

Henry Noyes

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EDUCATION

Northeastern University

Boston, MA

MS in Robotics | GPA: 4.00/4.00

Sep 2024–May 2026

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

Sep 2020–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

NASA Ames Research Center

Mountain View, CA

Visiting Graduate Researcher

May 2025–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 3D-printed endcaps, carbon fiber rods, and nylon cable to validate simulation results in the Roverscape test facility

Silicon Synapse Lab

Boston, MA

Student Robotics Researcher

Sep 2021–Present

- Co-created the COBRA system (Crater Observing Bio-inspired Rolling Articulator). COBRA is 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, receiving \$170,000 to build a functional prototype. Awarded the Artemis Award—the top honor of the forum
- Designed 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

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 that were 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