

Alexander Harris

akharris@mit.edu | (917) 399 – 9667 | linkedin.com/in/alexander-k-harris | Portfolio: akharris.com

Education

Massachusetts Institute of Technology

Cambridge, MA

Candidate for B.S in Mechanical Engineering and Minor in Computer Science

May 2025

GPA: 4.8/5.0

Relevant Coursework: Mechanics and Materials, Dynamics and Control, Thermal-Fluids Engineering, Design and Manufacturing, Bio-Inspired Robotics, Fundamentals of Programming, Algorithms, Machine Learning, Electronics for Mechanical Systems

Work Experience

MIT Laboratory for Translational Engineering: PI – Giovanni Traverso

Cambridge, MA

Paid Undergraduate Researcher

June 2024 – August 2024

- Designed an electrode, microneedle mold, and conductive interconnecting paste for a bioresorbable robotic device.
- Best-performing bioresorbable paste attained a resistivity of 320 mΩ/sq.

MIT Homes, Architecture, and Universal Sustainability (mit HAUS): PI – David Hardt

Cambridge, MA

Paid Undergraduate Researcher

June 2023 – August 2023

- Designed, printed, and tested possible small-scale models for the floor of a 3D-printed home made from rPET.
- Vertical displacement under point loading of best-performing models met HUD standard.

MIT Newman Lab for Biomechanics and Human Rehabilitation: PI – Neville Hogan

Cambridge, MA

Paid Undergraduate Researcher

September 2022 – January 2023

- Trained a reinforcement learning model to balance an inverted pendulum using MATLAB and Simulink.
- Experimented with DDPG, TD3, and PPO agents, as well as different reward functions and mass distributions of the pendulum.
- Model was still able to stabilize the pendulum when band-limited white noise was added to the testing environment.

MIT CSAIL Networks and Mobile Systems Group: PI – Mohammad Alizadeh

Cambridge, MA

Paid Undergraduate Researcher

June 2022 – August 2022

- Converted the outputs of a machine learning model for predicting chess moves to a PGN format to visualize the positions the model was trained and tested on.
- Improved a GAN version of the model by tuning its hyperparameters and loss function.

Leadership

Camp Kesem at MIT

Cambridge, MA

Development Coordinator

September 2024 – Present

- Leading fundraising for a nonprofit camp for children impacted by a parent's cancer, with a goal of raising \$165,000.

Operations Coordinator

September 2023 – August 2024

- Created and ran programming for a two-week camp with over 200 campers and 100 counselors.

Sigma Nu Fraternity

Boston, MA

Community Service Chair

April 2024 – Present

- Empowering a chapter of over 40 members to participate in community service and fundraise for local organizations.

Gordon-MIT Engineering Leadership Program

Cambridge, MA

Gordon Engineering Leader

September 2023 – May 2024

- Participated in selective leader development program focused on being an effective member or leader of industry engineering teams.
- Actively practiced leadership, teamwork, and communication skills in an engineering context complementing MIT's technical coursework.

Projects

2.007 Design and Manufacturing I

Cambridge, MA

Design Project: Creating a Robot to Perform Tasks on a Competition Game Board

Spring 2024

- Designed and fabricated a robot that could rotate a wheel to ascend an elevator and manipulate objects on an elevated platform.

2.00b Toy Product Design

Cambridge, MA

Marble Machine: Design Team Member

Spring 2022

- Designed, tested, and fabricated an industry-quality toy product, and presented the product to a live audience at an end-of-semester event.
- Selected by MIT Museum to develop an interactive museum installation inspired by the product over January 2023.

Honors and Awards

Pi Tau Sigma International Honor Society for Mechanical Engineers

September 2023 – Present

USFCA All-Academic Team and Scholar of Distinction

2022, 2023, and 2024

Skills and Interests

Skills: Python, MATLAB, Simulink, Machine Learning, CAD, FEA, 3D Printing, Instron Tensile Testing, Machine Shop Tools

Interests: Sports and Sports Science, Chess, Music