NANDAN SESHADRI

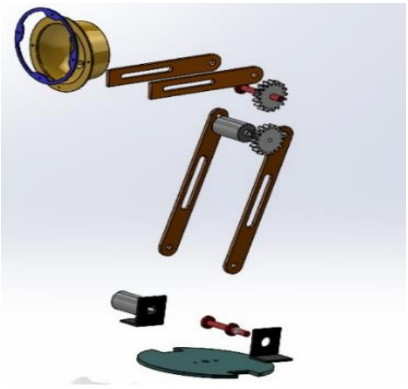
Mechanical engineer at University of California San Diego

n1seshadri@ucsd.edu

linkedin.com/in/nandan20

(858) 250-9047

HAPTIC BOXING GLOVE – UCSD



What?

- While working in a team of three, a boxing glove simulator was developed to offer haptic feedback while engaging with a virtual environment.
- Implemented algorithms to control the position of device in real-time.

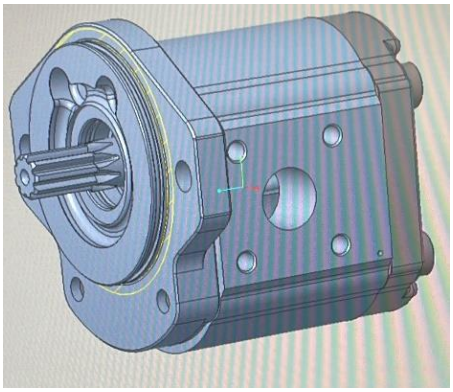
How?

- Used **SolidWorks** to design the components of device and applied **GD&T** on all the drawings.
- Real-time control of the device's position was achieved through the implementation of algorithms using **Arduino IDE**.
- **Processing** Real-time control of the device's position was achieved through the implementation of algorithms.

Results

- the final product performed effectively, and we conducted testing on 12 individuals with diverse fist sizes using the rendered gloves.

DESIGN OPTIMIZATION OF GAR PUMP HOUSING – REXROTH BOSCH



What?

- Working with a team of four, we aimed to optimize the design of a gear pump to achieve cost-effectiveness and reduced weight.
- Minimize the yearly production cost associated with the gear pump.

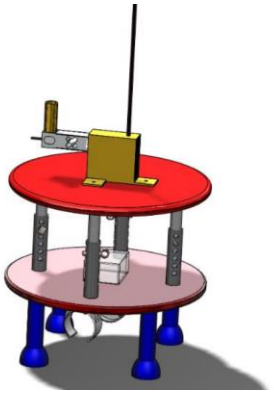
How?

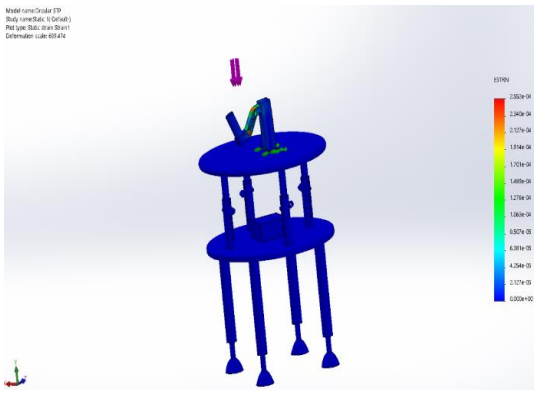
- Using **PTC Creo**, we designed and assembled three distinct pump housing prototypes, integrating different pump components.
- Applied **FEA** to analyze potential points of fracture within the pump.
- Carried out rigorous testing of the prototypes on a test bench for 100 hours to obtain the most optimal design.

Results

- Effectively reduced the annual production cost of parts by **$1.2 million** using **DFM** principles, while meeting the customer's requirements.

STATIC TEST PAD FOR ROCKET MOTOR - STAR





What?

- Design a Static Test Pad for gathering data and analyzing the performance of high-powered rocket motors by working with a team of 5.
- Investigated how the load cell performs when subjected to various loads on the test pad.

How?

- Utilized **SolidWorks** to design the test pad.
- Utilized **FEA** on SolidWorks to determine the maximum load capacity of the test pad.

Results

- The test pad proved capable of accommodating loads of up to 150N, indicating a satisfactory strength-to-weight ratio.
- The design has ergonomic features, facilitating convenient transportability and reusability.

NANDAN SESHADRI

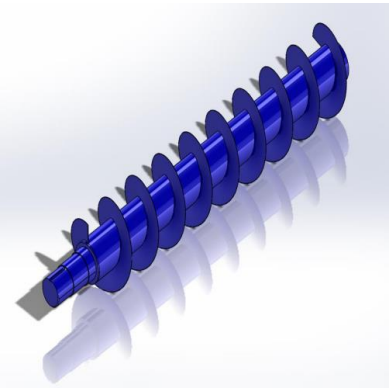
Mechanical engineer at University of California San Diego

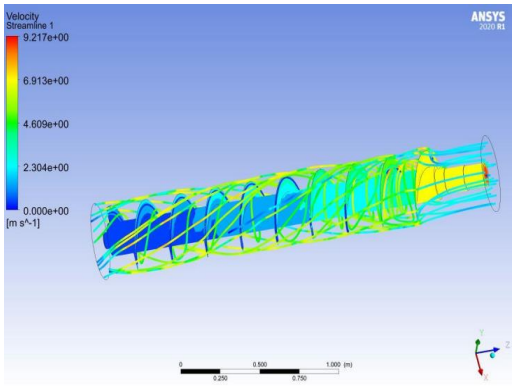
n1seshadri@ucsd.edu

linkedin.com/in/nandan20

(858) 250-9047

VANE DESIGN OF A SPIRAL WATER TURBINE – VTU





What?

- Collaborating in a group of four, our task was to design the vanes for an affordable spiral water turbine intended for generating power for household applications.
- We performed simulations at various flow velocities to analyze the performance and behavior of the vanes.

How?

- Utilized **SolidWorks** to design the vanes.
- Employed **ANSYS Fluent** to simulate the behavior of the blades at different flow velocities.

Results

- The final design blade design was simulated at 15m/s, 20m/s, and 25m/s to visualize the flow.