Logan Boswell

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EDUCATION

Northwestern University   Evanston, IL
Master of Science in Robotics   Expected: December 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   Winter 2025
- Designed and built a 3-wheeled omnidirectional robot using Onshape and rapid prototyping methods
- Developed a ROS2 package in C++ for operating the robot and integrating kinematics with computer vision
- Utilized OpenCV, AprilTags, and a RealSense camera for ping pong ball object detection and tracking

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/NX/Onshape, EAGLE, Rapid Prototyping, Soldering, Mechatronics, Microcontrollers, FEA