River M. Adkins

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Education

Massachusetts Institute of Technology Cambridge, MA
BS in Mechanical Engineering, Concentration in Robotic Design September 2022 – May 2026
Relevant Coursework: Feedback Controls, Introduction to Robotics, Design of Electromechanical Systems, Fundamentals of Programming, Linear Algebra, Circuits, Toy Product Design

Skills

Programming Languages + Tools:	Python, ROS2, MATLAB, JavaScript, C, Assembly, Processing, R
Design:	SolidWorks, OnShape, Adobe Illustrator, Rhino, Grasshopper

Work Experience

MIT Laboratory for Information and Decision Systems Cambridge, MA
Undergraduate Researcher Feb 2025 – Present

- Developing autonomous ground vehicles with Nvidia Orin AGX, ZED cameras, and Python-based control stacks.
- Leading hardware/software integration and testing across embedded platforms in a research setting.
- Tools used: ROS2, Microcontrollers, Control Theory

Self-Assembly Lab with Hyundai Cambridge, MA
Undergraduate Researcher Aug 2024 – Jan 2025

- Worked with Hyundai engineers to explore thermal film and metal-material shape transformation.
- Developed a genetic algorithm to design and optimize thermobimetal covers for automobiles and moon rovers to self-regulate temperature.
- Tools used: Rhino, Grasshopper, MATLAB

Applied Invention Cambridge, MA
Software Engineer Intern Jun 2024 – Aug 2024

- Worked on the controls team for Applied Invention.
- Designed and deployed code to handle sensor errors in a fully automated greenhouse.
- Tools used: Python, FastAPI, Gitlab, Terraform, Docker

MIT Media Lab Cambridge, MA
Undergraduate Researcher Feb 2023 – June 2024

- Collaborated with the Affective Computing Group to develop therapeutic technologies for foster youth and wearable devices for emotion regulation in individuals with ASD.
- Worked with the Personal Robotics Group to explore how robots can connect people through storytelling. Contributed to a nationwide study and co-authored a published paper here.
- Tools used: React.js, Processing, Circuit Design

Selected Projects

MASLAB Cambridge, MA
Competitor January 2024

- Placed second in the Mobile Autonomous Systems Laboratory competition.
- The robot detected colored blocks and towers, knocked over the tower, and picked up the blocks using an actuator. We used ROS2 to implement a state machine controlling PID, OpenCV color segmentation, and hardware.
- Tools used: Microcontroller, ROS2, Laser cutting, 3D printing.

LED Mural Board Cambridge, MA
ProjX Participant January 2024

- Received a grant of $500 to create a door-shaped LED Mural Board.
- Soldered 100 LED strips together to attach them to a single power supply and controller. Used Arduino FastLED Library to create cohesive display from LEDs.
- Tools used: Microcontroller, Soldering

Extracurricular Activities

East Campus President *Leader* Aug 2022 – Present
Held various leadership roles in East Campus student government, including dorm president, vice president, hall chair, and room assignment chair. Led large-scale events such as Pumpkin Drop, a concert, and a carnival.