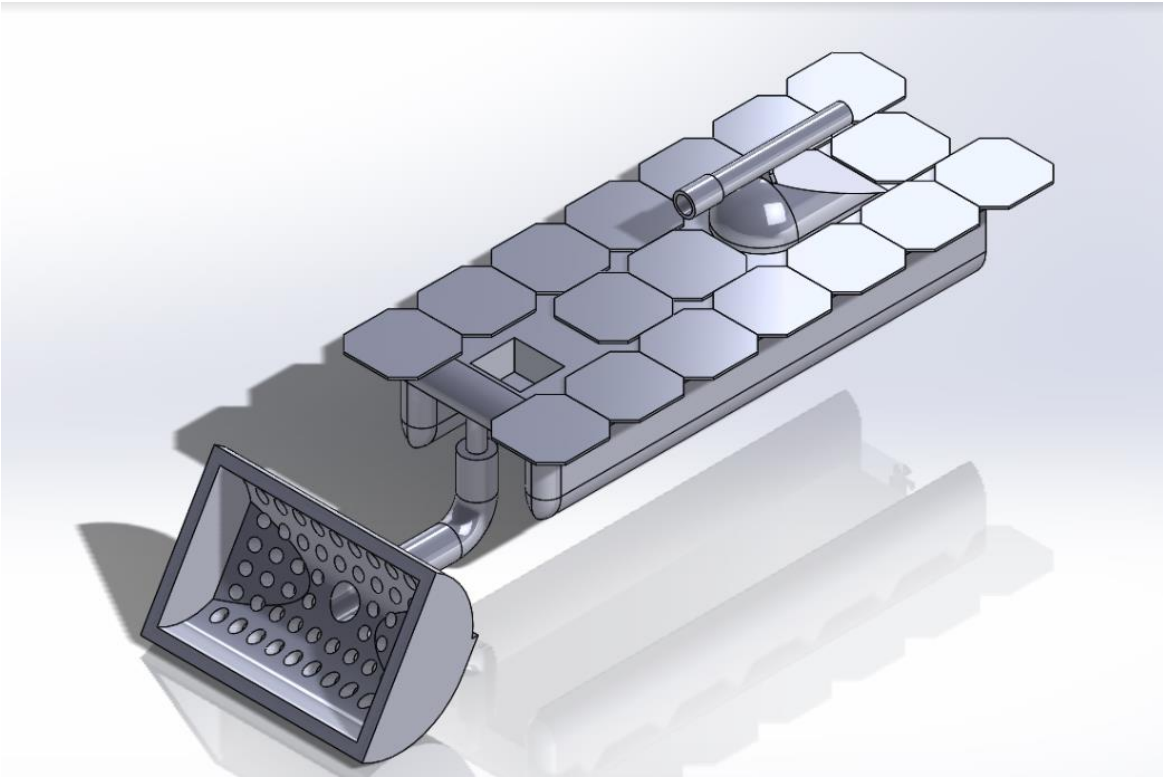
Midpoint Presentation

Pacific Garbage Patch C3

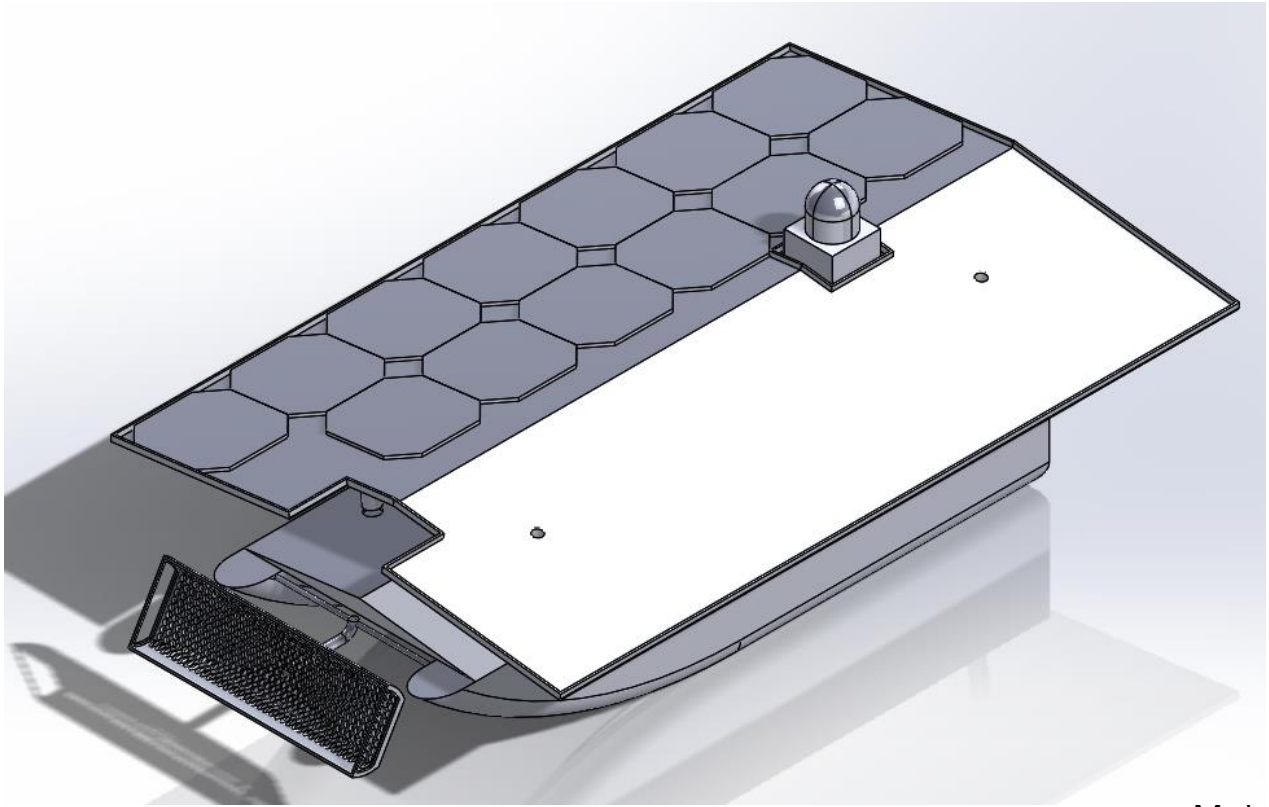
Project Description

Due to trash collecting in the oceans, the team is tasked with creating an autonomous device that can identify, locate, and collect plastic trash. To model a larger scale boat in the ocean, a RC boat will be modified to autonomously collect ping pong balls.

Previous CAD Model



Updated CAD Model



Mohammad Alajmi

Design Description

The team created a design to collect ping pong balls autonomously by using multiple subsystems:

- RC boat
- Camera to detect the ball and send data to the boat
- Grabber to scoop the ball into a container on the boat
- Solar cells to keep the batteries charged to run continuously
- Motors for the grabber and rotation of the camera
- Platform above the boat for the cells.

Updates

Grabber

- Shape
- Gears
- Mass Reduction

Cells

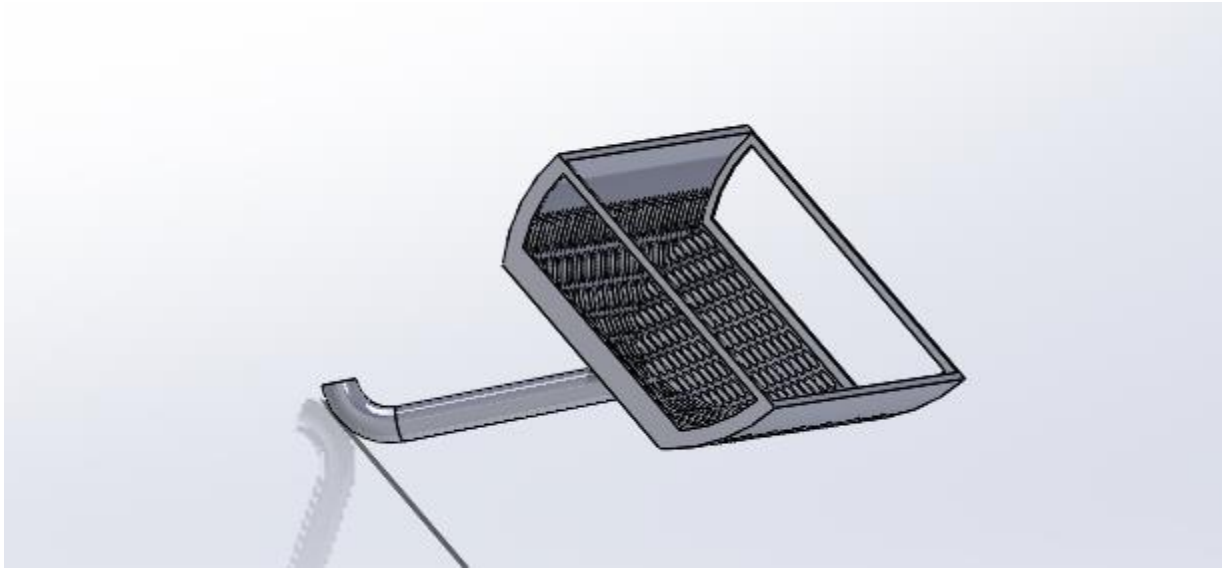
- Amount
- Platform

Collection

- Under Platform

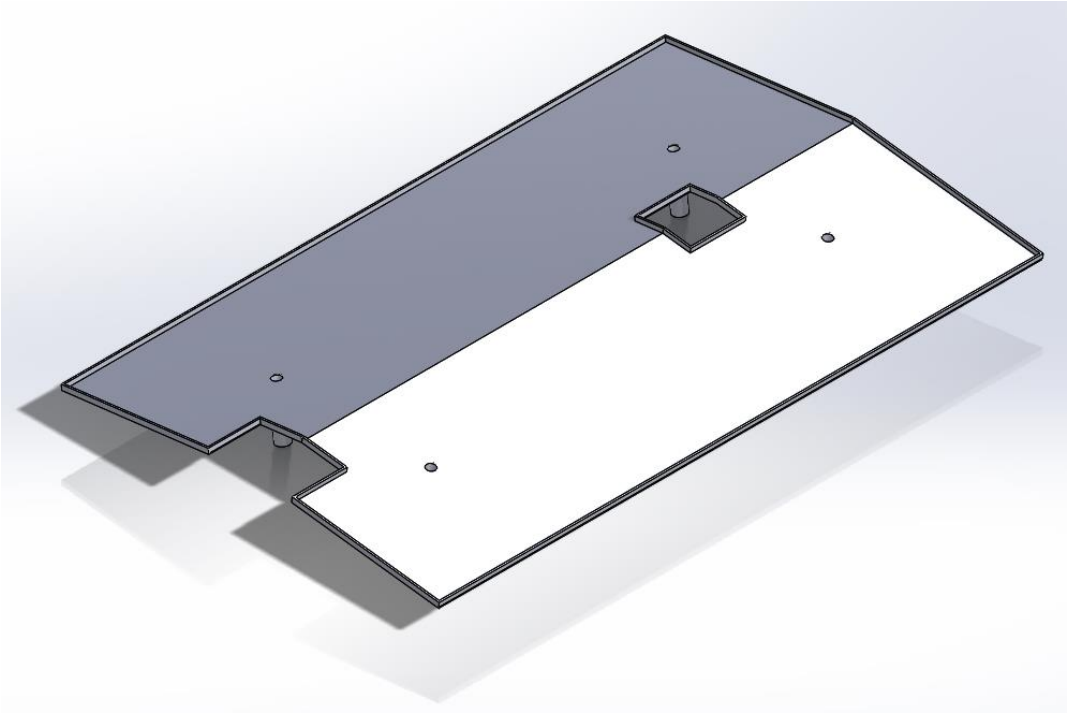
Jake Goodman

Updated Grabber Design



Stephen Sauder

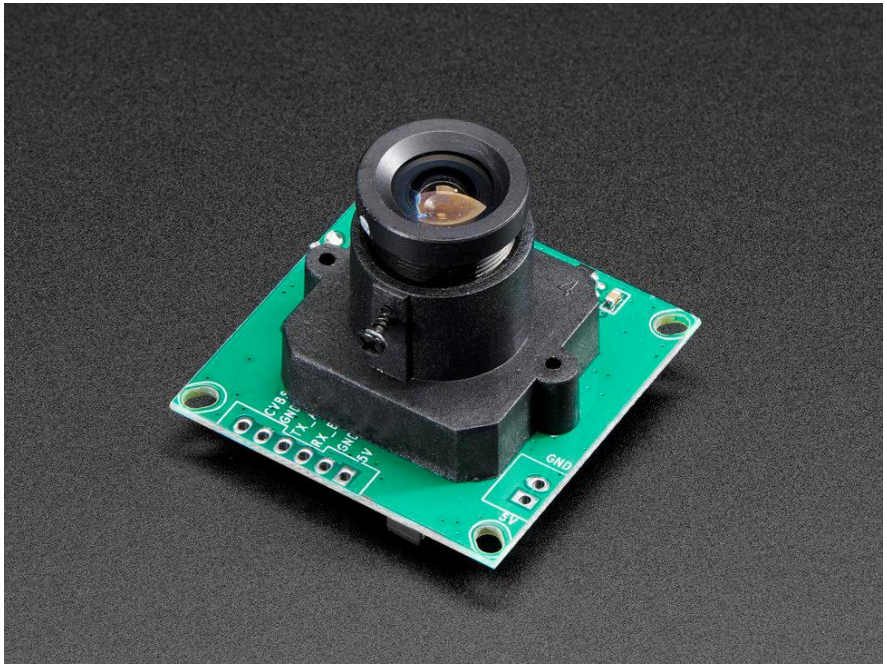
Updated Cell Platform



Salman Alotaibi

Analytical Analysis

- Camera Choice
  - Weatherproof
  - Identification
- Grabber Design
  - Reduced Mass
  - Larger Projected Area



[1] A. Industries, "TTL Serial JPEG Camera with NTSC Video", *Adafruit.com*, 2019. [Online]. Available: https://www.adafruit.com/product/397. [Accessed: 10- Mar- 2019].

Stephen Sauder

Manufacturing

Grabber

- Shafts/Bevel Gears
- Grabber Version 3

Camera

- Mount

Cells

- Mounting Platform

Jake Goodman

Testing

Release into body of water with ping pong balls

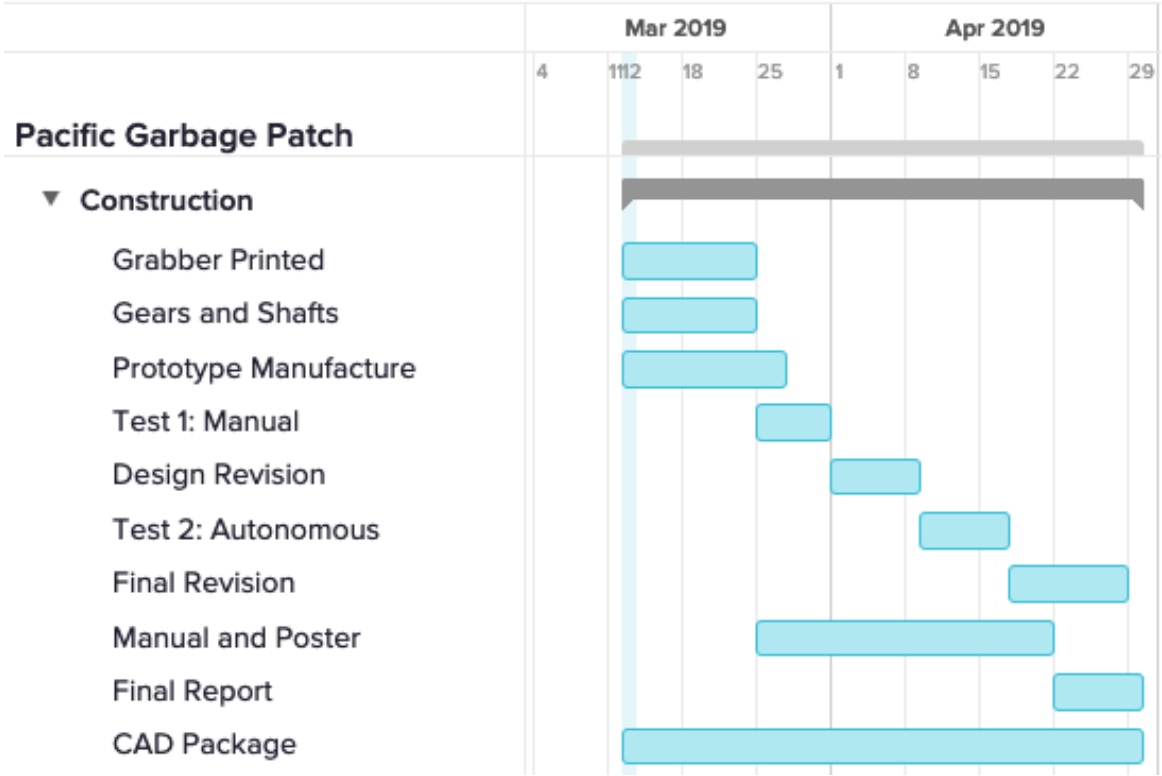
- Manually
- Automated

Schedule

Slightly Behind Schedule

- Design Shafts/Gears
- Mount Cells and Camera to Platform
- Arduino Automation

Gantt Chart



Stephen Sauder

Budget

Spent $700

- Boat - $400
- Solar Panels - $145
- Grabber - $80
- Camera - $50
- Motor - $25

Resulting balance - $800

Mohammad Alajmi

Q and A