

Matthew Kwon

(424)321-9432 | mkwon@olin.edu | <https://www.linkedin.com/in/matthewkwon123> | <https://mkwon.net>

EDUCATION

Olin College of Engineering, Needham, MA

Bachelor of Science in Mechanical Engineering, GPA: 4.0

May 2028

- **Relative Coursework:** Mechanics of Solids & Structures, Introduction to Thermal-Fluid Systems, Quantitative Engineering Analysis, Mechanical Prototyping, Modeling & Simulation, Design Nature

Palos Verdes Peninsula High School, Palos Verdes, CA

June 2024

High School Diploma, GPA: 4.76 W, 3.9U W

SKILLS

Mechanical: Mill (CNC/Manual), Lathe (CNC/Manual), Laser Cutter, 3D Printer, SolidWorks, OnShape, Fusion 360, TIG Welding, Spot Welding, FEA, Sheet Metal, DFMA

Software: MATLAB, Java, Python, C++

EXPERIENCE

Formula SAE Competition Team, Needham, MA

Accumulator Team Lead [September 2024 – Present]

- Designed, fabricated, and tested the high-voltage battery system, ensuring full compliance with FSAE rules and safety standards
- Led cross-team integration between electrical and mechanical groups, aligning subsystem requirements and resolving design conflicts to ensure seamless implementation
- Performed structural and thermal FEA to assess enclosure integrity and thermal management, optimizing for reliability and safety under high-load conditions
- Personally assembled and tested battery segments, implementing retention, insulation, and containment safety features for consistent and robust in-vehicle operation
- Directed and mentored a team of engineers, coordinating timelines across subteams and delegating design, manufacturing, and testing tasks to ensure on-time vehicle completion and improve overall efficiency

CREST Research Lab Needham, MA

Autonomous Surface Vehicle Designer [September 2025 – Present]

- Received a \$3,000 research budget to design and develop an autonomous, modular surface vessel for environmental data collection
- Designed and fabricated a compact and portable floating platform capable of independent freshwater navigation
- Integrating autonomous object detection and real-time obstacle avoidance systems for GPS-guided, vision-assisted navigation and adaptive path planning

Lemelson MIT InvenTeams, Rancho Palos Verdes, CA

Mechanical Team Member [September 2022 – August 2024]

- Received a \$7500 grant to develop a technologically advanced wheelchair as part of the Lemelson-MIT InvenTeams project
- Designed and machined wheelchair frame, ensuring structural integrity and functionality through 3D modeling and fabrication
- Collaborated on integrating motorized systems to enhance mobility, focusing on efficient motor, battery, and control systems

VEX Robotics Competition, Rolling Hills, CA

Team Leader/Mechanics Lead [June 2020 – April 2024]

- Led the design and fabrication of robots for the annual VEX Robotics challenges, ensuring high performance and innovation
- Assigned members to roles based on their strengths and interests, fostering a collaborative and effective team environment

PROJECTS

Mechanical Prototyping, Needham, MA

Model Manual Transmission System [Spring Semester 2025]

- Developed a functional manual transmission prototype illustrating torque transfer, gear ratios, and shifting using SolidWorks
- Applied CNC machining and assembly skills to build custom components and integrate them into a working model