Andrew Snowdy

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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 – Present

- NEUFlow: Developing a stereo vision pipeline for drone deployment, working on image synchronization, Linux CSI camera drivers, and V4L2/GStreamer-based video streaming.
- NEURoam: Engineered a high-precision, multi-sensor time synchronization system on the NVIDIA Jetson Orin platform. Achieved nanosecond-level data correlation across a complex sensor suite (Ouster LiDAR, GPS, IMU, cameras, radios) to enable robust, real-time SLAM. Scaled across five networked payloads.

Moog – Aircraft Group Internship May 2023 – January 2025

- Assembled, calibrated, and tested hydraulic control units, power drive unit, and actuators under varied conditions to achieve FAA approval for flight.
- Codified test-stand data from Gulfstream into a presentable format using MATLAB and VBA; analyzed results for anomalies. Created VBA scripts that are used company-wide for expediting data processing

Research Assistant – Gannon University August 2021 – May 2024

- Lead engineer for NASA-sponsored High Altitude Student Platform (HASP); rectified a legacy ground-station receiver and built a high-altitude payload using PCB design, C++, and Python.
- Contributed to a 10-student team for the National Eclipse Ballooning Project (NEBP); built payloads including a UHF/VHF video transmitter, GPS tracking for cutdown, and sensor data collection.

Niagara Refining LLC – Electrical Engineering Internship May – August 2022

- Assisted electrical engineers and electricians on industrial facility upgrades and maintenance projects.
- Programmed and tuned VFDs, updated PLC ladder logic, replaced sensors, and troubleshot Siemens control hardware. Developed and installed communication systems; supported electrical renovations

Selected Technical Projects

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

- Built a ROS 2-based mobile manipulation system enabling the Toyota HSR robot to autonomously navigate and traverse doorways in indoor environments. Deployed on simulation (Gazebo) and hardware.
- Integrated perception, inverse kinematics, planning, and collision avoidance for coordinated base–arm control.

Unitree Go2 – Whole-Body Control & State Estimation 2024 – Present

- Designed and implemented a quadratic-programming-based whole-body controller with contact constraints for regulating centroidal and base attitude dynamics.
- Developed an EKF-based state estimator fusing IMU and joint kinematics for floating-base pose and velocity estimation. Implemented and validated in C++ on hardware.

Robotic Arm Build – Perception & Control 2023 – 2024

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

Skills

- Python, C, C++,
- MATLAB, Simulink
- GitHub / Subversion
- Embedded Systems
- Optimization (QP)
- State Estimation (EKF)
- Linux
- ROS 2
- Networking
- Altium, KiCad
- Fusion 360
- LabVIEW