

Steven Kuo

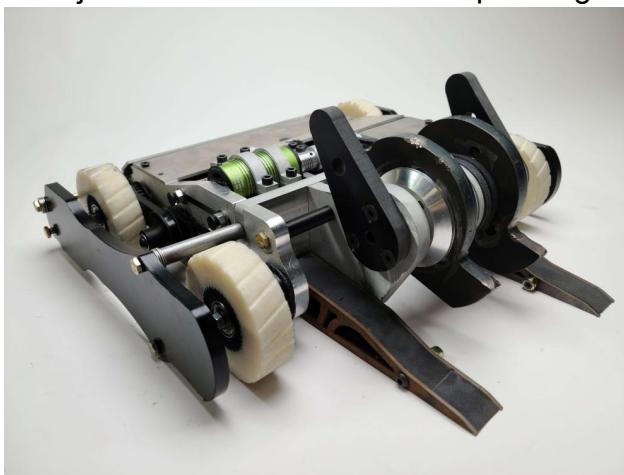
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Project: Leatherbacks Combat Robotics 30 lb robot

When: September 2022 - Present

Description:

I work on a team of seven people to build a 30 lb robot to compete in NHRL (Norwalk Havoc Robot League). For this robot, I used Solidworks to design the outer profile of the forks. The forks pivot around a point to always maintain contact with the ground, and it also includes limiting geometries to ensure it does not pivot more than 20° from horizontal. I assisted in manufacturing through subtractive methods such as running the waterjet with CAM software and operating the drill mill for precision machining.

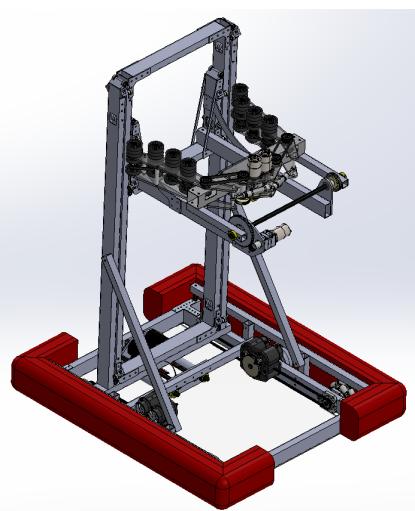
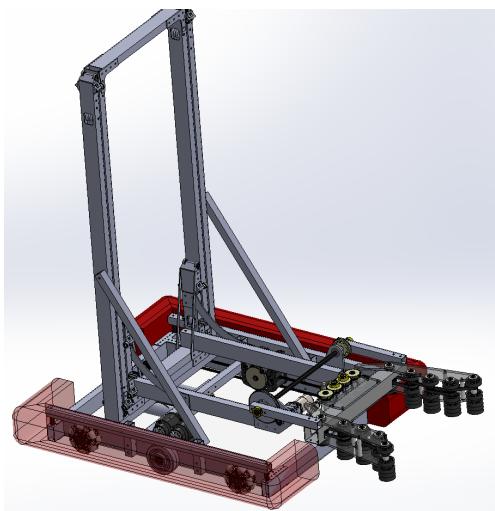


Project: Modeling a FIRST Robotics Competition (FRC) Robot in CAD

When: June 2022 - August 2022

Description:

This is a personal project where I design a FRC robot in Solidworks so that I can translate my Autodesk Inventor skills and experience from FRC Team 1727 into Solidworks. The robot is designed to manipulate cubes and place them on elevated platforms at various heights. This is achieved through an intake with compliant rollers on a two stage elevator.



Project: FIRST Robotics Competition Team 1727 (2022 Season)

When: January 2022 - April 2022

Description:

For the 2022 season, I managed a team of twenty people to design a robot that can intake 9 inch diameter tennis balls from the field floor and shoot them into a funnel 8 feet above the ground. Additionally, the robot was designed to climb a series of monkey bars that increased in height. In terms of the robot, I mainly developed the geometry of the intake on a four bar linkage and the gearbox for the climbing mechanism with CAD in Autodesk Inventor. I also assembled the intake and climbing mechanism, as well as operated and troubleshoot 3D printers to produce parts. Furthermore, I oversaw the programming team and aided with debugging.



Project: FIRST Robotics Competition Team 1727 (2020 Season)

When: January 2020 - March 2020

Description:

For the 2020 season, our team built a robot designed to intake and shoot foam balls while being allowed to hold five at a time. I helped prototype mechanical subsystems, including one that allows the robot to climb and hang on an uneven bar. I also worked on conveyor subsystems that indexed the balls and transported them to the shooter. In this subsystem, I specialized with welding polyurethane belts for the conveyor.

