Andrew Snowdy

U.S. Citizen — Drewsnowdy19@gmail.com — (716) 228–7038 — Portfolio — LinkedIn — GitHub

Education

Gannon University Graduated May 2024
B.S. in Electrical Engineering, Minor in Mathematics GPA: 3.9 / 4.0

Northeastern University Expected Graduation: May 2026
M.S. in Electrical and Computer Engineering GPA: 3.7 / 4.0

Relevant Experience

Research Assistant – Northeastern University March 2025 – Present

- NEURoam: Architected a unified data acquisition platform for a diverse robotic fleet; implemented hardware-level synchronization (PPS/NMEA) across LiDAR, GPS, IMU, stereo cameras and radios on NVIDIA Jetson Orin to enable campus-scale 3D mapping. Expanded to a 5-robot mesh network.
- NEUFlow: Integrated stereo mapping and optical-flow pipeline on Jetson for UAV autonomy; benchmarked latency and throughput to support real-time obstacle avoidance.

Moog – Aircraft Group Internship May 2023 – January 2025

- Supported qualification testing of hydraulic control modules, power drive units, and actuators, executing functional and environmental procedures to meet FAA certification requirements.
- Automated Gulfstream test-stand data processing in MATLAB and VBA, enabling anomaly identification and reducing manual reporting effort across the group.

Research Assistant – Gannon University August 2021 – May 2024

- Served as technical lead for NASA/NSF NEBP to design and deploy stratospheric balloon payloads, equipped with a multi-node communication system using Iridium satellite links and an XBee mesh network.
- Reverse-engineered legacy hardware to design custom PCBs in Altium for altitude control; integrated servos and sensor stacks for real-time flight diagnostics.
- Developed a high-altitude payload using C++ and Python, and rectified a legacy ground-station receiver for 5.8 GHz Rocket M5 video and RFD 900 MHz telemetry downlinks.

Niagara Refining LLC – Electrical Engineering Internship May – August 2022

- Programmed VFDs and Siemens PLC systems for industrial equipment upgrades and preventative maintenance.
- Configured Modbus/Profinet/ethernet communications and diagnosed control hardware to reduce downtime, supporting sensor replacement and electrical renovations.

Selected Technical Projects

Master's Project – Autonomous Mobile Manipulation on Toyota HSR 2025 – Present

- Developed a ROS 2 navigation-manipulation stack enabling a Toyota HSR to approach and activate ADA door buttons in Gazebo and on hardware using TF-based alignment and waypoints.
- Implemented Damped Least Squares IK and quintic splines for smooth trajectory generation.

Unitree Go2 Control & Estimation 2024 – Present

- Derived a C++ Whole-Body Controller solving a Quadratic Program at 500Hz to regulate centroidal dynamics while enforcing friction cone and contact constraints.
- Established an 800Hz Extended Kalman Filter to track floating-base pose and velocity by fusing high-frequency IMU data with leg kinematics via contact-point updates.

Robotic Arm Build – Perception & Control 2023 – 2024

- Built a low-cost, 6-DOF, 3D-printed robotic arm with closed-loop control over CAN, integrating custom gearboxes (harmonic, cycloidal, planetary) and gripper force feedback for contact detection.

Skills

- C++, Python, C
- CMake, Eigen, Pinocchio
- ROS 2, DDS, Linux
- QP-based Control
- EKF, State Estimation
- MuJoCo / Gazebo
- Git / Subversion
- MATLAB, Simulink
- CAN, UART, I2C
- Chrony, GNSS, NMEA
- Altium, KiCad
- Fusion 360