

Project Overview

Team ShoreMobility was challenged with a project by Quality of Life Plus, a national organization dedicated to assisting disabled veterans, and AmpSurf, a non-profit that provides adaptive surf therapy to those with disabilities. The project aims to design a self-propelling beach wheelchair, controllable by a joystick. This chair will allow adaptive surfers to navigate through the beach without assistance, which will allow them more independence. It is also designed to easily withstand wet and sandy terrains.

Acknowledgements

Team Shore Mobility would like to thank Dr.Shaffar, Scott Huyvaert of Quality of Life Plus, Dana Cummings of AmpSurf and Michael Lester at the SDSU Machine Shop.

Meet the Team



Xavier Arambula
Team Lead



Nicholas Constantino
Design Lead

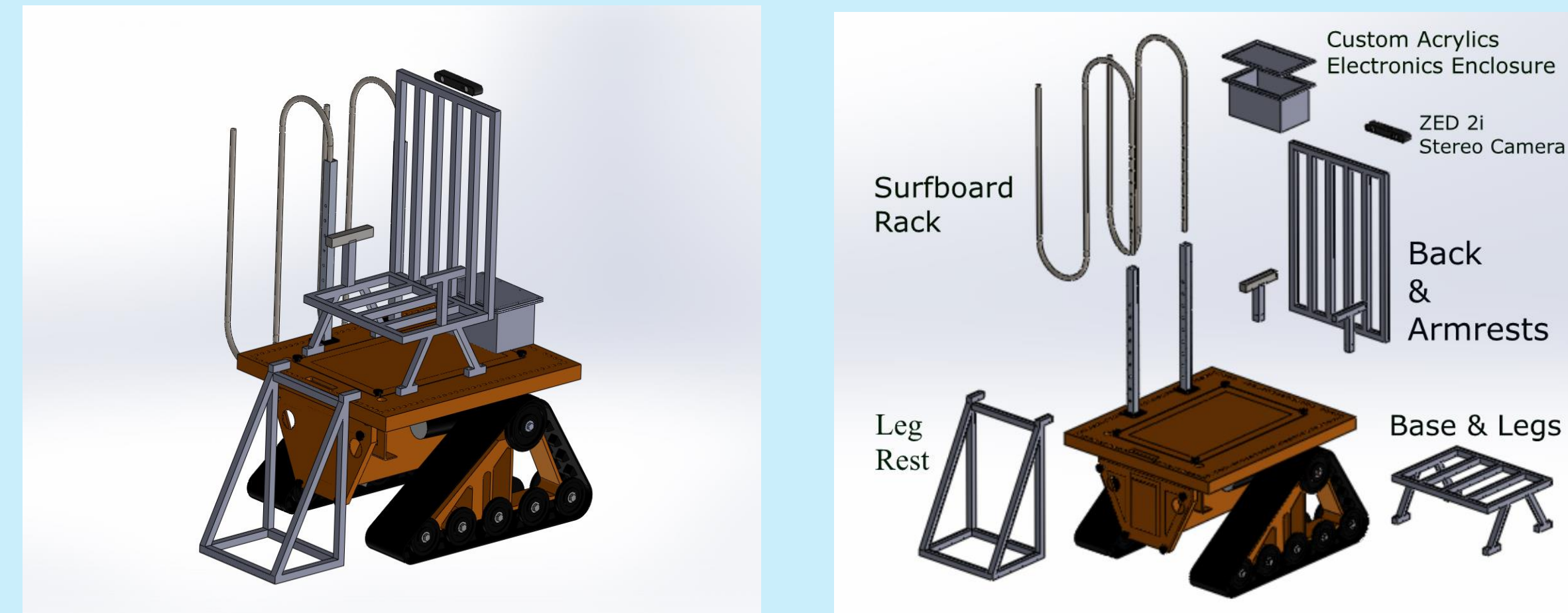


America Hernandez-Guillen
Testing Lead

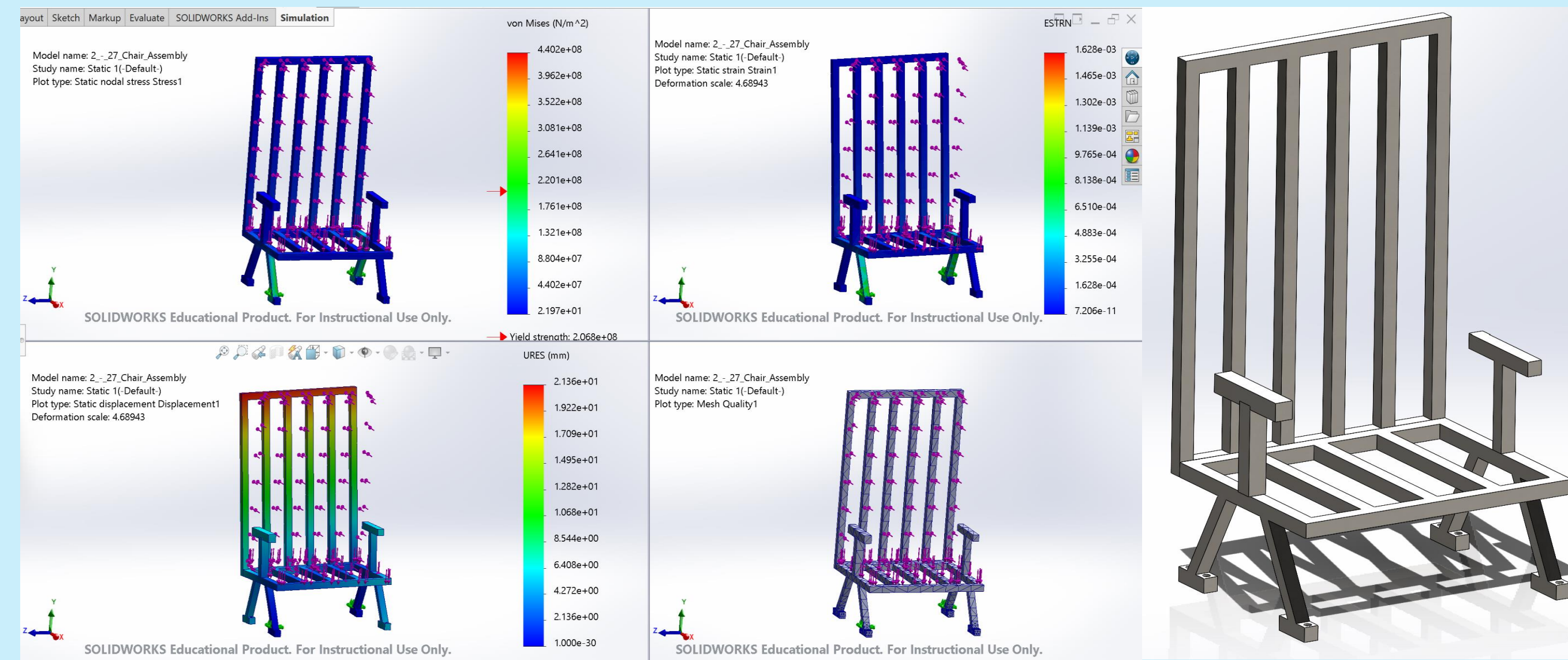


Idil Nunow
Quality Lead

Design

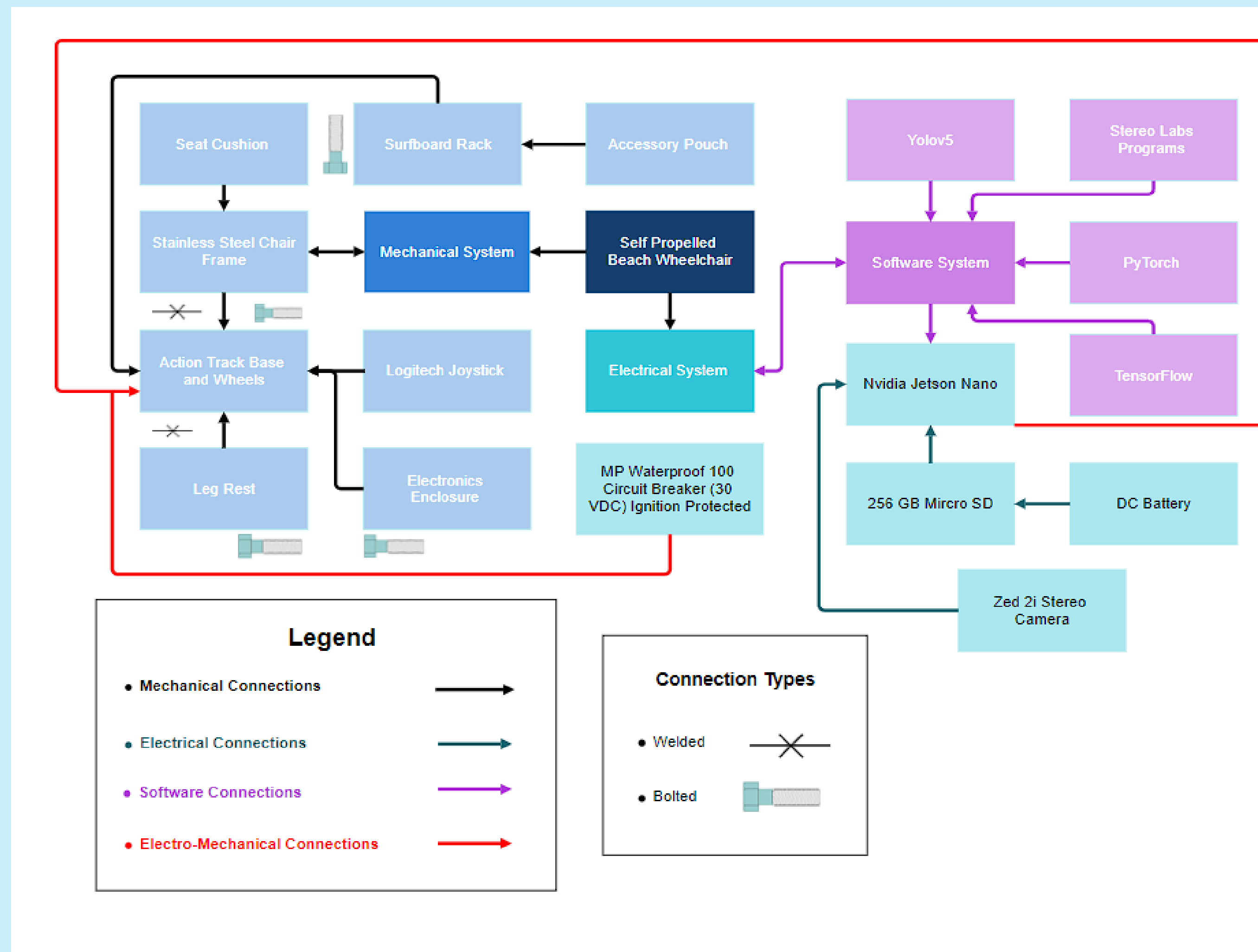


CAD Model with exploded view



FEA Analysis performed for reliable FOS using a force of 300 lbf

System Level Diagram



Manufacturing



Band Saw, Cold saw and CNC Mill used to prep steel bars for welding

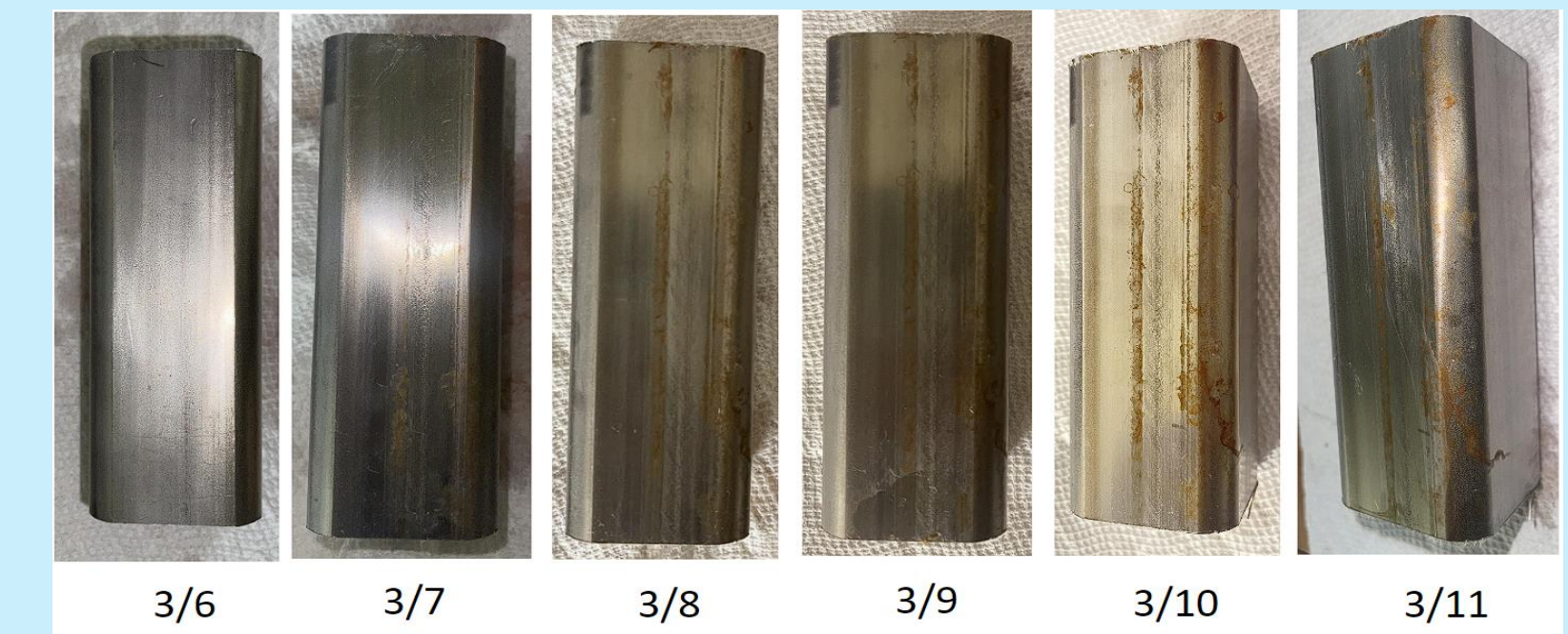


Flux Core Welding performed to construct chair and leg rest

Testing



Corrosion Test: Salt Fog Chamber



Object Detection Demo with YOLOv5 & PyTorch

