODE and displayed system in CoppeliaSim

Differential-Drive Car from Scratch Spring 2024
- Led team of 2 to design and build a car capable of following a line or being controlled by an RC remote
- Create a system model in SolidWorks and manufactured custom parts through rapid prototyping
- Implemented a PID controller in LabVIEW for following a line and steering via RC remote

Propeller-Driven Balance Beam Control System Fall 2023
- Guided a team of 4 to design two PID controllers to balance a ball in the center of a beam and reject disturbances
- Built a testing setup equipped with a microcontroller, drone motors, ESCs, an IMU, and a linear potentiometer
- Wrote code in C++ to incorporate PID controllers for stabilizing an inherently unstable physical system

SKILLS

Robotics: ROS/ROS2, Control Systems, Embedded Systems, MoveIt, Nav2, OpenCV, RVIZ, Gazebo
Software: C++, Python, C, Bash, Java, MATLAB/Simulink, LabVIEW, Linux, Git, CMake, Unit Testing
Hardware: SolidWorks/Inventor/NX/Onshape, Rapid Prototyping, Soldering, Mechatronics, Microcontrollers