

Henry Noyes

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EDUCATION

Northeastern University

Boston, MA

MS in Robotics | GPA: 4.00

May 2026

BS in Mathematics and Physics, Minor in Data Science | GPA: 4.00

May 2024

Honors: NASA Space Technology Graduate Research Fellow, 2022 NASA BIG Idea Challenge Artemis Award, Massachusetts Space Grant Consortium Fellowship, ASME SMRDC 1st Place, Dean's List, National Merit Scholarship

Relevant Coursework: Mobile Robotics, Control Systems Engineering, Practical Neural Networks, Machine Learning, Multimessenger Astrophysics, Thermodynamics and Statistical Mechanics, Classical Dynamics, Group Theory

RESEARCH EXPERIENCE

Silicon Synapse Lab

Boston, MA

Student Robotics Researcher

Sep 2021–Present

- Co-created the COBRA system (Crater Observing Bio-inspired Rolling Articulator), a modular snake robot capable of sidewinding and tumbling with a mission to measure ice concentration in permanently shadowed lunar craters
- Served as electrical lead for a team of 11 students selected as 1 of 7 finalists for the 2022 NASA BIG Idea Challenge, where we won the Artemis Award—the top honor of the competition
- Developed a modular perception framework in ROS2, enabling online visual-inertial SLAM with an Intel RealSense D435i onboard an NVIDIA Jetson Orin
- Authored locomotion firmware in C++ to accomplish complex gaits such as sidewinding, vertical undulation, and lateral rolling

NASA Ames Research Center

Mountain View, CA

Visiting Graduate Researcher

May–July 2025

- Adapted a MuJoCo simulation to demonstrate a novel method for dynamic tumbling control of tensegrity structures
- Designed and fabricated a six-strut icosahedral tensegrity structure from carbon fiber rods, 3D-printed endcaps, and nylon cable to validate simulation results in the Roverscape test facility

PROFESSIONAL EXPERIENCE

Robotics and Intelligent Vehicles Research Laboratory (RIVeR)

Boston, MA

Robotics Engineer

Jan–June 2023

- Led the data processing and system integration efforts on a DARPA-funded mixed reality project focused on perceptually-enabled task guidance (PTG)
- Developed a ROS2 architecture to efficiently collect and store data from the Microsoft HoloLens 2 headset
- Assisted in training object detection and action recognition models for deployment on an augmented reality headset, and created an automated object annotation pipeline using OptiTrack motion capture

MAAT Energy

Cambridge, MA

Plasma Engineer

Jan–June 2022

- Modeled electromagnetic fields in COMSOL to assist plasma applicator design, increasing ignition success rate by 50%
- Conceived, built, and tested 3 novel solutions to microwave plasma ignition that are scalable to high-power systems
- Consolidated findings in 5 detailed reports submitted to the U.S. Department of Energy

SKILLS

Software Skills: Python (PyTorch, TensorFlow), C++, ROS/ROS2, Docker, SolidWorks, MATLAB, Git, Bash, LaTeX

Hardware Skills: 3D Printing (FDM, SLA), Soldering, Laser cutting, Circuit design and assembly

PUBLICATIONS

A. Salagame, **H. Noyes**, et al., "How Strong a Kick Should be to Topple Northeastern's Tumbling Robot?," *AIM*, 2024