# Faith Jones

Engineering Design Portfolio

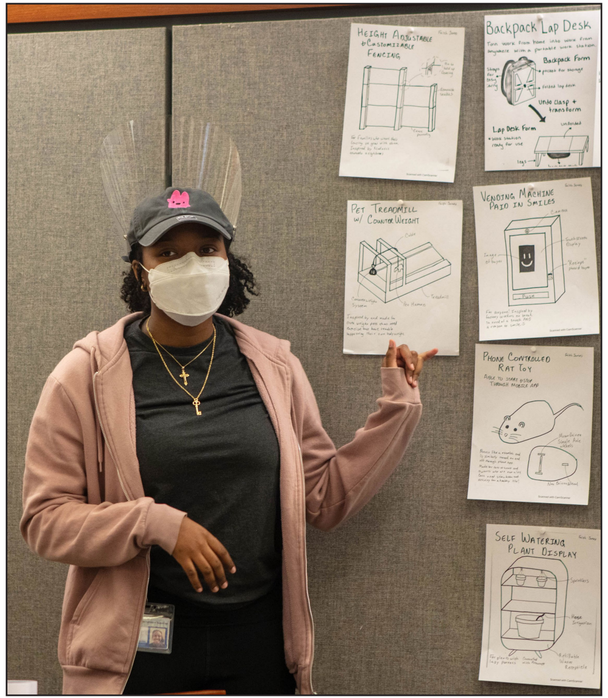
# Introduction

Hello, my name is Faith Jones!

I am a recent graduate.
I studied Mechanical Engineering with a concentration in Industrial Design.

I am interested in product engineering, but in particular I have a love for thoughtful and playful design.

faith.jones2.718@gmail.com
(773) 677-4046

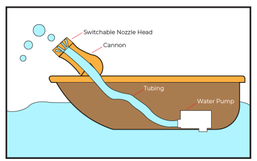



# Battle Boats Spring 2018

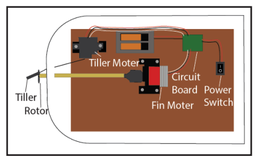
A remoted controlled toy boat designed for competitive play


Battle Boats is a toy product prototype I designed with a team of 4 other MIT freshmen for an introductory product design course.

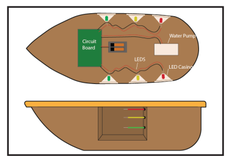
## How it works




Shooting



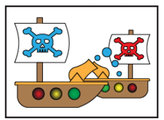

Driving

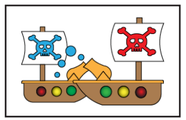


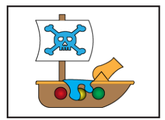

Scoring

## Early Prototyping

## How to play







## My Role

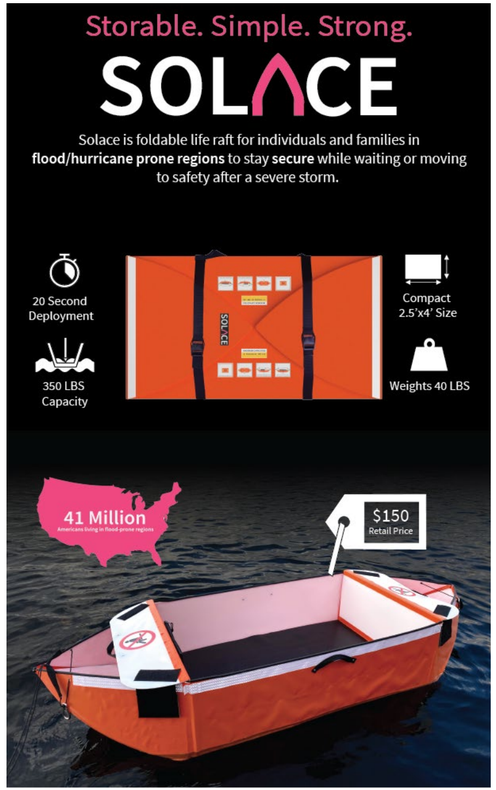
As part of this team I designed CAD models for the boat, prototyped and user tested boats aesthetics, and fabricated waterproof boat enclosure

## Skills Used

-Solidworks CAD
-Foam Rapid Protoyping
-Thermoforming
-Lasercutting

# Solace Fall 2020

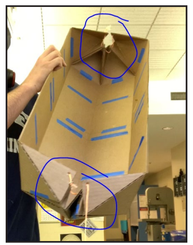
Solace is an affordable emergency life raft product

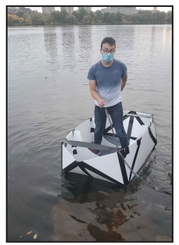



Solace was design by myself and a team of 15 other students for the mechanical engineering product development capstone course.

## Final Prototype

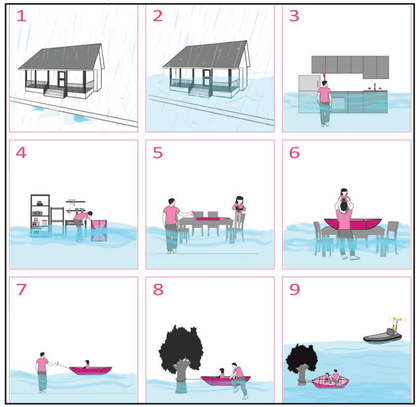

## Iterations of Form



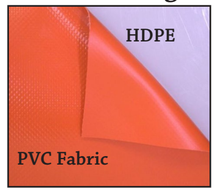


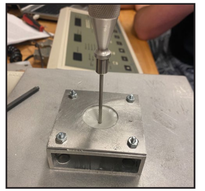


## Solace Story Board




## Material Testing

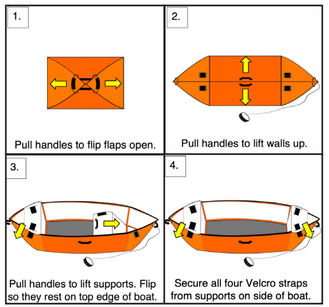


We performed puncture tests as well as tensile tests on connection with different adhesives to determine the best materials

## Full Scale Prototype

## Industrial Design


## My Role

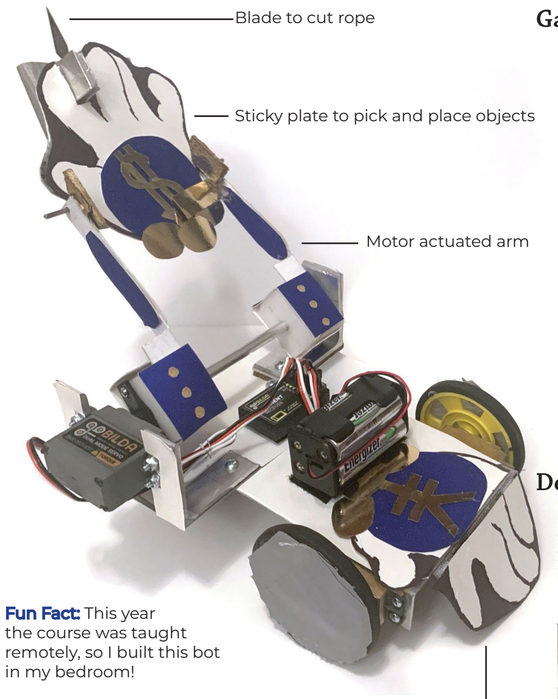
On this team I worked on the adhesive and seam teams. Toward the final prototype creation I lead the Graphics and Industrial Design teams.

## Skills Used

-Rapid Prototyping
-Material Property testing
-Adobe Illustrator and Photoshop
-Fabrication using soft materials

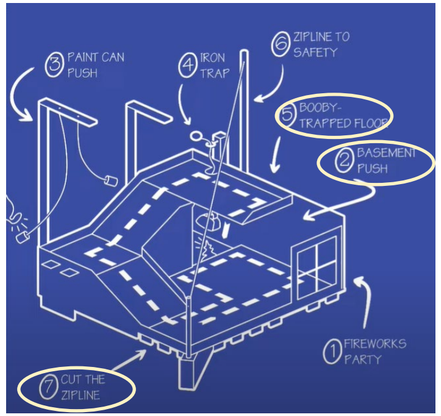
# The Hand Spring 2021

The Hand is a robot design to complete tasks in order to compete in a game




**Fun Fact:** This year the course was taught remotely, so I built this bot in my bedroom!

## Game Board and Strategy



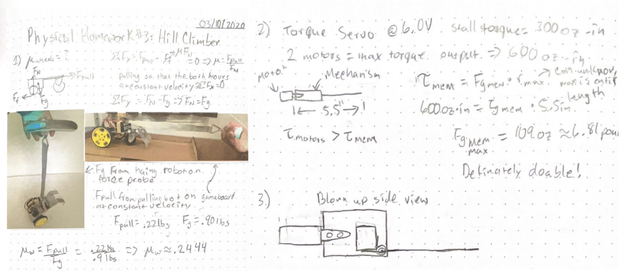

-Driving up and down incline

-Picking up and placing game objects

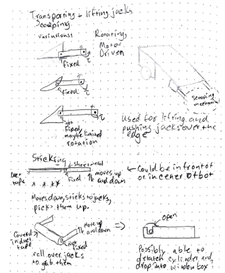
-Cutting rope above game board

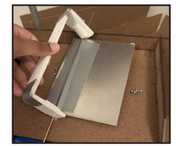
-Pushing game objects

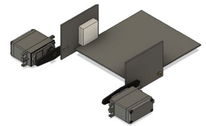
## Design Calculations

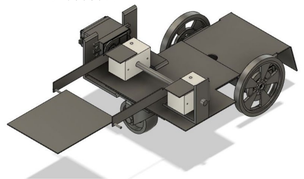



## Mechanism Prototyping

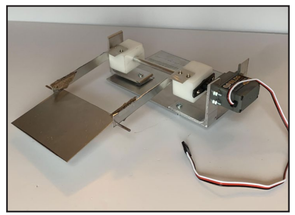


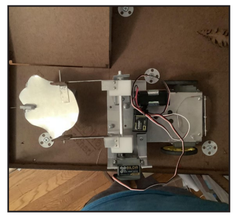


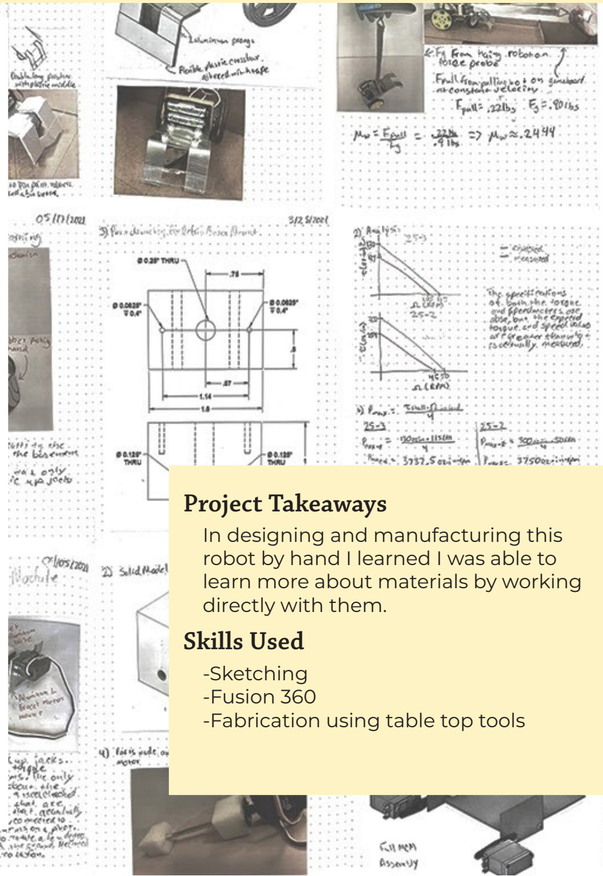




Based on feedback and calculations made reductions and improvements to make subsystem more robust







## Project Takeaways

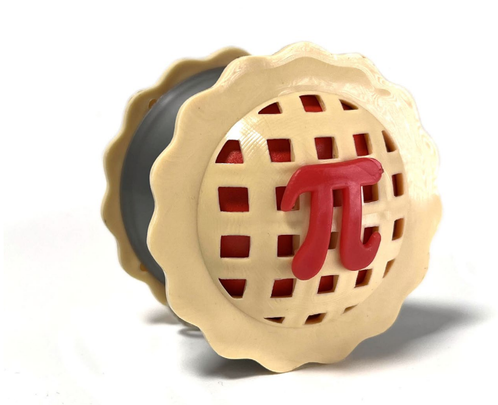
In designing and manufacturing this robot by hand I learned I was able to learn more about materials by working directly with them.

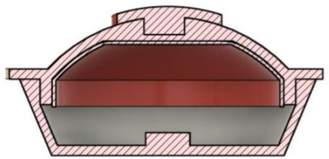
## Skills Used

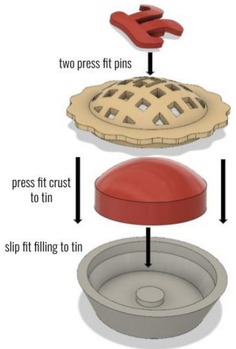
-Sketching
-Fusion 360
-Fabrication using table top tools

# Pi Pie Yo-yo Fall 2021

A pi symbol themed pie shaped yo-yo designed for mass production

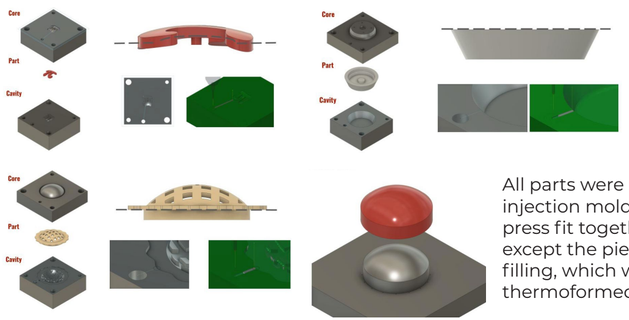







For this class I worked on a team of 4 other students to design this yo-yo and manufacture over 200 units, winning that year's manufacturing challenge

## Parts and Molds




All parts were injection molded and press fit together except the pie filling, which was thermoformed

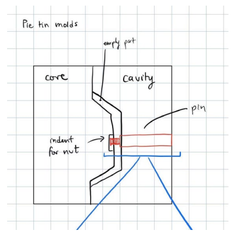


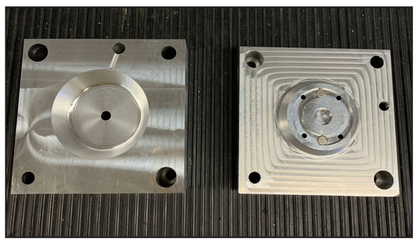
# Pi Pie Yo-yo Fall 2021


cont.

## Injection Molding and Press Fits

## Final Touches



Each yo-yo half includes an overmolded washer for weight, and an overmolded nut in the base to connect the two halves together.

### My Role

On this team I did CAD for yoyo parts, planed CAM to mill molds, and 3D printed mold for thermoforming.

### Skills Used

-CNC Milling
-Injection Molding
- Design thinking for mass production