

AMISHA CHANDRA

Mechanical Engineering at UC Berkeley

amishac223@gmail.com • 714-492-4949 • www.linkedin.com/in/amishac

Rapid Robotics - 3D LiDAR Scanning Lightbox



Scanning unit using iPhone's Lidar technology to take images of object and stitch into high-res 3D model. Arched arm pulley structure precisely moves iPhone to 3 positions.

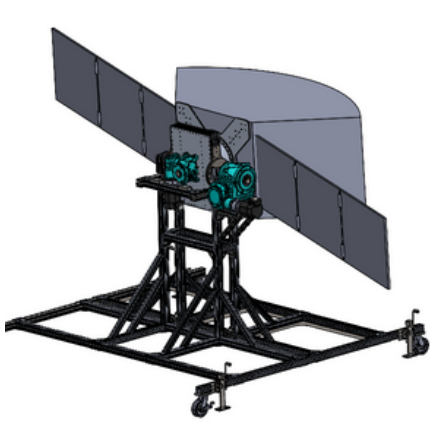


Prototyped design by laser cutting wood stock, and then acrylic. Performed Solidworks FEA simulations to ensure no material deformation under load.

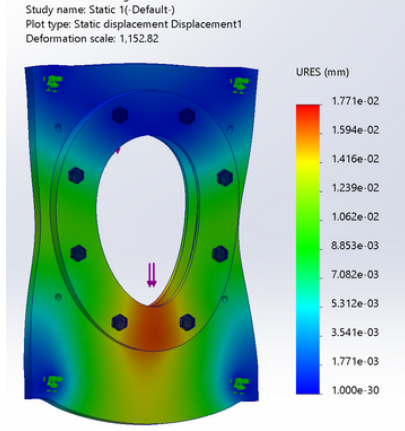


Utilized Solidworks and Onshape for CAD design. First iteration features a rack and pinion system later improved to a pulley system for less friction, and centralized electronics with lower cg.

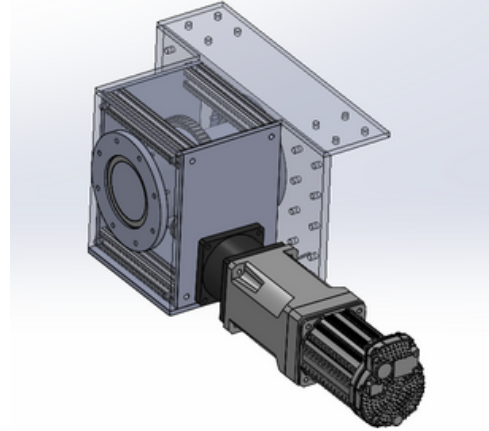
Muon Space - Electromechanical Turnover Dolly



Dual-axis turnover dolly capable of rotating an XL-class satellite from vertical to horizontal during build/test operations. Focused on 90° rotation mechanism and integration with structure.

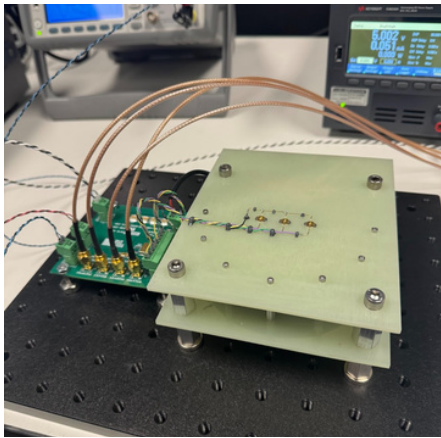


Ran Solidworks FEA to analyze static/axial loads, ensuring bearing components passed with FOS of 3. Performed angle of twist, shear stress, and torque hand calcs to determine bolt preloads.

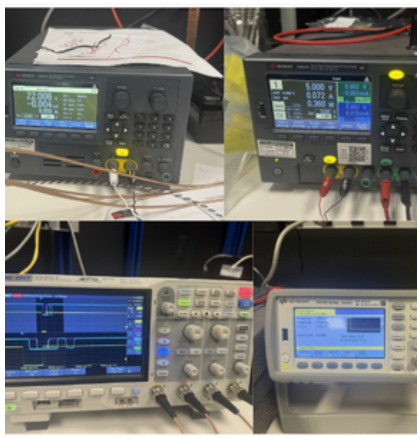


Utilized Solidworks for design with NEMA motor, electromagnetic brake, and worm gear system for zero backlash. Aluminum 80-20 channels for structure and sheet metal panels to enclose gear box for clean room compliancy.

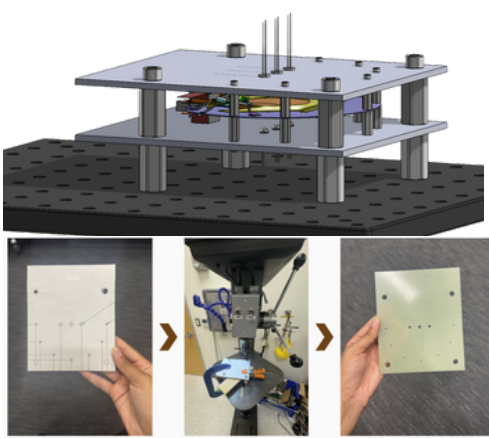
Malin Space Science Systems - VENDI Shutter Characterization



Mechanical shutter characterization for NASA's Davinci mission. Designed LED+phototransistor array to track center, trailing, and leading edges of shutter.

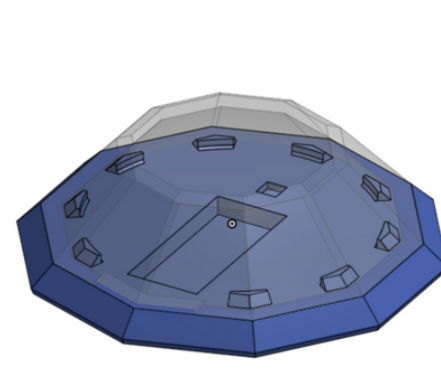


Developed python script to automate shutter testing over voltage and temperature. Used oscilloscope, function generator, and 2 power sources for shutter and array.

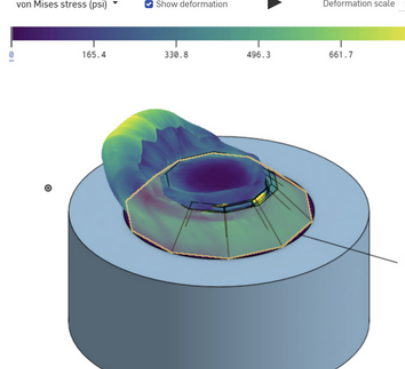


Modeled assembly in Solidworks and created engineering drawing to manufacture fiberglass plates for securing shutter using drill press. Assembled components on breadboard, elevating shutter.

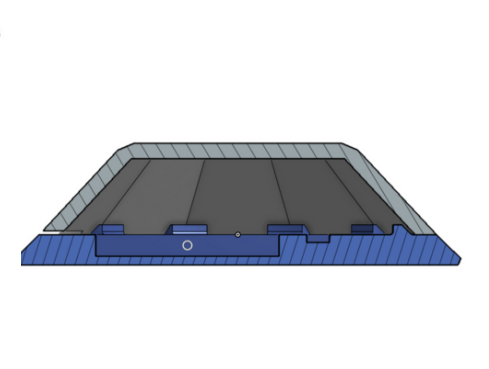
eNano Technologies - Micro BLE asset tracker compact enclosure



Design of eNano's nanoTag casing for micro BLE asset tracker. Prototyping design with FDM & SLA printing and researching biodegradable alternative materials.

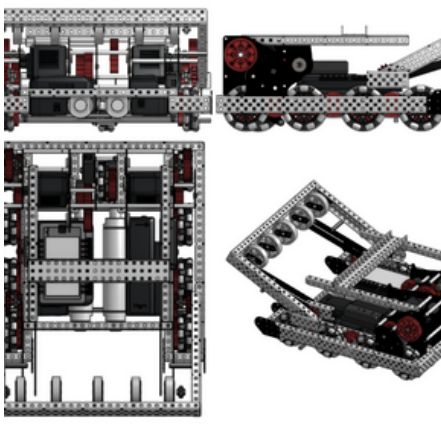


Utilizing SimScale to analyze static and adhesive loads on the shell. Ensuring loads do not affect flexible PCB or coin cell battery housed inside.

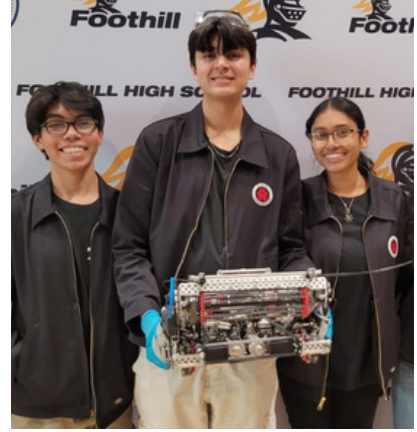


Design created using Onshape. Features a tapered side profile to deflect loads and maintain a flat profile. Researched tolerances for SLA printing to ensure consistent fit as design is less than 12 mm wide and 4 mm tall.

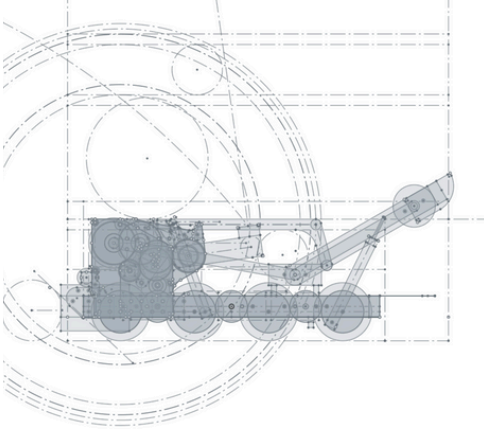
Perrybotics - Competitive Mobile Robot



Developed an 18" x 18" x 18" mobile robot, designed on Onshape, manufactured custom components, documented system geometry, programmed robot odometry.



Design features PTO system to maximize power sharing from drivetrain to catapult system. Pistons inside chassis shift drive train gears and actuate roller intake.

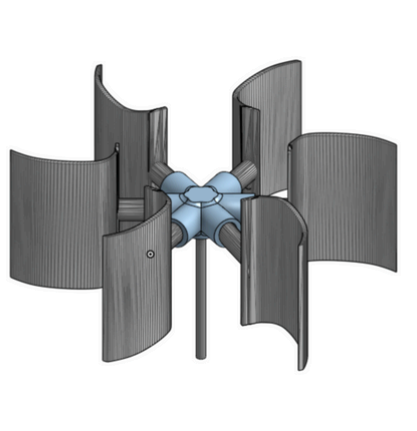


Robot geometry charted in Onshape. Laser cut polycarbonate structure and aluminum channels to reduce weight. Used drill press, table saw, band saw, and mill to create custom bevel gears.

TAFLab - VAWT Wind Energy Systems for Autonomous Ocean Drones



Designs wind energy harvesting systems to power long-duration autonomous sailboat drones. Deployed at Marina to test, supporting reliable power generation in harsh ocean conditions.

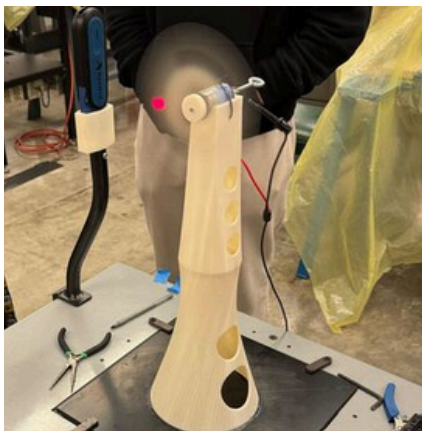


Designed in Onshape and supported with hand calculations using surface area and wind speed to predict power generation and efficiency.

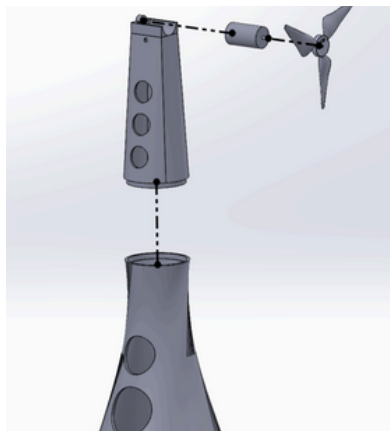


Fabricates mechanical components through 3D printing/post-processing to ensure marine durability. VAWT tested with industrial fan and connected to NEMA generator + circuit measuring RPM.

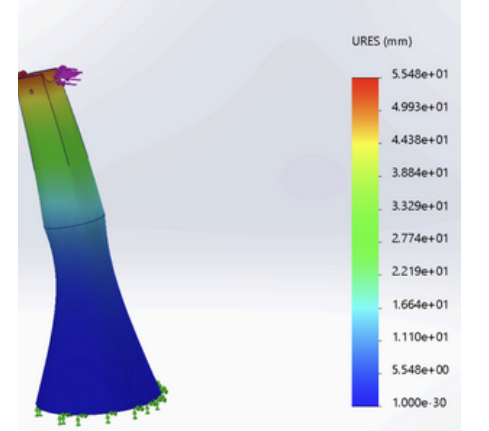
Engineering Design Course - Wind Turbine



Led design & manufacturing of a 3D printed energy-efficient windmill, optimizing for maximizing power output and minimal deflection. Researched blade profile, angle of attack/twist and 3D modeled for best aerodynamic performance.



Designed in Solidworks as 3 separate fixtures to be assembled and adhered together. Modeled with material and size constraints in mind, and used NACA airfoil as inspiration for turbine geometry.



Validated design with power and deflection tests and FEA simulations to predict performance, comparing theoretical results with experimental data.