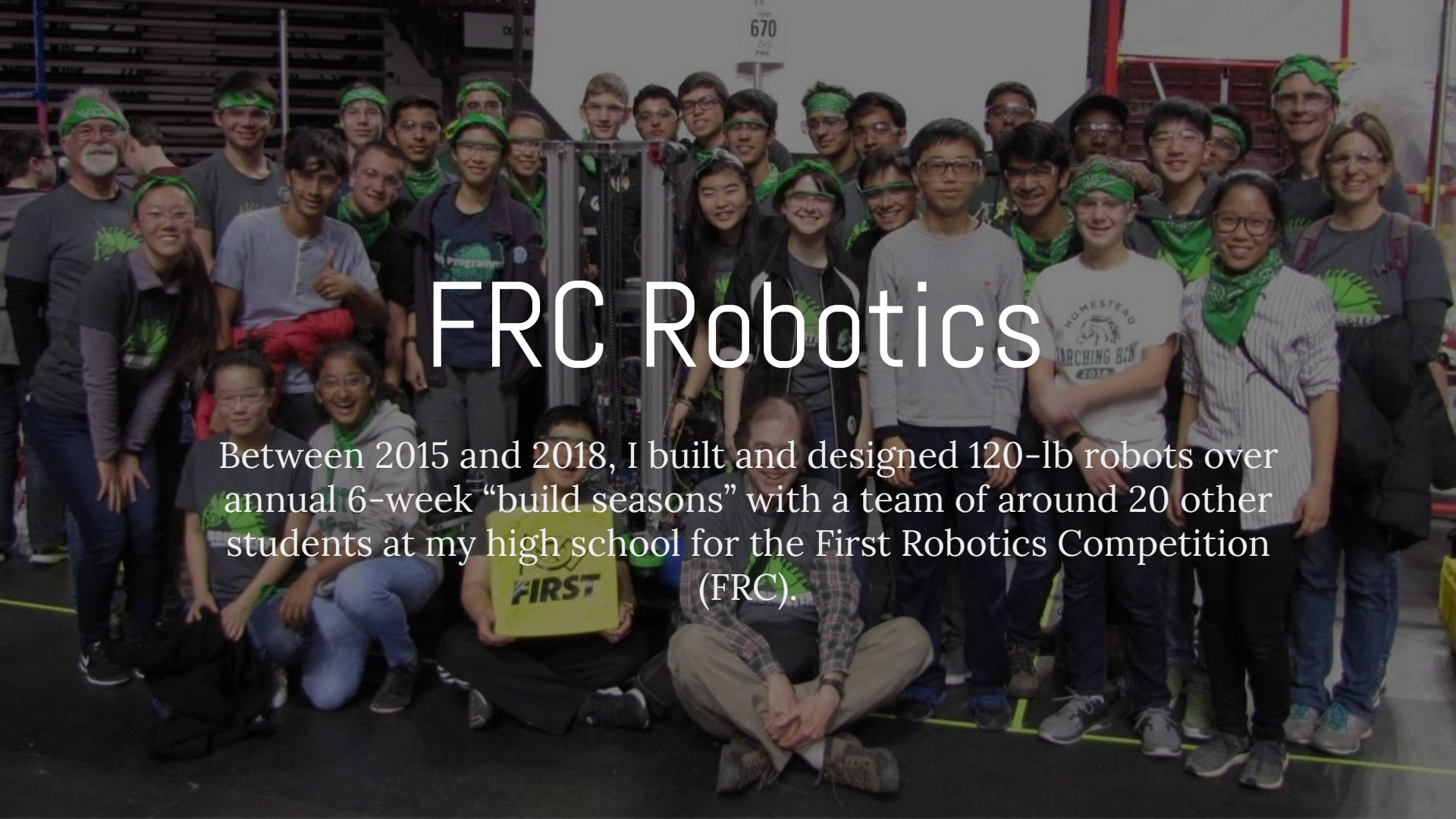


**Hi, My name is Allison Moore.**

These are some projects I've worked on!

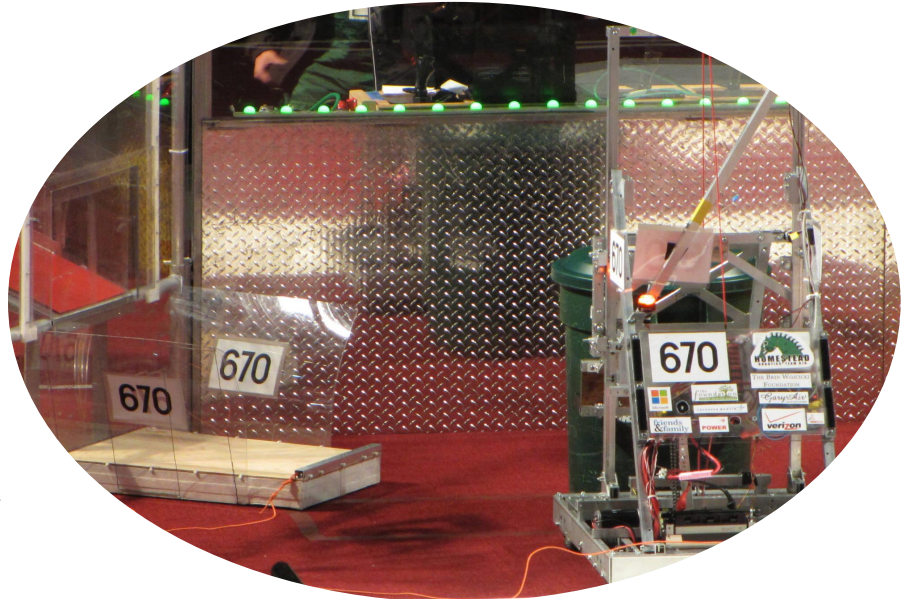


# FRC Robotics

Between 2015 and 2018, I built and designed 120-lb robots over annual 6-week “build seasons” with a team of around 20 other students at my high school for the First Robotics Competition (FRC).

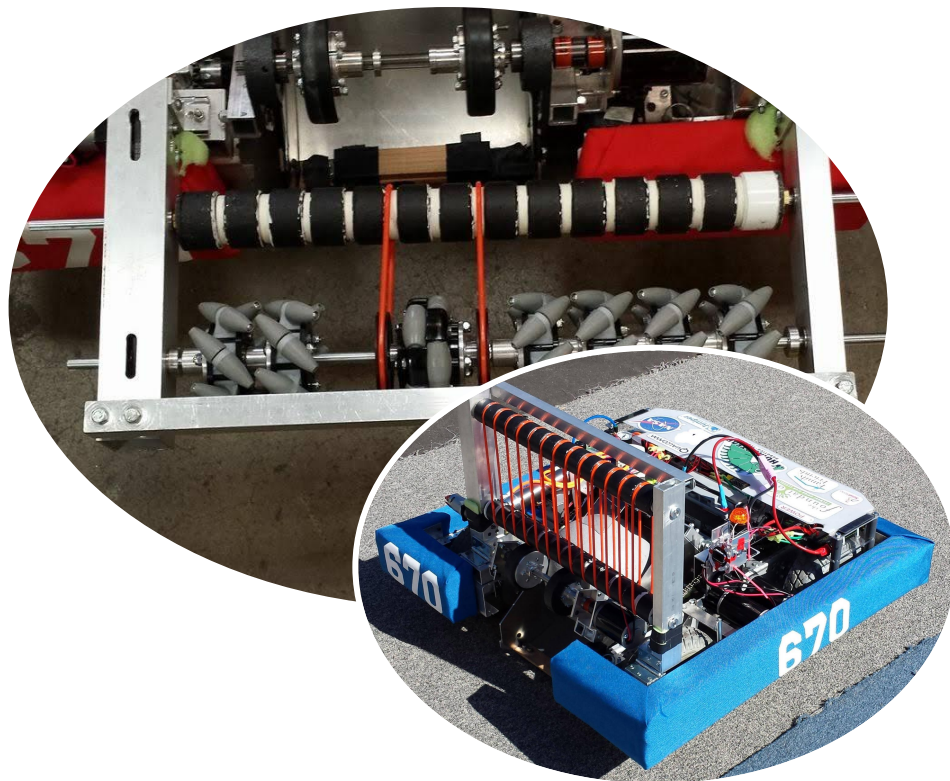
# 2015 FRC Robot for "Recycle Rush"

This robot was built the 2016 First Robotics Competition to collect and stack plastic totes and trash cans alongside other teams. It placed 4th out of 56 teams at the 2015 Silicon Valley Regional. Building this was my first experience with robotics and my first time making a extensive time-commitment heavy project with team.



# 2016 FRC Robot for "Stronghold"

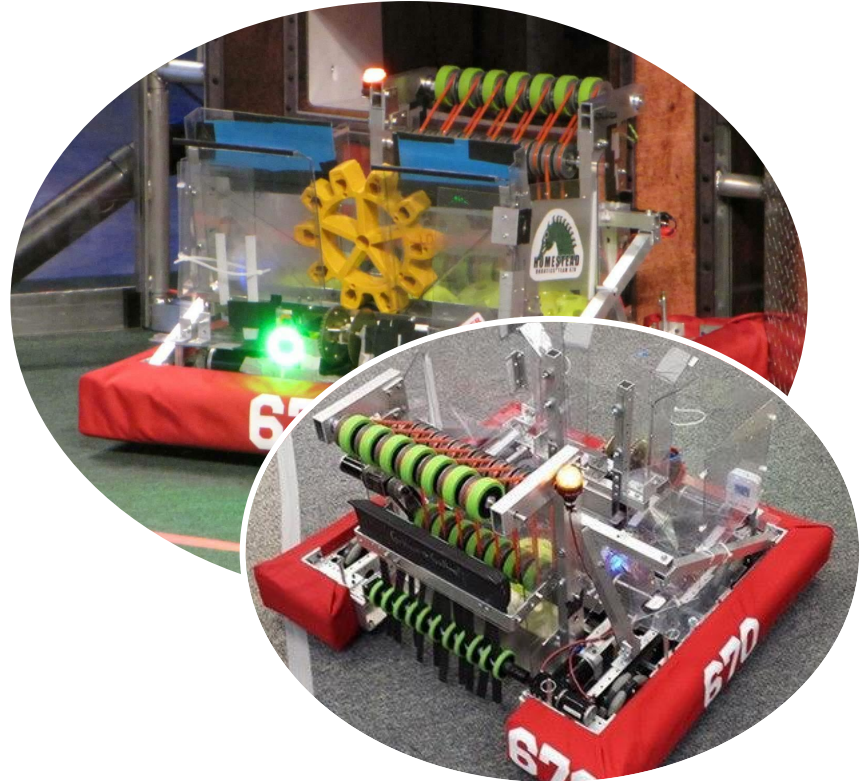
This robot was built for the 2016 First Robotics Competition to navigate an obstacle course while collecting and shooting dodgeballs. During this project, I led the fabrication of our robot with a partner. I learned about implementing designs into physical models when building this robot.



2017

# FRC Robot for "Streamworks"

This robot was built the 2016 First Robotics Competition to navigate an obstacle course while collecting and shooting dodgeballs. For this robot, I built the robot's intake mechanism as well as much of the robots body and modeled these systems in CAD. This was my first experience working in CAD and working to design a complex project with a team.



# 2018 FRC Robot for "PowerUp"

This robot was built for the 2017 First Robotics Competition to stack latex covered cubes on a moving platform and climb alongside other robots on a rung. This robot placed 7th in the 2018 Silicon Valley Regional out of 60 teams, 3rd at CalGames 2018 out of 38 teams, and was a regional finalist at the 2018 Utah regional. I built the climbing mechanism for our robot and ran the Mechanical Design team with a partner.



Video of my team's 2018 robot for  
FRC "Power-Up" during a test run.



# HP Labs

In 2017, I interned with the Immersive Experiences Lab (IXL) to study the applications of 3D printing and customization in clothing. Over the summer, I developed prototype customizable objects and conducted a qualitative study on user reactions. I also worked independently on a project exploring the idea of comfort/nonverbal communication through wearable technology.





2017

# Ideation and Case Studies

I conducted several case studies to investigate how individuals used existing clothing options/customization to express themselves.



# 2017 Low-Fidelity Prototypes

Created Mock-Ups of customizable  
printed clothing concepts based on case  
studies.



# 2017 High-Fidelity Prototypes

Refined Low-Fidelity models into custom printed buttons, watches, and jewelry used in a user study to measure participant reactions to printed and 3D printed customizable fashion.



3D Print Watch Covers



3D Print Pins and Studs



Fabric Print Watch Bands



3D Print Patterned Buttons



Photo Album Jewelry



Band-Aids, Eyebrows,  
Press-on Nails, and Makeup



Patterned Shoe Soles





**Project** 11 Participant User Study 8 Customizers 3 Non-Customizers

**1 Hour Per Participant** 1<sup>st</sup> Half: Discuss style & customization 2<sup>nd</sup> Half: Participants react to props modeling potential customized products.

**Process** Brainstorm forms of self-expression/customization | Low-fidelity models of printing applications in customization | Outline user study recruiting requirements | Create higher quality probes for user study | Finalize user study format and questions

## Products

**Buttons:** Everyone wears buttons. Their modularity, commonality, and diversity of appearance provide a good outlet for customization.



Early models focused on color & pattern.



Later buttons varied by shape.

### Books Charms:

Wearable personalized photobooks offer a more direct approach to customization that explores how sentimental value might be kept in mass-produced items.



Final Models



Initial Concept

### Watch Covers & Bands:

With phones and smart watches, traditional timepieces are becoming less functionally necessary. To compensate for this, customization and the addition of new components to watches, like covers and patterned bands, could increase their aesthetic value.



Initial Concept



CAD models



Watch Cover illuminates to show time.



Watchband probe with patterned fabric.

## Participants



*"Watches, I really like the watches; you got to do something other than a watch its got to be a fashion accessory."* -Ronnie R.



*"Buttons - everyone should have swappable buttons"* -Rochelle U.



*"I am trying to adjust to a more neutral American style. I feel really awkward in my clothing. It's an important part of my cultural identity, who I am"* -Nehel K.



*"With dressing I'm able to express myself without saying a word."* -Marinda T.

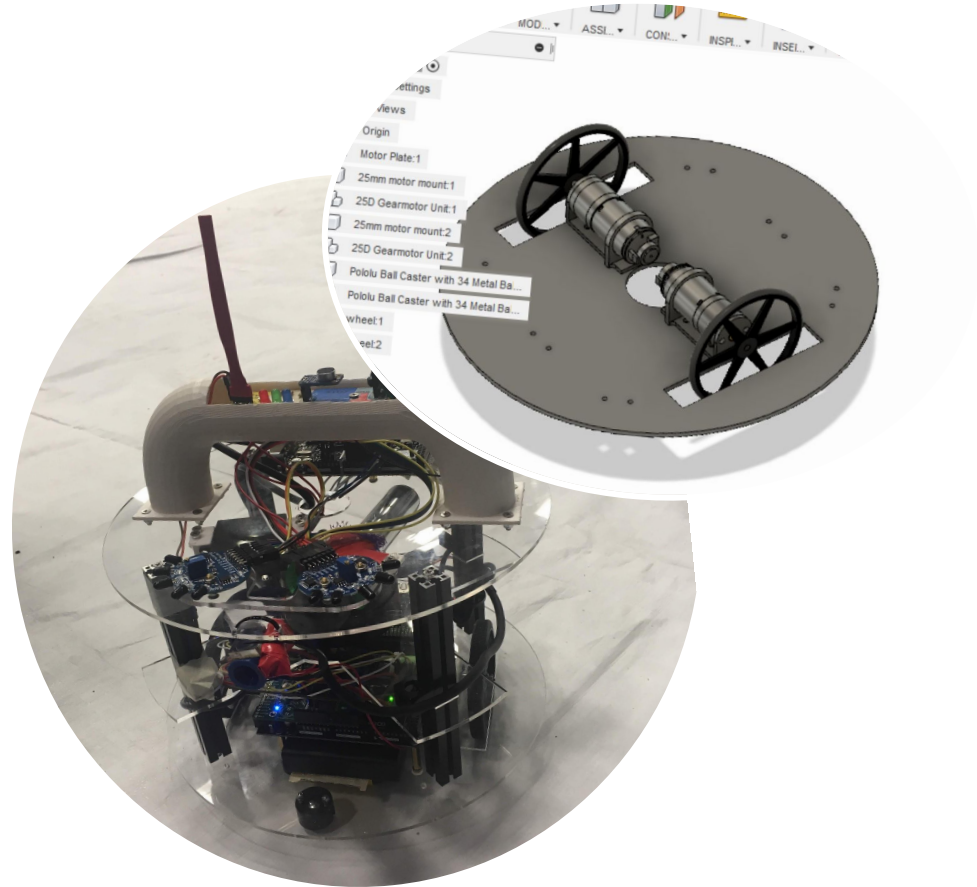
A group of approximately 25 students, mostly young men, are posed around a large, square, aluminum-framed arena. The arena has a tan floor and is surrounded by a clear plastic safety barrier. Inside the arena, there are several small, custom-built robots. One robot in the center has a sign that says "BAFF". The students are dressed in winter clothing, including jackets and hoodies. The background shows a dark outdoor setting with some trees and buildings.

# Other Robotics

2018–Present

# 2019 Trinity Firefighting

In Winter 2019, I worked with a partner to create the mechanical design aspects of a robot that could track and blow out flames for the Trinity Fire Fighting Robotics Competition.

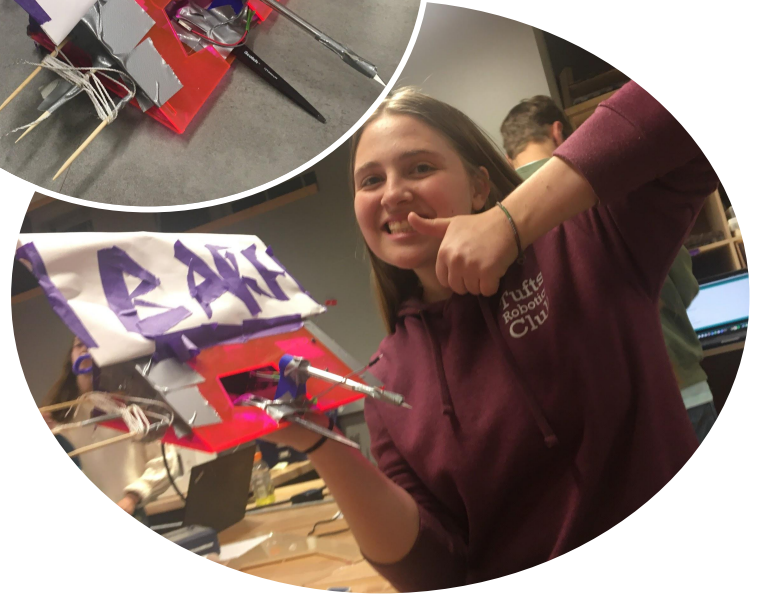




Video of Trinity robot tracking  
candle flame.

# 2019 Battle Bot

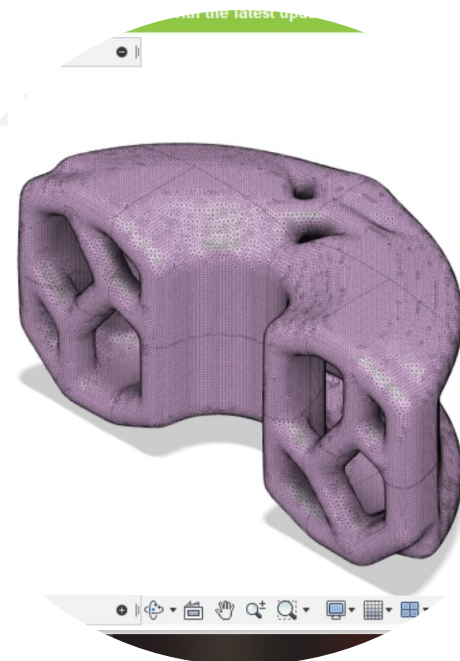
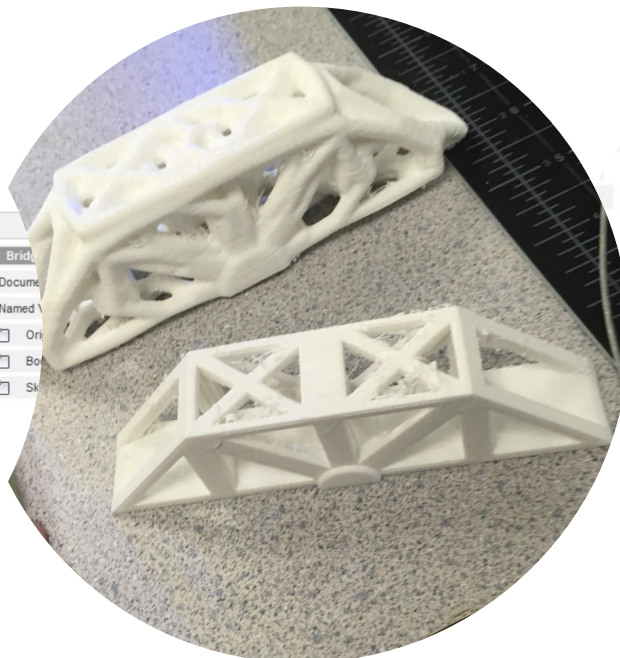
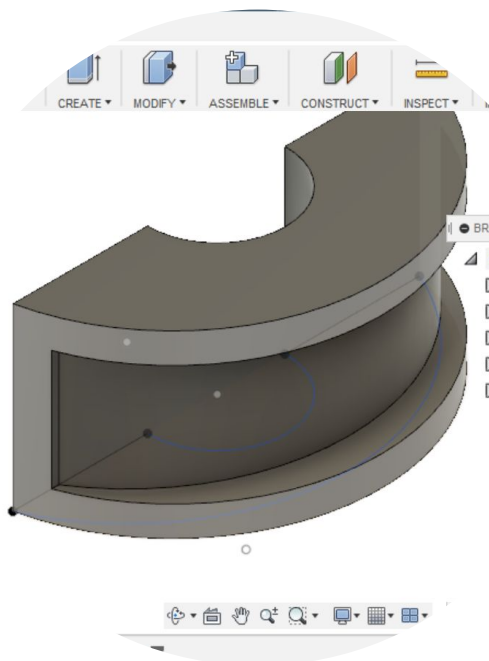
As a short project this fall, I worked with a team of four to create a battlebot from scratch to fight robots built by other students at Tufts University. I CADed, 3D printed, laser cut, and assembled the mechanical aspects of this robot.



A 3D rendered robot character made of a metal can with a face, standing in a room with comic book and newspaper walls. The robot has large green eyes, a small mouth, and a cylindrical body. It is holding a wrench in its right hand. The background features a wall with comic book panels, some of which show Scooby-Doo and the text "THIS IS FINE." There are also newspaper clippings on the wall, including one titled "BIG TACOMA BRIDGE FALLS INTO SOUND".

# Recent CAD

2018-Present



# 2018 Generative Bridges

In Fall 2018, I spent some time exploring the strength applications of generative design in truss and arched bridges using AutoDesk Fusion and MeshMixer.

# 2019 Tufts AR

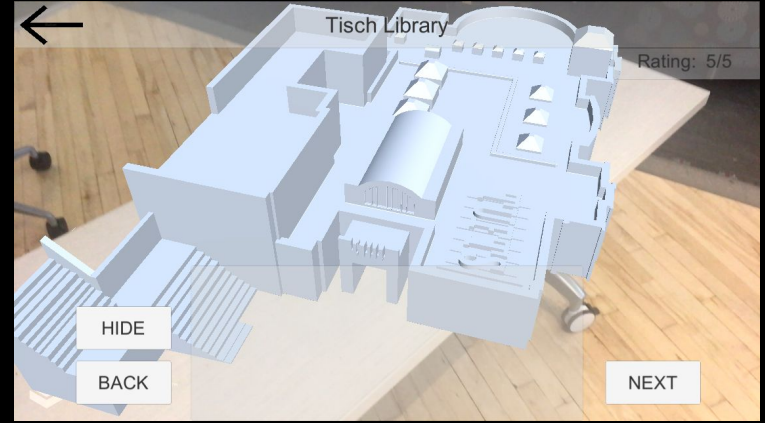
I built an Augmented Reality (AR) Unity app mapping the Tufts University campus over 24 hours at Tufts Polyhacks 2019 with a 5 person team. Users could leave reviews to appear alongside CAD building models in the app. I created 3D building models in Autodesk Fusion and built the website in HTML/CSS. This project won the Trip Advisor award for best use of Travel API.

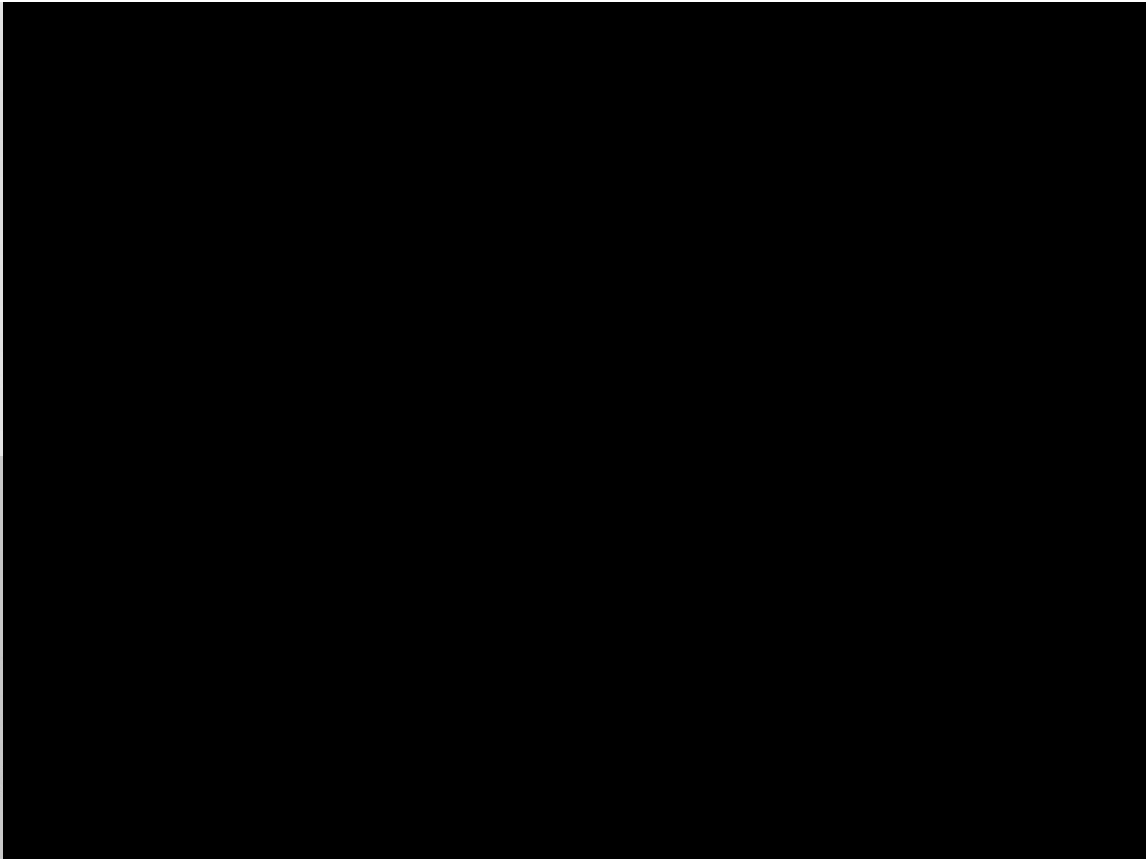
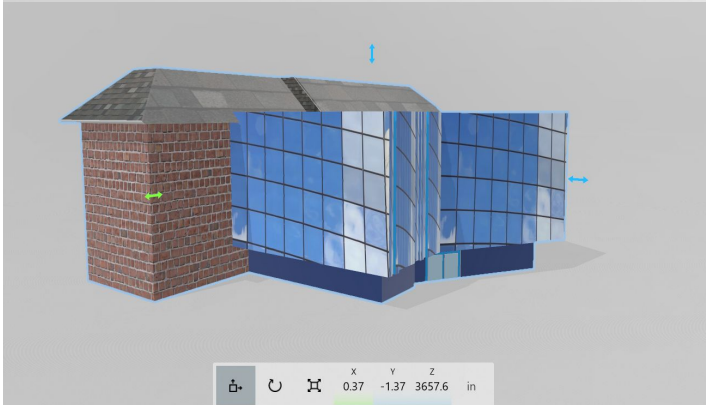
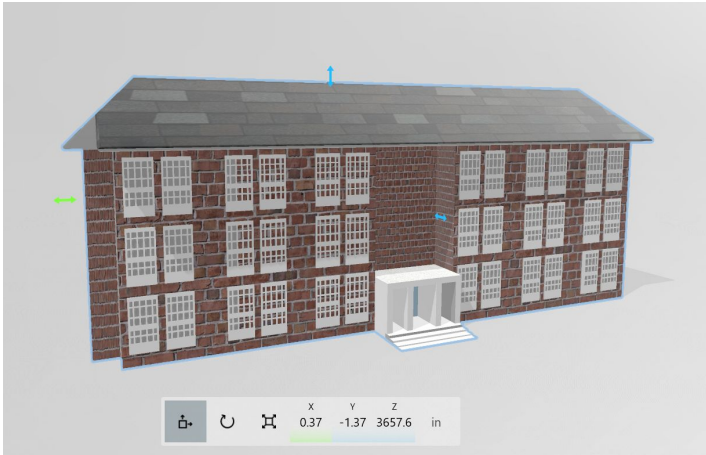
**Project Presentation:** <https://bit.ly/393Y2rh>





Users could pick from a variety of locations on the Tufts campus to view an AR model of a Tufts building or characteristic location.





2019

3DS Max Renderings  
and Animation



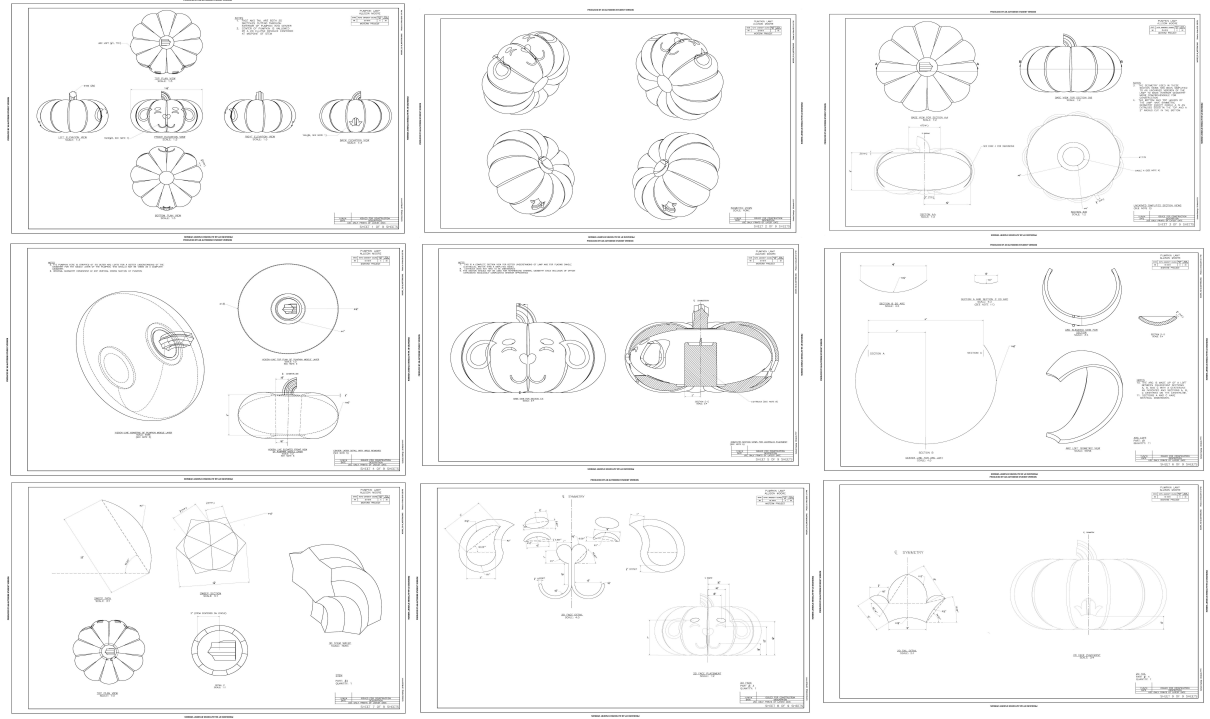


Animation created and rendered in 3Ds Max using a Biped skeleton for character movement. All models for this animation were built in Inventor.



# 2019 Pumpkin Lamp





Complete set of engineering drawings for pumpkin lamp.

# Johnny No Graves & The Cash Cowbois

A Johnny Cash Cover Band

Select Genre:

# WEB PROGRAMMING

-----*Setlist*-----  
2019-Present

**(Ghost) Riders in the Sky**

-Johnny Cash-

-Rockabilly--Rock--Country--Classic Country--Pop-

1979

**If I Were a Carpenter**

-Johnny Cash--June Carter Cash--Tim Hardin-

-Country-

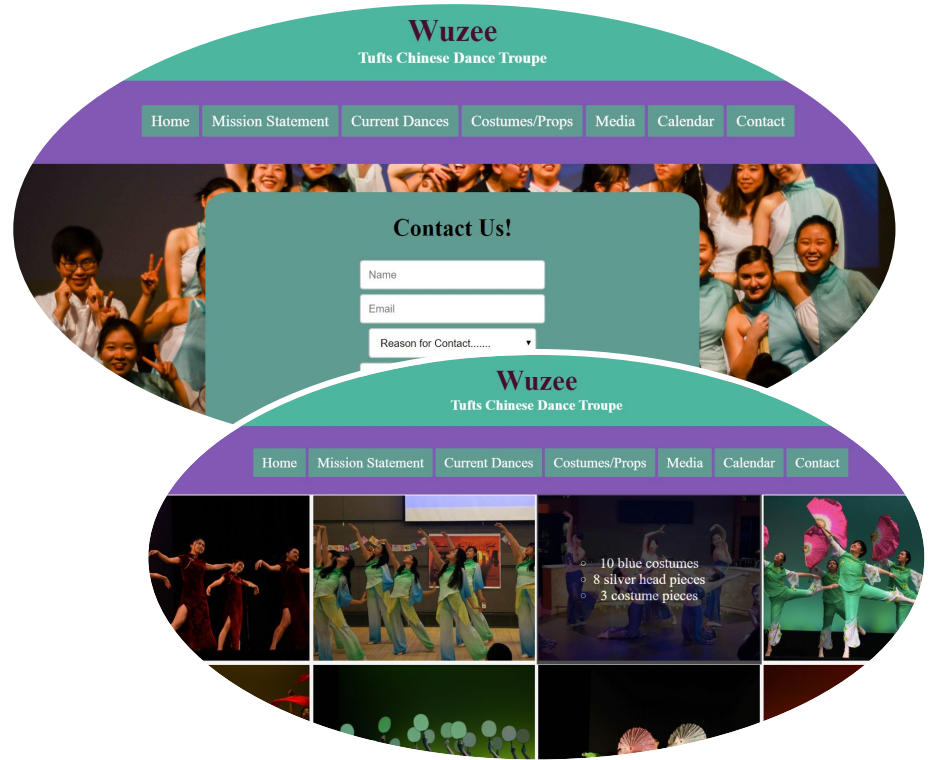
1968

**A Boy Named Sue**

# 2019 Wuzee Website

Built updated website for Chinese Fusion Dance group at my university with a team of three others over the course of two weeks.

<https://rlee5674.github.io/TuftsWuzee/media.html>

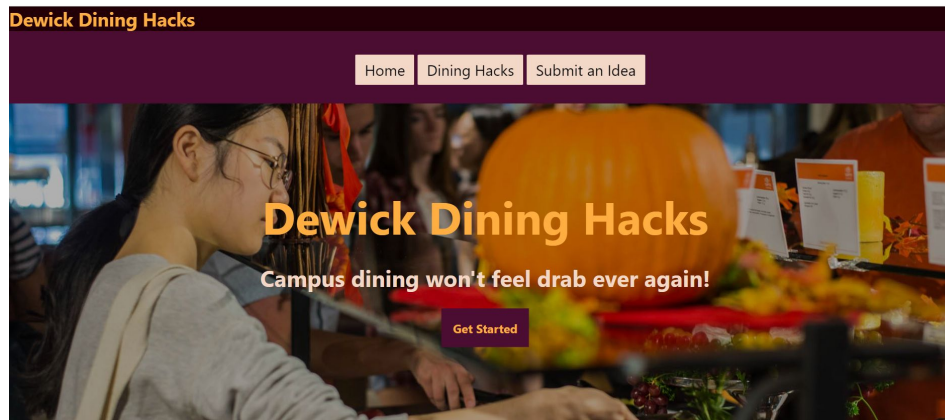


# 2019

## Tufts Dining Hacks

Built front and backend of website for students to submit on-campus dining alternatives over three weeks with a team of 3 people. Used MongoDB, Git, CSS, JS, HTML, and Heroku.

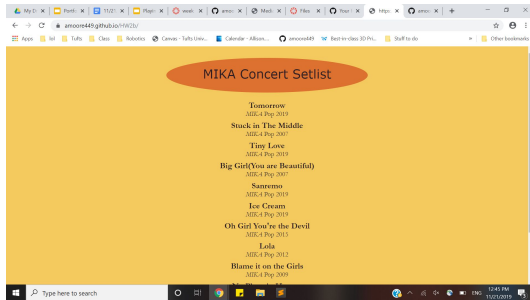
<https://rlee5674.github.io/Dining/>



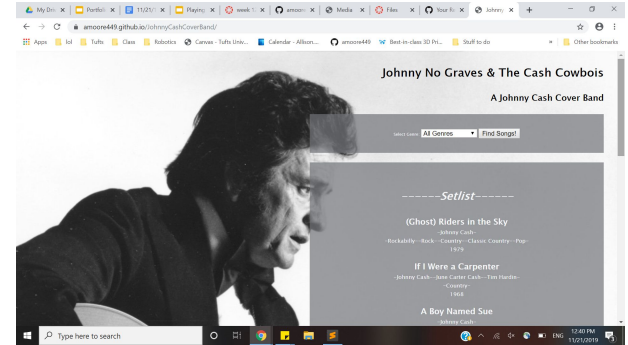
# Web Design



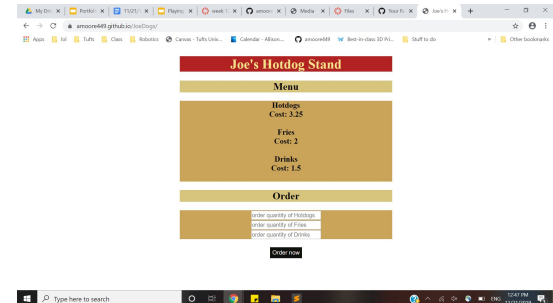
Mock business website to practice HTML/CSS,  
<https://amooore449.github.io/DJ-Roomba/>



One-page website for practice with XML.  
<https://amooore449.github.io/HW2b/>

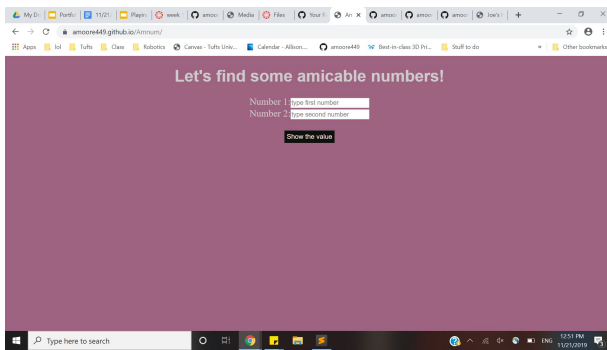


Website for Johnny Cash Cover band using JSON parsing  
<https://amooore449.github.io/JohnnyCashCoverBand/>

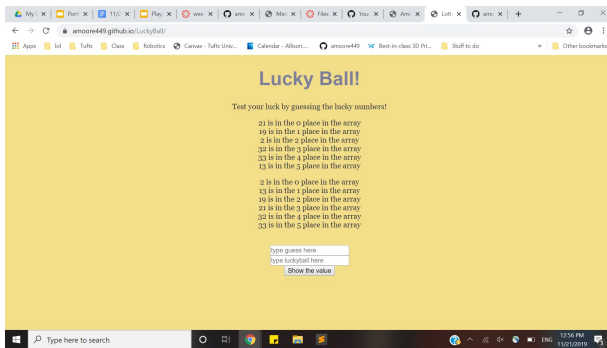


One-page website for practice with Javascript.  
<https://amooore449.github.io/JoeDogs/>

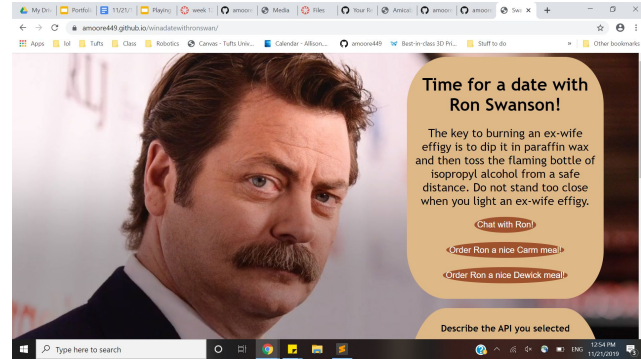
# Web Design



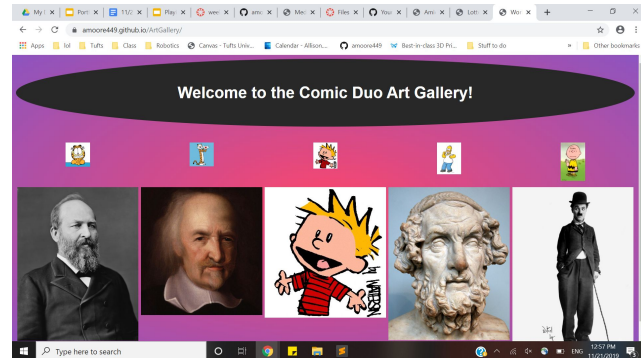
One-page website for practice with Javascript.  
<https://amoore449.github.io/Amnum/>



One-page website for practice with Javascript.  
<https://amoore449.github.io/LuckyBall/>



One-page website for practice with API use.  
<https://amoore449.github.io/winadatewithronswan/>



One-page website for practice with JQuery..  
<https://amoore449.github.io/ArtGallery/>



A photograph of three women standing together indoors, likely at a school event. The woman on the left is wearing a black wide-brimmed hat and a blue patterned cardigan. The woman in the middle is wearing a yellow raincoat and a white paper hat decorated with streamers and stars. The woman on the right is wearing a pink and white patterned hoodie. All three are smiling. A large white text overlay is centered over the image.

# ENGINEERING EDUCATION

When not building my own projects, I love working with kids to spread interest in STEM and help students feel confident in trying (and failing at) their own ideas.

Allison &  
Jared

VISITOR  
10-31-2018 9:28 AM  
Allison Moore  
Brooks Elementary

VISITOR  
Brooks Elementary

# 2018-Present Tufts STOMP

Tufts Student Teacher Outreach Mentorship Program

I design and teach engineering curriculum for elementary school students through the Tufts STOMP program. I have worked in 5 classrooms over one and a half years. Curriculum can span from electricity to coding to found materials building to 3D Printing.



# 2019 Camp Galileo

Over the summer I worked as a Team Leader teaching growth mindset project thinking through Camp Galileo. I worked from around 7:30am to 6pm leading teams of 15-20 campers through art, science, and outdoors activities.

