

Beck Flach

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Education

Olin College of Engineering, Needham MA

May 2026

- Bachelor of Science, Mechanical Engineering (3.8 GPA)

Relevant Coursework

- Current: Mechanical Failure Analysis and Prevention, HVAC Energy Optimization
- Past: Software Design, Urban Sociology and Policy Principles of Integrated Engineering, Data Science, Engineering Systems Analysis, Dynamics, Complexity Science, Modeling & Simulation

Skills & Interests

- Mathematical modeling of mechanical systems, fluid flow, and thermodynamics
- Mechanical design and CAD (Onshape, SolidWorks, AutoCAD)
- Human centered design and co-design
- Transportation and land use policy
- Software development and data science (Python, R, Rust, JavaScript, React, C)
- Project management, organization, and leadership

Experience

Olin Combat Robotics: President

Spring 2024-Present

- Designed a 3lb combat robot using SolidWorks and built it with 3d printing, machining, and electronics.
- Competed in the National Havoc Robot League.
- Organized club logistics, led team meetings, recruited new members, and acquired funding.

Volpe National Transportation Systems Center: Engineering Intern

Summer 2024

- Streamlined the troubleshooting process of the MSSIS ship tracking system, which is widely used to curb illegal fishing, assist with search and rescue, and improve maritime security.
- Assisted with redeveloping data pipelines using Rust.
- Participated in 5-week international workshop on maritime technology.

MBTA Ridership Analysis: Data Science Project

Spring 2024

- Used MBTA ridership data in combination with census demographic data to geographically examine transportation equity in the Boston area.
- Performed data analysis and created visualizations using R.

Shy Sioban: Systems Engineering Project

Fall 2023

- Created an interactive animatronic with a cross-disciplinary team.
- Designed parts for laser cutting and 3d printing using Onshape.
- Designed, built, and coded in C++ and Arduino-based control system.

OCCaM Lab: Student Researcher

Summer 2023

- Co-designed with users to improve the accessibility and user experience of Clew, an app for indoor navigation for the blind and visually impaired.
- Increased the navigation precision using GraphSLAM, Cloud Anchors, and visual-inertial odometry in Python, and worked on app development in Swift.

Rosbash Lab: Web Developer

Spring 2023

- Hired by senior capstone team, working on behalf of Brandeis Rosbash Lab, for the implementation of a web app that was beyond the team's capabilities.
- Created an interactive experiment scheduling web application using React, based on Figma design documents and stakeholder feedback.