ADRIANA HOLTZMAN

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA — May 2027
Bachelor of Science in Electrical and Computer Engineering — GPA: 3.8/4.0
Additional Major in Robotics

Relevant Coursework: Computer Systems, Data Structures & Algorithms, Space Robotics Development, Signals & Systems, Structure & Design of Digital Systems, Robot Building Practices, Linear Algebra, Differential Equations

RELEVANT EXPERIENCE

Draper, Undergraduate Systems Engineer, Cambridge, MA — May 2025 - Present
- Work on GN&C sensor integration, testing, and data analysis as a Summer 2025 Intern

Micro Robotics Lab, Undergraduate Researcher, Pittsburgh, PA — May 2024 - August 2024
- Lead project creating caudal fin actuators for autonomous fish-like robots, employing SolidWorks, Arduino, rapid prototyping, and electrical design to develop caudal fin actuator with controllable inertia-based turning capability
- Devised safe, reusable test setup to isolate electronics above water tank and track fin location underwater
- Presented quantified actuation control using Segmentation Tracking and MATLAB data visualization at lab meeting

TechSpark Machine Shop, Student Technician, Pittsburgh, PA — May 2024 - Present
- Guided shop users to operate machines safely and assisted professional shop machinists in manufacturing parts
- Instructed 16+ students as Teaching Assistant for manual machining courses (24-200, 24-203)
- Tested new curriculum for 24-203 (offered beginning in Fall 2024) by machining a C-clamp with instructor

PROJECT EXPERIENCE

Optimal Route Generation Pipeline for CircumNav Lunar Rover — January 2025 - Present
- Developed scalable methodology using BFS, DFS, A*, and DBSCAN Clustering in Python to traverse binarized lunar terrains
- Identified and collaboratively solved coordinate system distortion bug to ensure viability of outputted routes
- Contributed this methodology to work on CircumNav Rover NASA proposal to perform sun-synchronous navigation

GPS Real Time Kinematics (RTK) Data Collection — January 2024 - Present
- Lead data collection and analysis for annual University Raceday 2025 (carbon fiber gravity racing) as Data Chair, utilizing high-precision GNSS data to advise driver lines, push team selection, and energy loss analysis
- Trained team of 10+ people to collect and process RTK position data and contribute to data processing tools
- Redesigned and manufactured PCBs in KiCad and physical kits in SolidWorks to improve performance and user friendliness

FPGA Serial Communication Hardware Thread — February 2025
- Built FSM and datapath in SystemVerilog, VCS, and Vivado to receive, decode, and transit serial hamming codes
- Accounted for inputted bit rates within 5% of nominal 12580 Hz by using edge detection to enable resynchronization

Analog Audio Synthesizer, Build18 Hardware Hackathon — October 2024 - January 2025
- Manufactured analog synth with filter, echo, and oscillator functionalities for compatibility with instruments and mic inputs
- Contributed soldering, circuit debugging, laser cutting, woodworking, and public speaking skills to team efforts
- Presented product and live demonstration to team of corporate sponsors as 1 of 5 selected Innov18 teams

C Text Editor — October 2024
- Implemented a program in C to allow constant amortized time insertions, deletions, and cursor movements
- Managed memory efficiently using linked list and unbounded array data structures

SKILLS

Languages	C/C++, Python, MATLAB, SystemVerilog, Assembly, LaTeX, HTML/CSS
Software	VCS, Vivado, VSCode, Git, SolidWorks, Arduino, AutoCAD, KiCad, Ansys Discovery, CorelDraw
Machines	Mill, Lathe, CNC Mill, Waterjet, Laser Cutter, 3D Printer (FDM/SLA), Bandsaw

ACTIVITIES AND HONORS

Carnegie Involvement Association (CIA Buggy), RD25 Data Chair, Mechanic, Build — August 2023 - Present
Build18 Hardware Hackathon, Web Development and Media Design Officer — February 2025 - Present
Scotch'n'Soda, Actor, Co-Head Paint Implementer, Asst. Electrician — August 2023 - Present
College of Engineering Dean's List, (GPA 3.75 and above) — Fall 2023, Spring 2024