



Hi Welcome!

Serrano Spider Claw

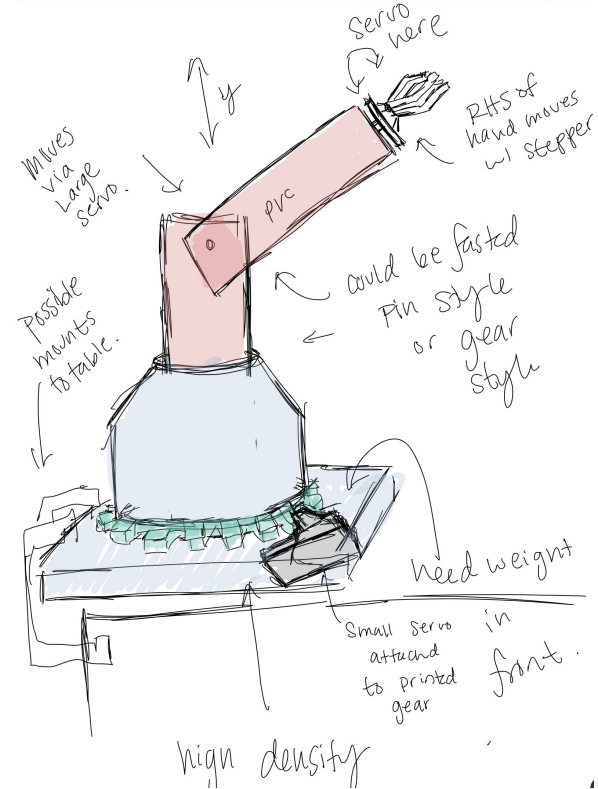
Tara Mellor, Melissa Baberia, Colin
Perry, Keiran Glynn, Leighton Quale,
Amin Khatibi



Early Design

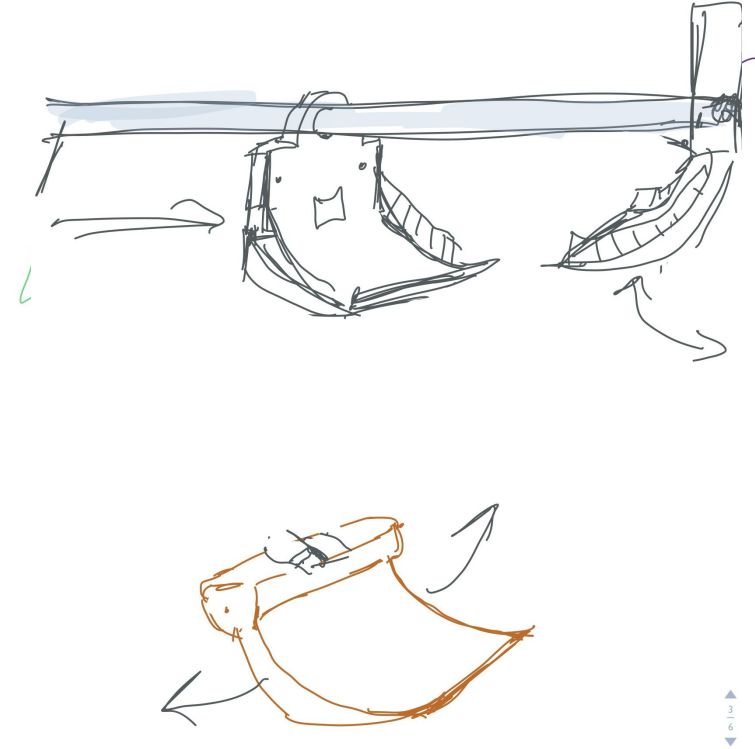
Analyzing the Problem

Challenge: “Over the course of the next three days, your team will develop a mechanical arm that can be controlled via Bluetooth. [...] The completed mechanical arm must be able to pick up a selection of small objects unassisted, receiving input from a user’s smartphone.”

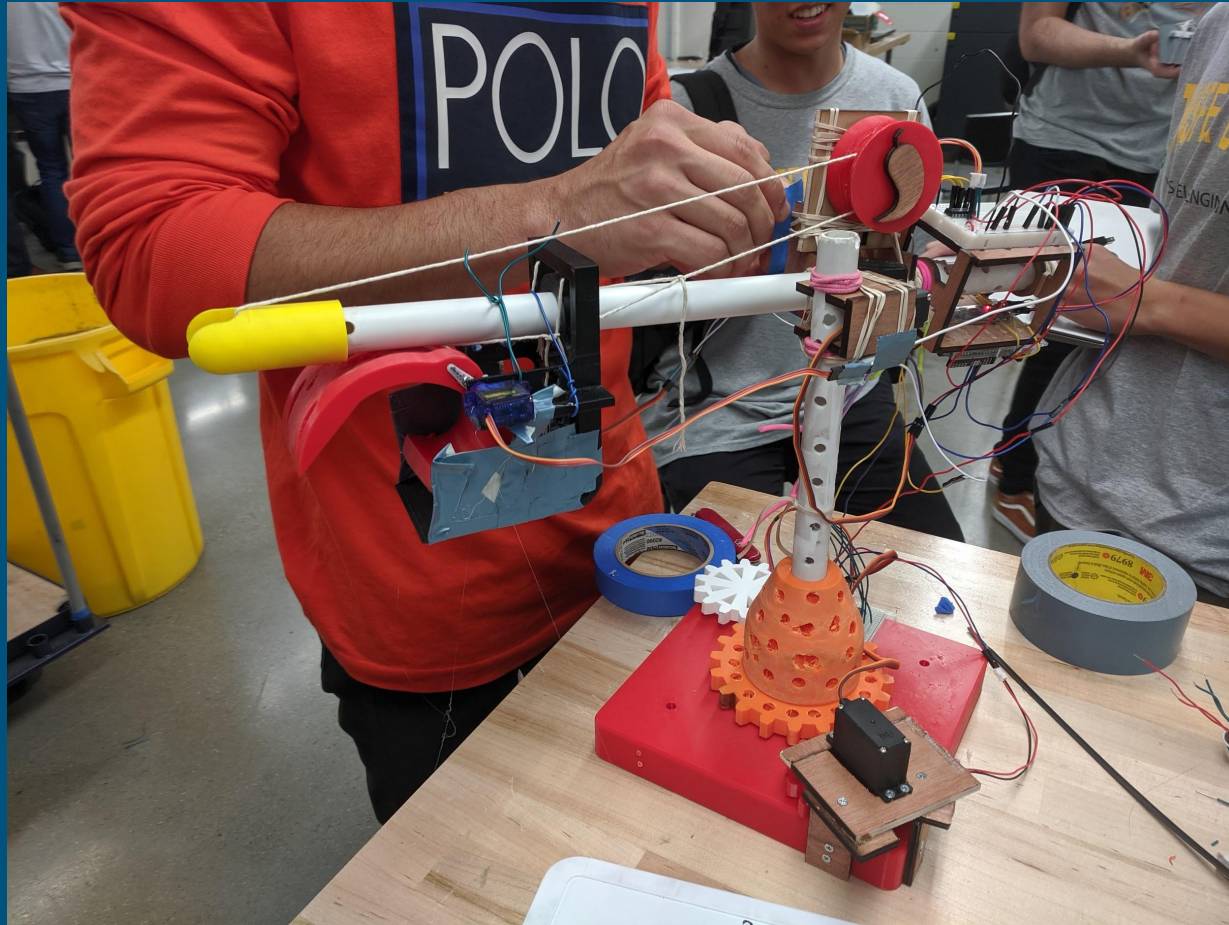


Customizing Our Design

- Addition of pulley system to move the crane along lever arm.
- Mounting of lever arm directly to servo, rather than a geared solution.
- Gearing to increase torque on rotator base.
- Switch to scooper-like claw, rather than a grabber.



Our Prototype



Member Contributions

Tara Mellor - Design

Member Contributions

Melissa Baberia - Assembly

Member Contributions

Colin Perry - Hardware

Member Contributions

Keiran Glynn - Frontend

Member Contributions

Leighton Quale - Backend

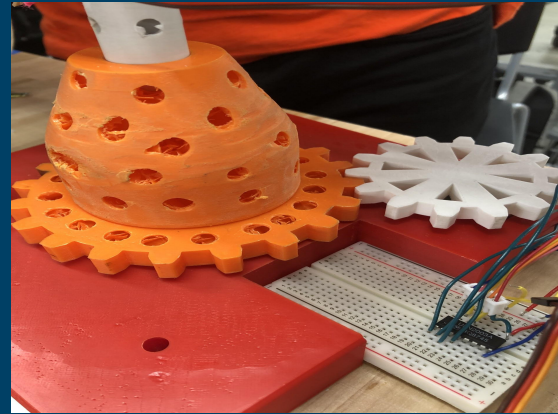
Member Contributions

Amin Khatibi - Assembly

Problems Encountered

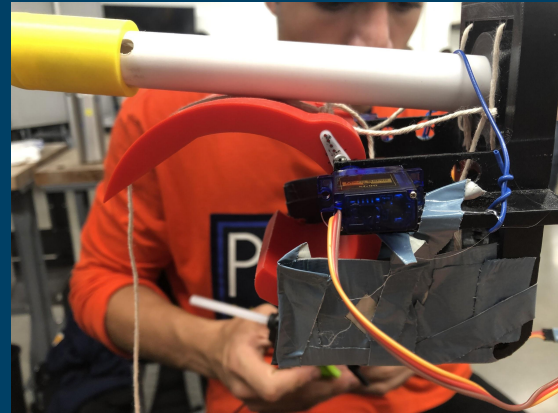
Base Binding

Uneven weight distribution, high friction, and weak steppers.



Claw Clearance

Theoretical Solidworks
dimensions not printing
correctly



Future Improvements

- Redesign of current claw prototype to match original model.
- Inclusion of gearing to provide more power to crane pulley.
- Redesign of the base rotator to include more gears for better torque conversion.
- Use of servos to rotate base, rather than a servo.

Thank You
