Ayden Soderblom

80 Garnet Rd, Boston, MA, www.linkedin.com/in/ayden-soderblom
Cell: (857) 415-7596 ans7@mit.edu

EDUCATION

Massachusetts Institute of Technology, GPA 5.0/5.0 Cambridge, MA
MechE & CS (AI)

- Coursework: Mech. & Materials, Programming, Dynamics & Control, Autonomous Decision Making

PROFESSIONAL EXPERIENCE

ESL AeroAstro MIT | Lead Mechanical Engineering Researcher 2025 – Present

- Designed an autonomous funnel-and-latch docking system enabling two ~6 ft ASVs to mechanically capture and transfer 12 V DC power with predicted >95% docking success
- Created a seven variable trade-space analysis comparing five docking architectures
- Built **CV** model using **YOLOv8** on an Rpi 5 using an IR stereo camera, to recognize obstacles and inform autonomous docking; uses **DarkIR** to process individual images before the YOLO model.

ESL AeroAstro MIT | Research Intern 2023 – 2025

- Designed and manufactured low-cost mock-up of MIT's Sea Beaver Autonomous Underwater Vehicle (AUV) to test P.E.A.R.L. (**P**latform for **E**xpanding **A**UV explo**R**ation to **L**onger ranges)
- Led development of an autonomous docking system enabling data transfer and power recharge between surface and underwater vehicles to extend autonomous duration of AUVs.
- Designed & manufactured a custom heat sink for the sensor suite integrated into P.E.A.R.L.
- Presented published research on *Predictive Thermal Digital Twin Modeling for Renewable-powered Offshore AUV Servicing Platform* at ASME OMAE 2025, Vancouver, CA.

PUBLISHED RESEARCH

Soderblom, A., Paek, S.W., Bhattiprolu, A., and de Weck, O.L. *Predictive Thermal Digital Twin Model for a Renewably Powered Offshore AUV Servicing Platform*, ASME 2025 44th Intl. Conf. Ocean, Offshore & Arctic Eng., Vancouver, Canada, https://doi.org/10.1115/OMAE2025-152581

HONORS & SERVICE

Eagle Scout 2024

Boston Marathon 2025-2026

- Raised **19.3k/20k** (as of 3/17/26) for Hospitality Homes to run the Boston Marathon

PROJECTS

Kalshi Market Making Trading Bot 2026

- Built an automated market-making system in Python that dynamically quotes two-sided markets and captures bid–ask spread profits using Kalshi's WebSocket API.

Go-Kart 2022-2023

- Built a go-kart, welding the frame, designing brakes, steering and wheel linkages, and modifying the engine to achieve higher RPMs (3k to 9k).

Rebuilt Car for Cross Country Trip 2025

- Purchased and restored a mechanically totaled car, in preparation for a 15,000 mi cross country trip

SKILLS

CAD (Solidworks, Creo, Fusion 360, OnShape) Python, LLM, OpenCV, Welding & CNC machining.