

Zach Kutschke

Portfolio: <https://zkutschke.github.io/>

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Education

Massachusetts Institute of Technology

Candidate for M.S. in Mechanical Engineering

B.S. in Mechanical Engineering, GPA: 4.8/5.

- Exchange student at ETH Zürich, Switzerland in 2020.

Cambridge, MA

June 2023

February 2021

Professional Experience

Pure Watercraft

Mechanical Engineering Intern

Seattle, WA

February – July 2021

- Designed a rig and performed log strike testing on outboard motors to ensure user safety.
- Developed test equipment for a variety of PCBs and other system components.
- Created an end of line dynamometer to verify the functionality of completed outboards.

Impact and Crashworthiness Lab (MIT)

Undergraduate Researcher

(Remote)

May – December 2020

- Developed physics-informed neural networks to solve unsteady heat transfer problems and supplant finite element solvers in modelling thermal runaway of damaged lithium-ion batteries.

Pure Watercraft

Mechatronics Intern

Seattle, WA

June 2020 – August 2020

- Developed test equipment to validate the BMS, battery control boards, and throttle construction.
- Designed and implemented data acquisition unit to analyze gearbox pressures and inform decisions on its valving.

BD Medical - Advanced Diabetes Care

Research and Development Intern

Andover, MA

June 2019 - August 2019

- Designed and manufactured automated testing equipment to improve manufacturing efficiency of latest insulin delivery device.
- Supported the development of a new leak rate test method for critical modules of new insulin delivery device.

Musashi Auto Parts - Michigan

Engineering Intern

Battle Creek, MI

June 2018 - August 2018

- Designed and fabricated a computer-controlled tool cart to aid in machine installation.
- Collaboratively designed custom holders for production line operators' gauges and measuring equipment.

Musashi Auto Parts - Michigan

Engineering Intern

Battle Creek, MI

June 2017 - August 2017

- Designed testing apparatus and process to determine acceptable leak rate of gear assemblies and used the results to generate new production line specifications to reduce bad parts.
- Utilized GTAW, GMAW, plasma cutters, mills, and lathes to improve production equipment.

Leadership Experience

MIT Solar Electric Vehicle Team

Business Lead & Mechanical Engineer

Cambridge, MA

September 2018 – December 2020

- Designed, tested, and manufactured parts of the mechanical system (parking brake, suspension, wheel package).
- Spearheaded team sponsorship efforts leading to an acquisition of over \$90k to support team operations.

Skills & Interests

Skills: Solidworks, Machining & Welding, Arduino/C, MatLab, Python.

Interests: Photography, Weight Lifting, Judo & Brazilian Jiu Jitsu, Community Service, German.