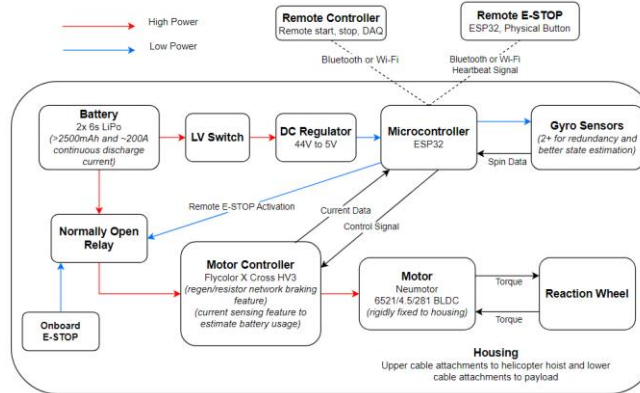
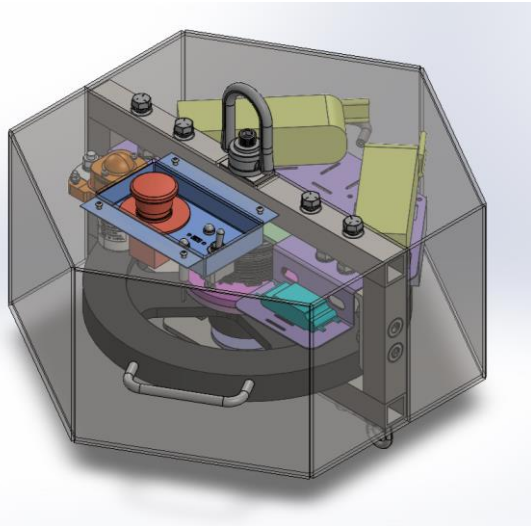
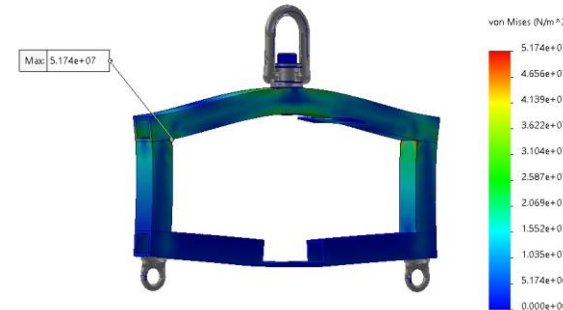


## SpinStop | Helicopter Rescue Spin Stabilization System

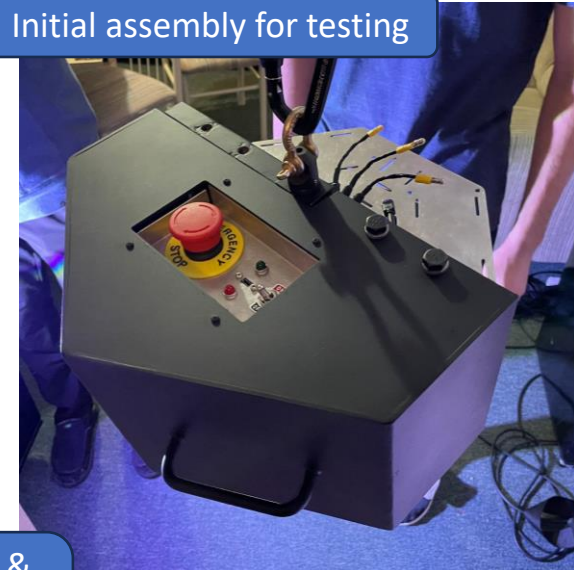
Creating a reaction wheel based stabilization system for hoisted payloads as part of my 4<sup>th</sup> year design project



System modelling & simulation



Initial assembly for testing



Remote e-stop



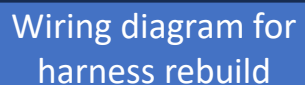
Burst containment housing

Machining & fitting press-fit plate

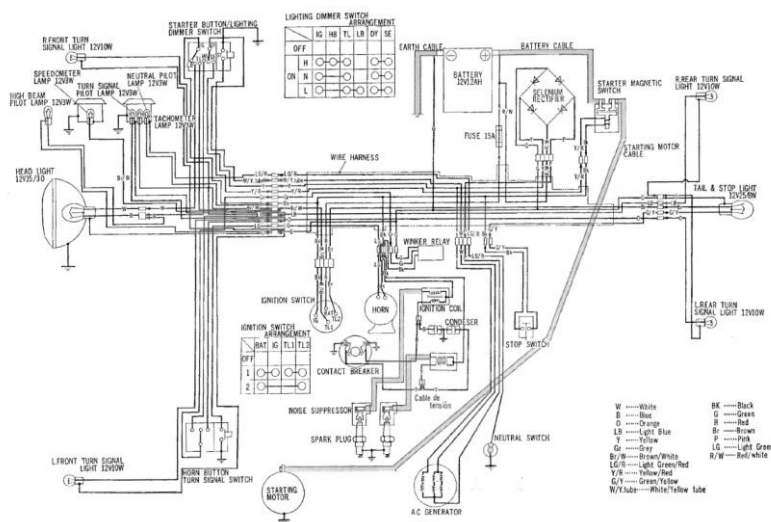




## Rebuilding a 1973 Honda motorcycle: full teardown, repair, harness rebuild, missing component fabrication



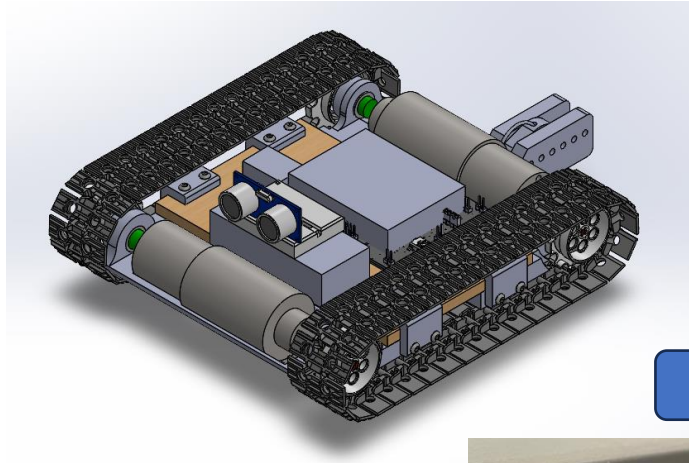
Seized piston  
removal with  
piston jack jig



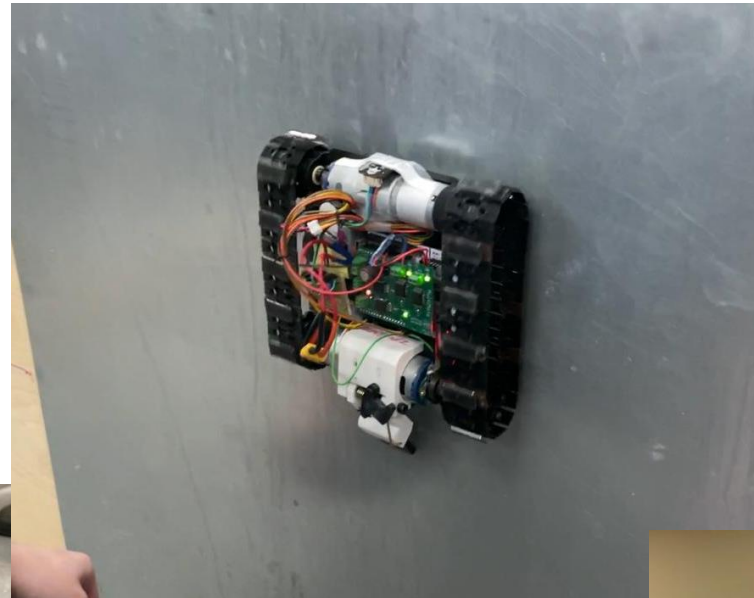


## Wall Climbing Robot

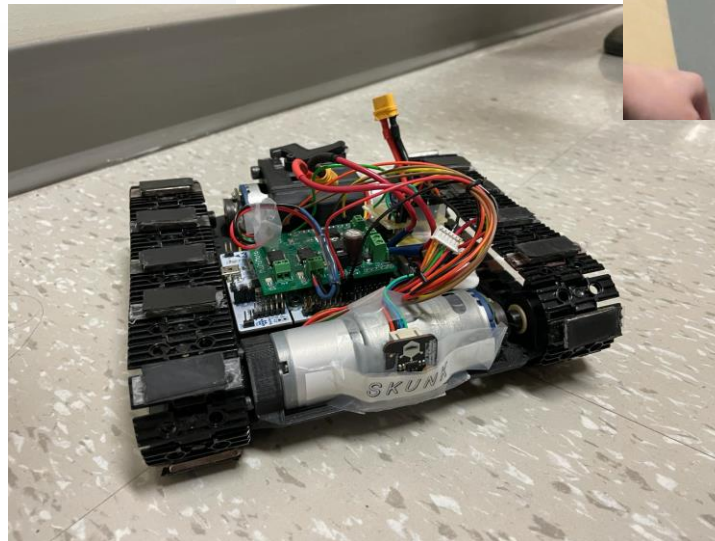
Built an autonomous rover-style walk climbing robot



Conceptualization



Successful operation



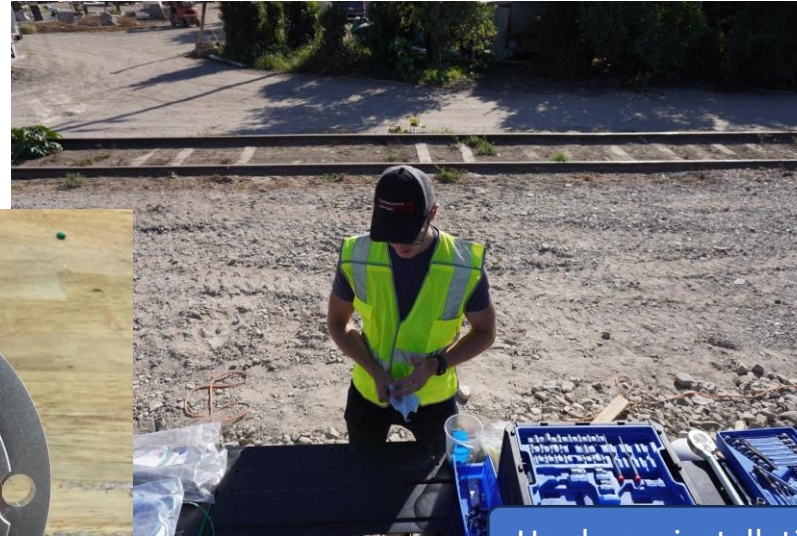
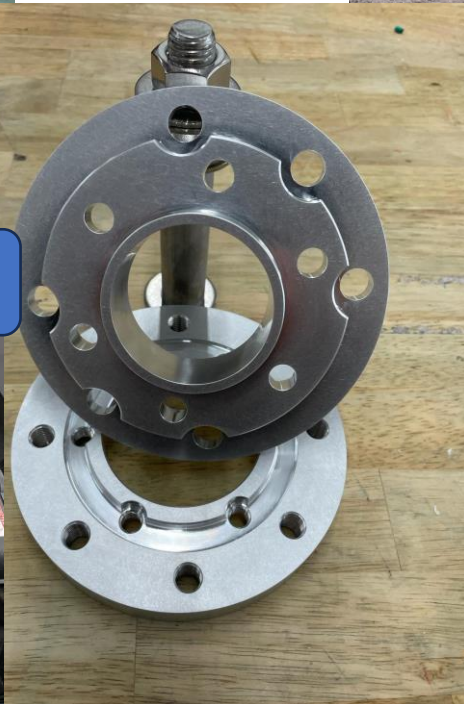


## Parallel Systems | Autonomous Train Hardware

Lead the design of an axle dynamometer, developed a custom bearing design workflow, prototyped a hydraulic parking brake system



Axle dyno housing, torque sensor, thermal/hydraulic loop



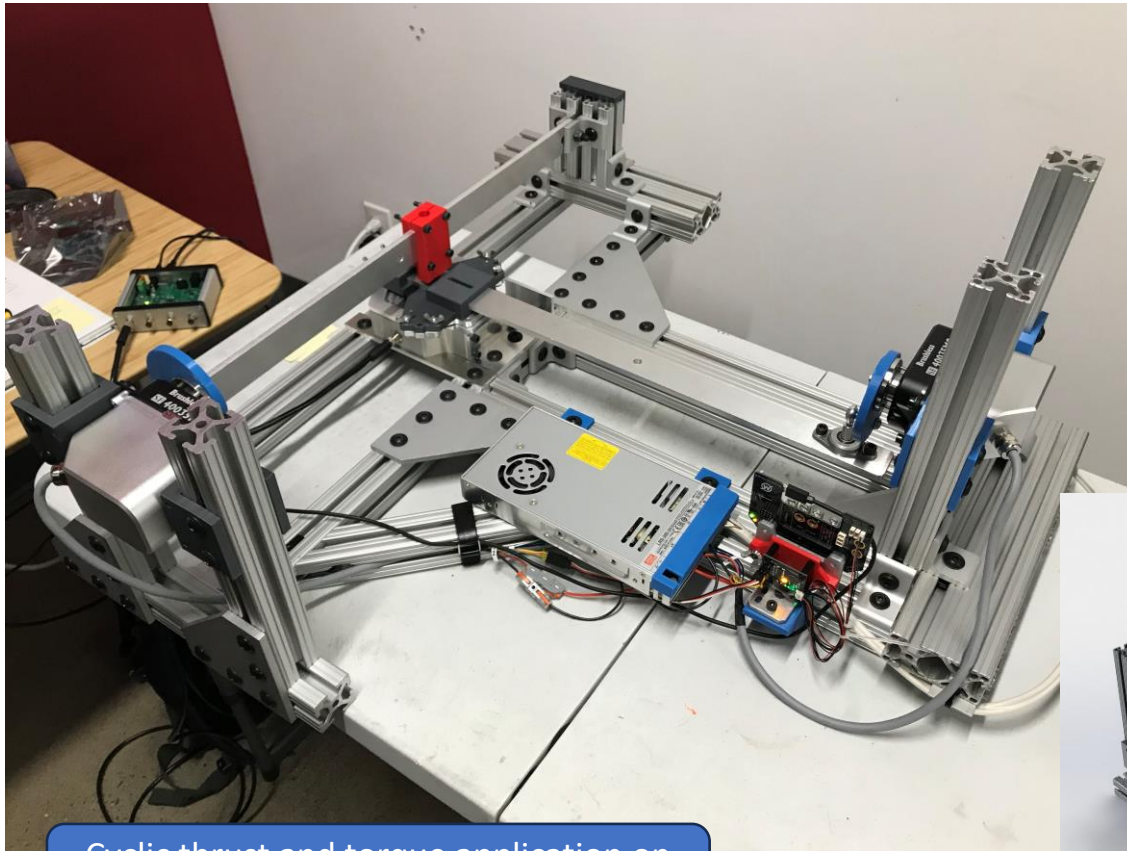
Hardware installation & testing





## Tyto Robotics | Fatigue Testing Machine

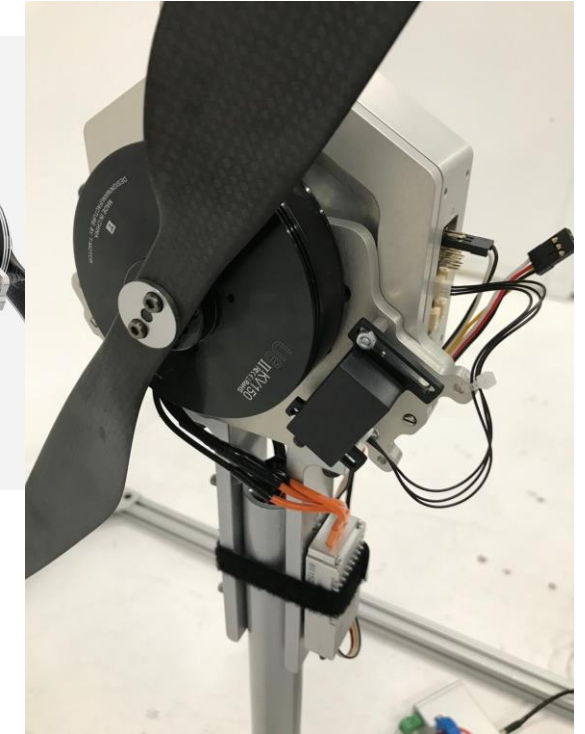
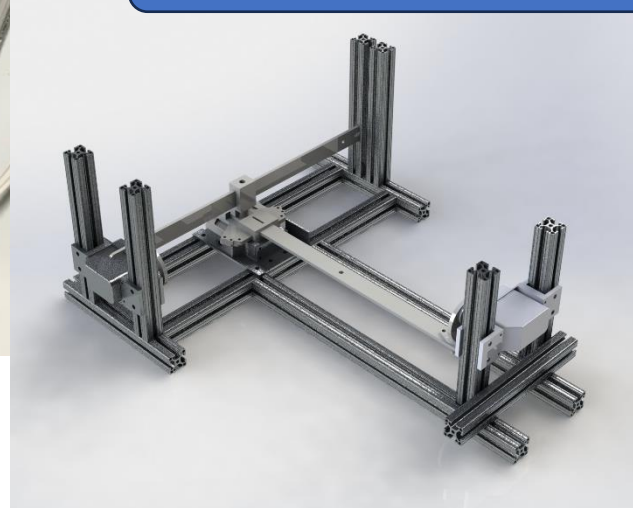
Created a custom fatigue testing machine for drone powertrain benchmarking equipment



Cyclic thrust and torque application on drone testing device



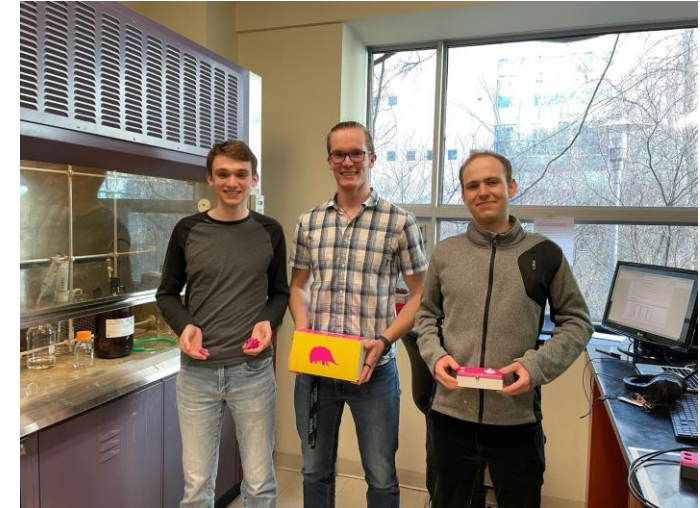
Improved powertrain mounting and hysteresis characterization



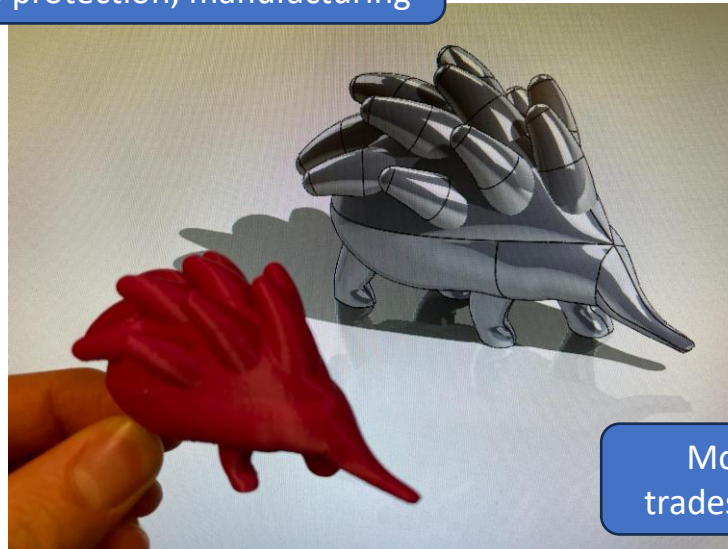
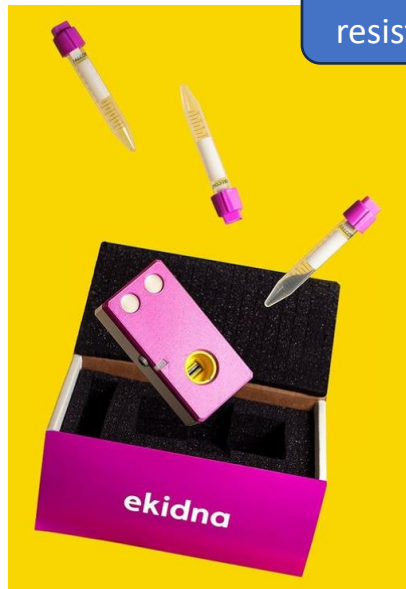
Drone powertrain benchmarking with testing device

## Ekidna | Product Design

Performed mechanical product design of a novel consumer electronic device and improved injection molded component design



Device designed for ease of use, solvent resistance, drop protection, manufacturing



Modeled mascot for tradeshow and media use





## Raufoss Neuman | Automotive Factory Line Expansion

Designed tools and fixtures for an automotive suspension manufacturing line addition



Bushing tracks & sensor mounts



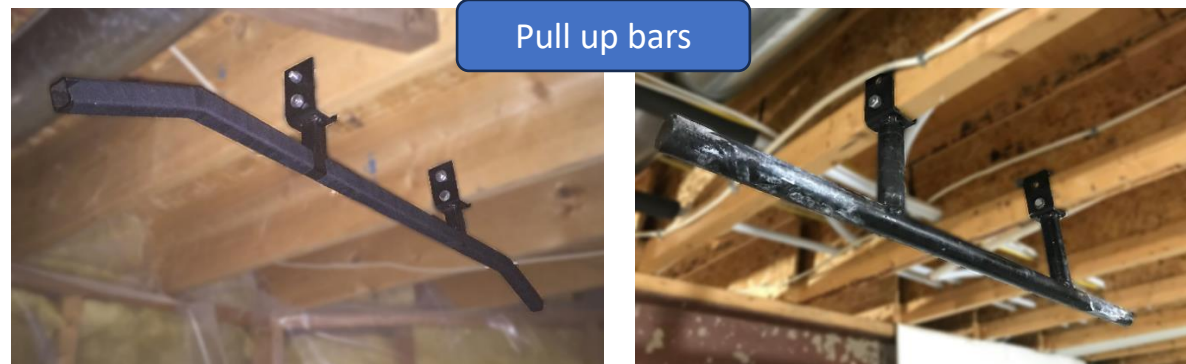
Chemical tank access hardware & robotic arm grippers





## Metalworking, Woodworking, Landscaping

Undertaking various projects in my free time to hone my welding, machining, woodworking, and heavy machinery skills



Pull up bars



Barbell jack



Stone stairway  
construction  
with excavator



Coffee table

