



Joshua Weiss

Engineering Portfolio

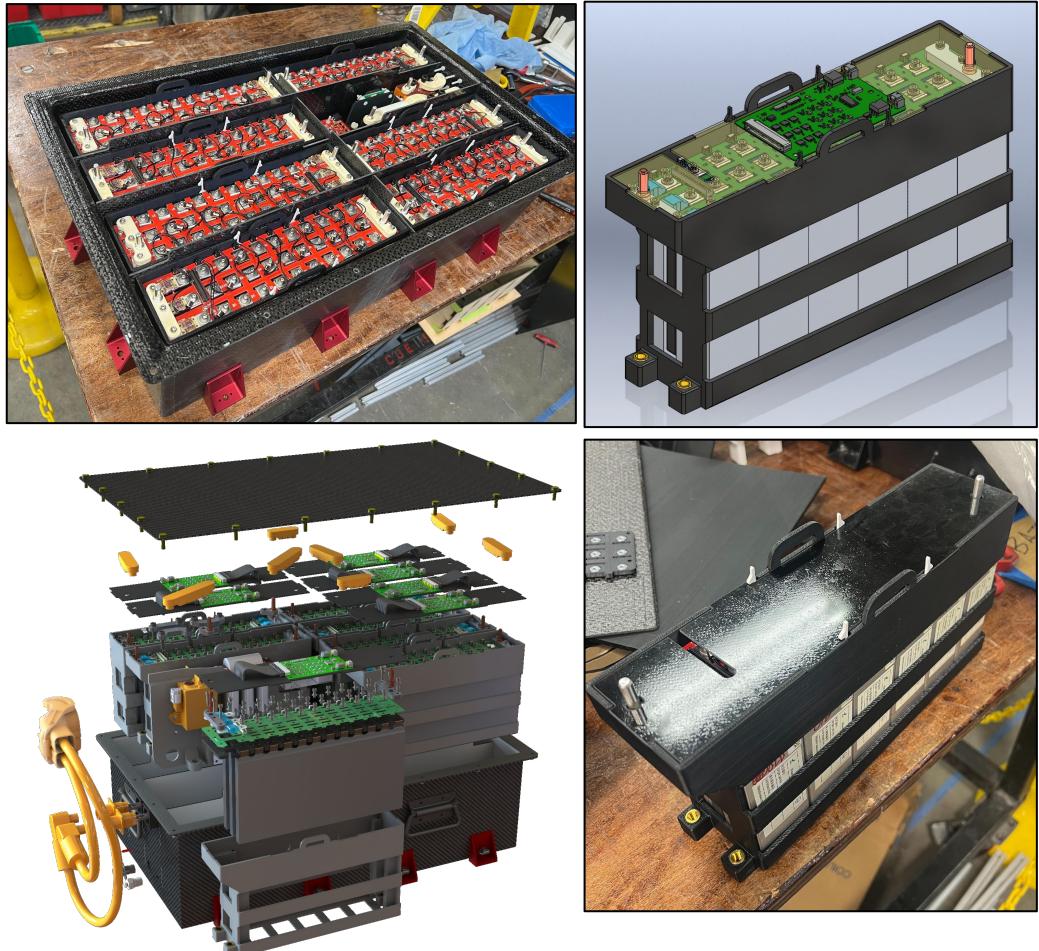
UW Madison: Engineering Mechanics and Aerospace

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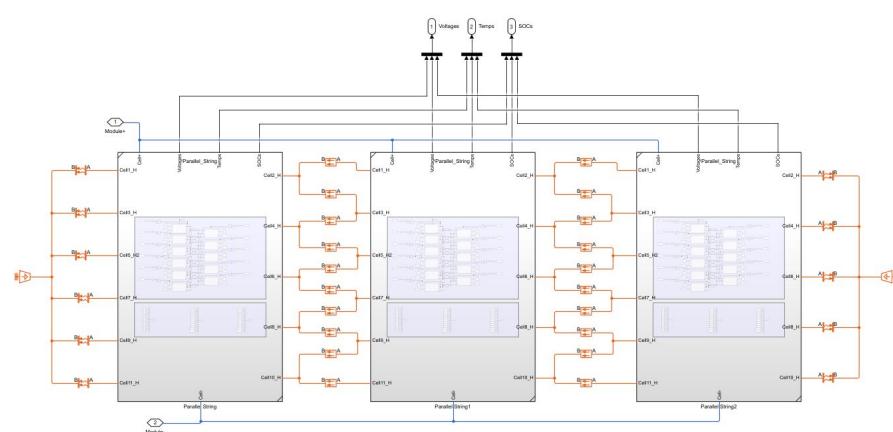
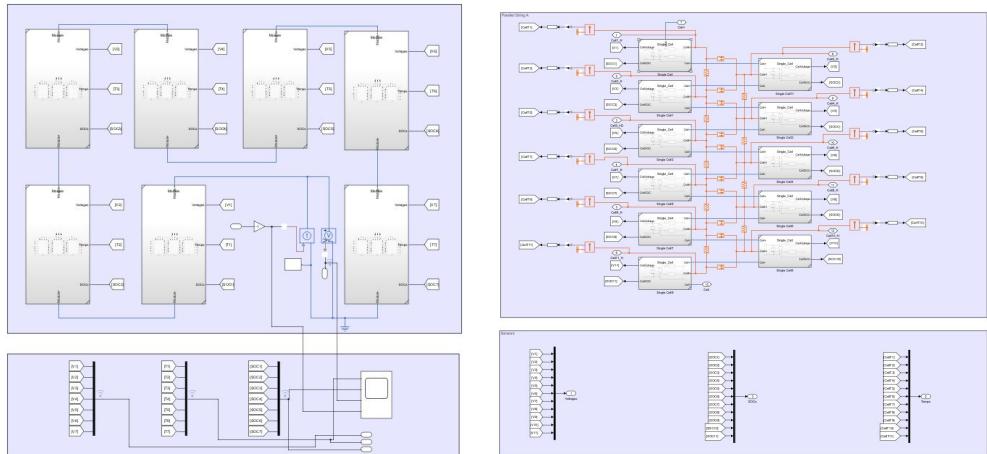
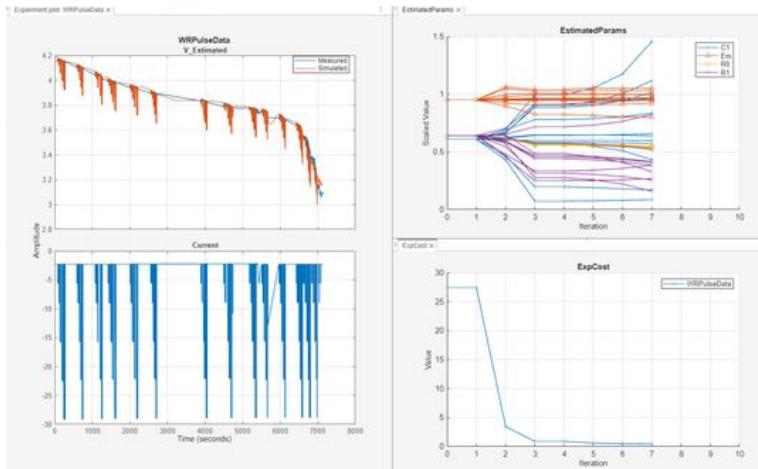
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Wisconsin Racing FSAE: Accumulator (Fall 2023-Current)

- Designed and manufactured entire mechanical portion of battery pack including CFRP chassis.
- Improved serviceability, energy density, weight, and interfacing from previous design.
- Never worked with an HV battery before this project. Learned project management and general electrical packaging design.

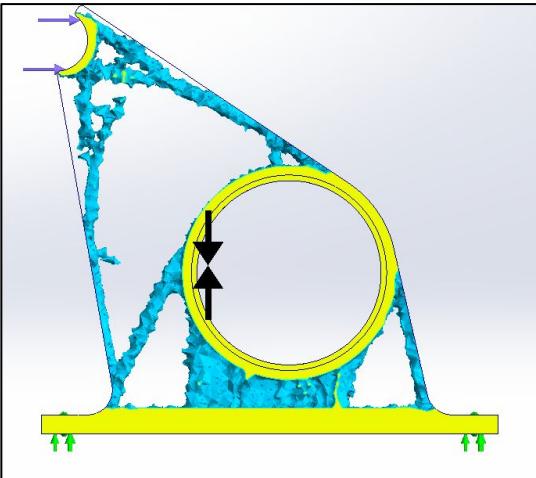
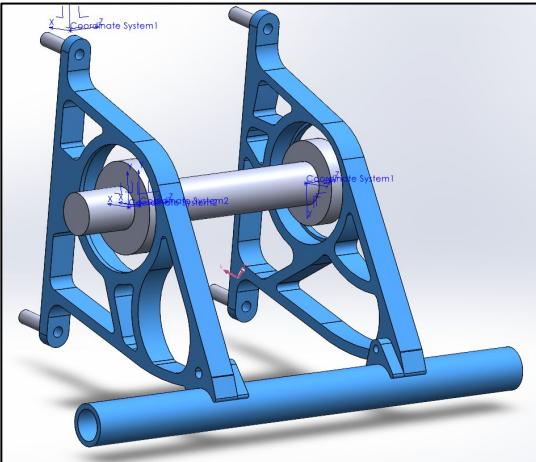


Wisconsin Racing FSAE: Accumulator (Fall 2023-Current)



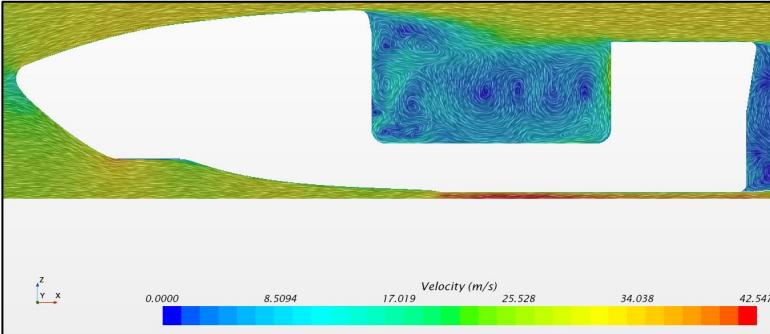
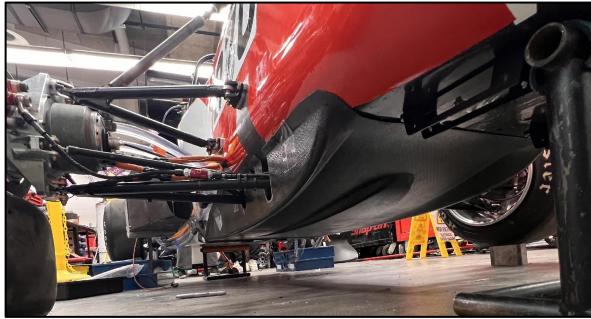
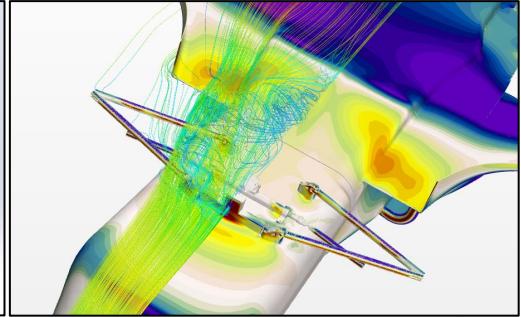
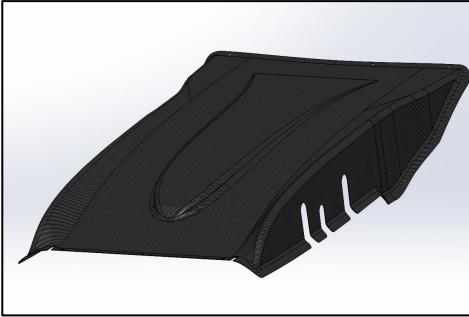
Wisconsin Racing FSAE: Bearing Blocks (Fall 2022 - Spring 2023)

- Designed topology optimized bearing blocks which were lighter and easier to manufacture than previous variant.
- Learned FEA and performed hand calcs to design mounts to withstand clutch drop and various other load cases.



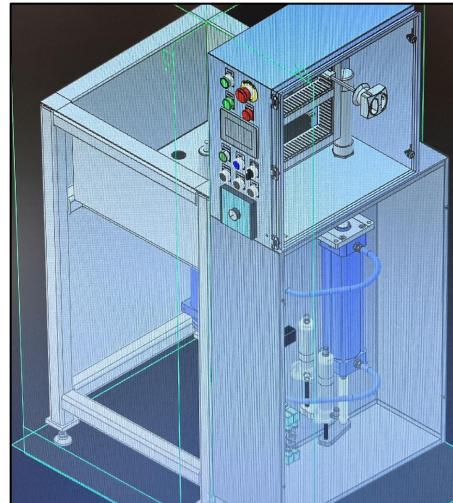
Wisconsin Racing FSAE: Steering Rack Cowling (Fall 2022)

- Reduced drag due to Steering Rack/underbody suspension ~60% and greatly increased the efficiency of the floors/venturi tunnels
- Learned surface modeling and basic CFD to iterate on the design



ELECTROHEAT LLC: Programmable Scanner (Summer 2022)

- Designed and Assembled programmable material handling equipment for scanning various parts an induction heating coil.
- Learned how to use a PLC and code in ladder logic. Also learned how to use/design for pneumatic and hydraulic systems.
- Used mostly off-the-shelf parts for cost and serviceability

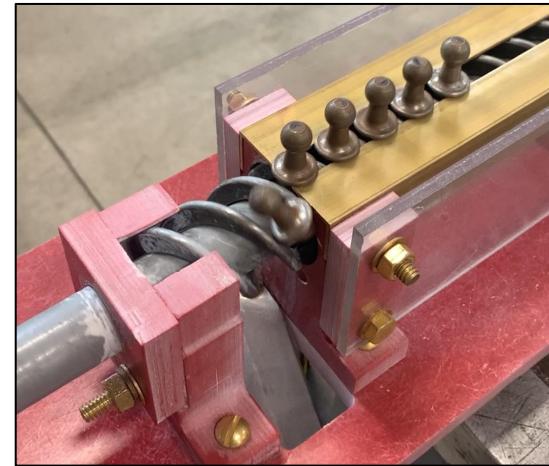
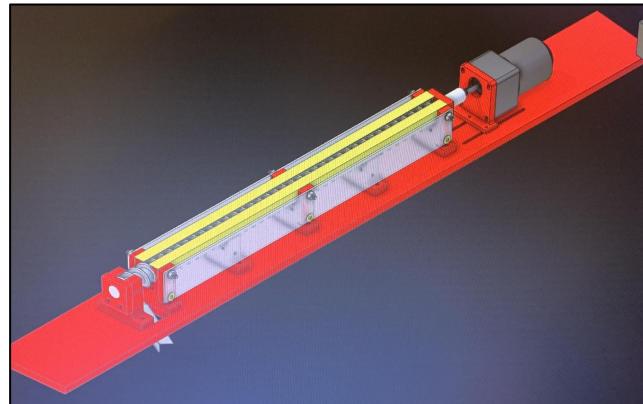


ELECTROHEAT LLC:

Part Feeder/Spinner

(Summer 2021)

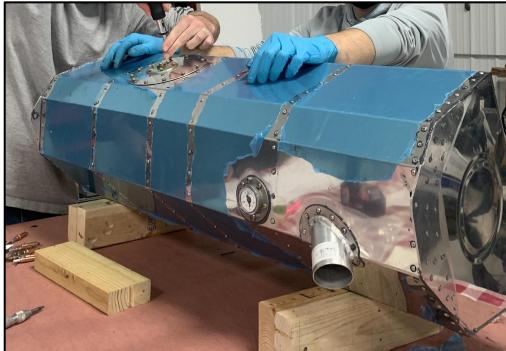
- Prototyped part feeder to be used with 1D induction heating coil. Using a single moving auger the part would move linearly but also rotate to achieve even heating.
- Machined parts using CNC Mill and router.
- Tested various rail materials to reach desired spin rate of part



Kettle Moraine Youth Aviation: Empennage and Fuselage

(Fall 2020 - Fall 2021)

- Led a small team in building fuselage and empennage of a Van's RV-12iS.
- Learned and mentored fabrication and assembly of aircraft.



Various Other Engineering Projects

