

# Prototype Prosthetic Hand a.k.a. The Luke Skywalker Project

Caileigh Bates, Diana Rekkas, Tianbo Tang, Maximilian Van der Wee

## The Project

The goal of this project was to create robotic hand, but not just for show. Our group wanted to create a prototype that was also applicable and could be taken further to be an early design for a prosthetic. To make this all come together, these prototypes use Electromyographic sensors (EMG) to detect the electric signals of muscles and convert them to voltage for the servos that control the fingers.

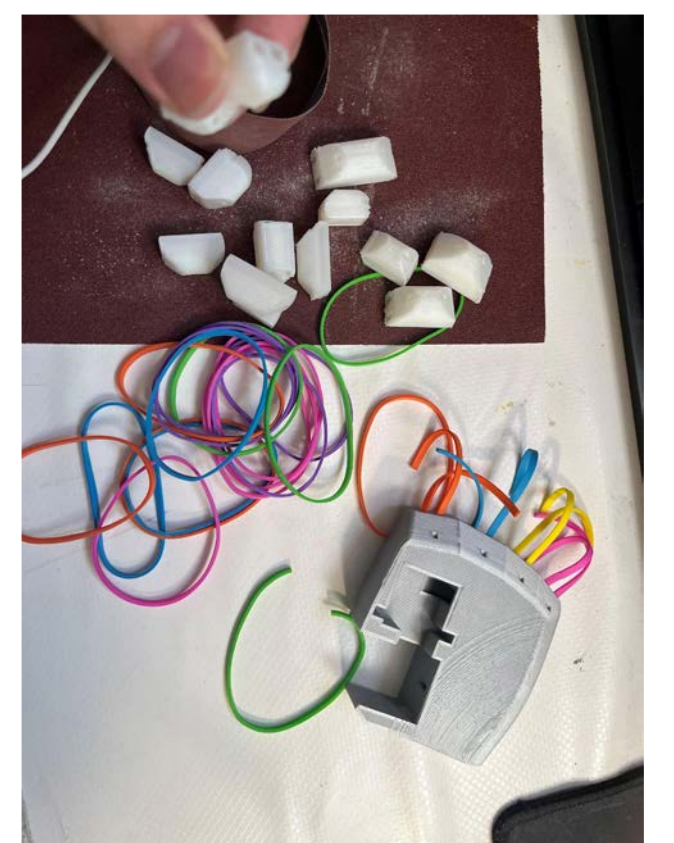
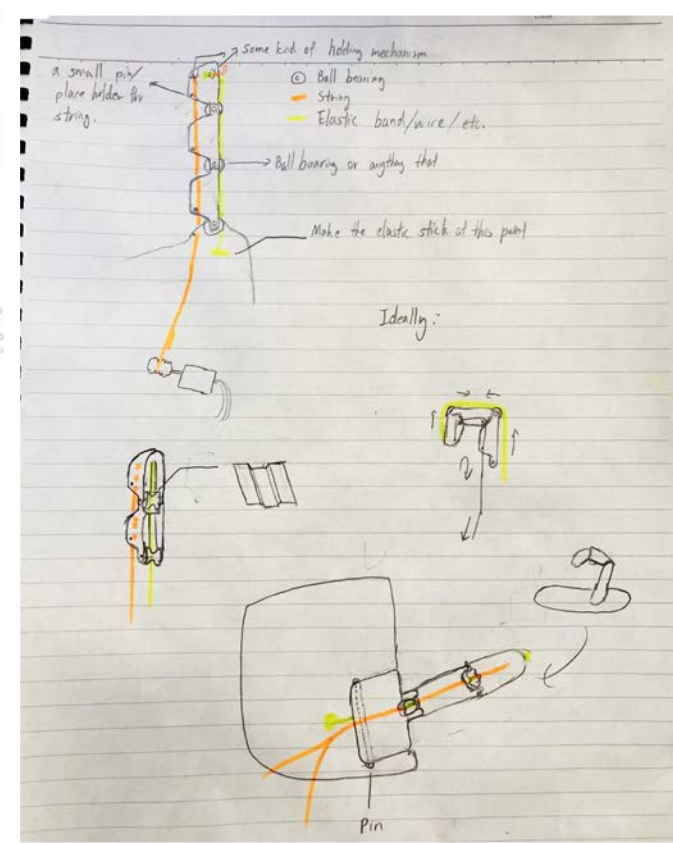
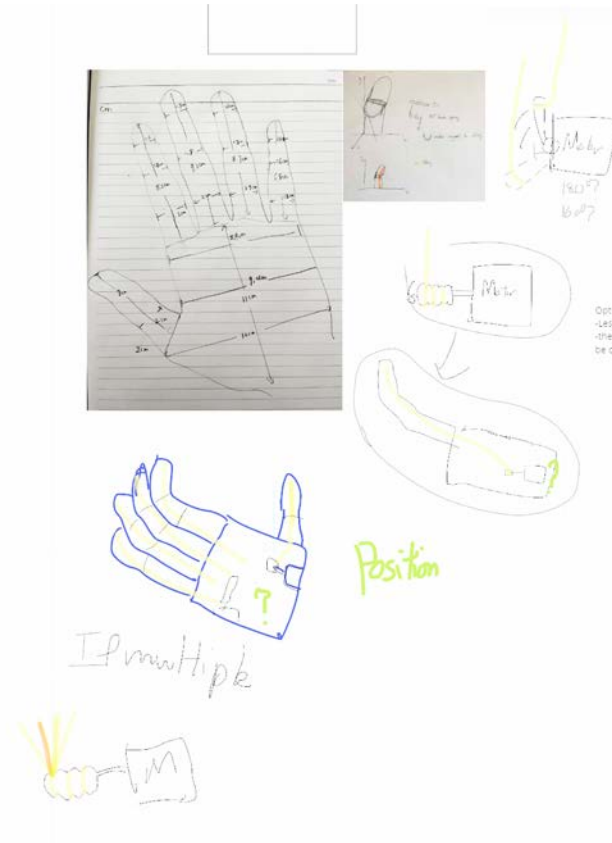
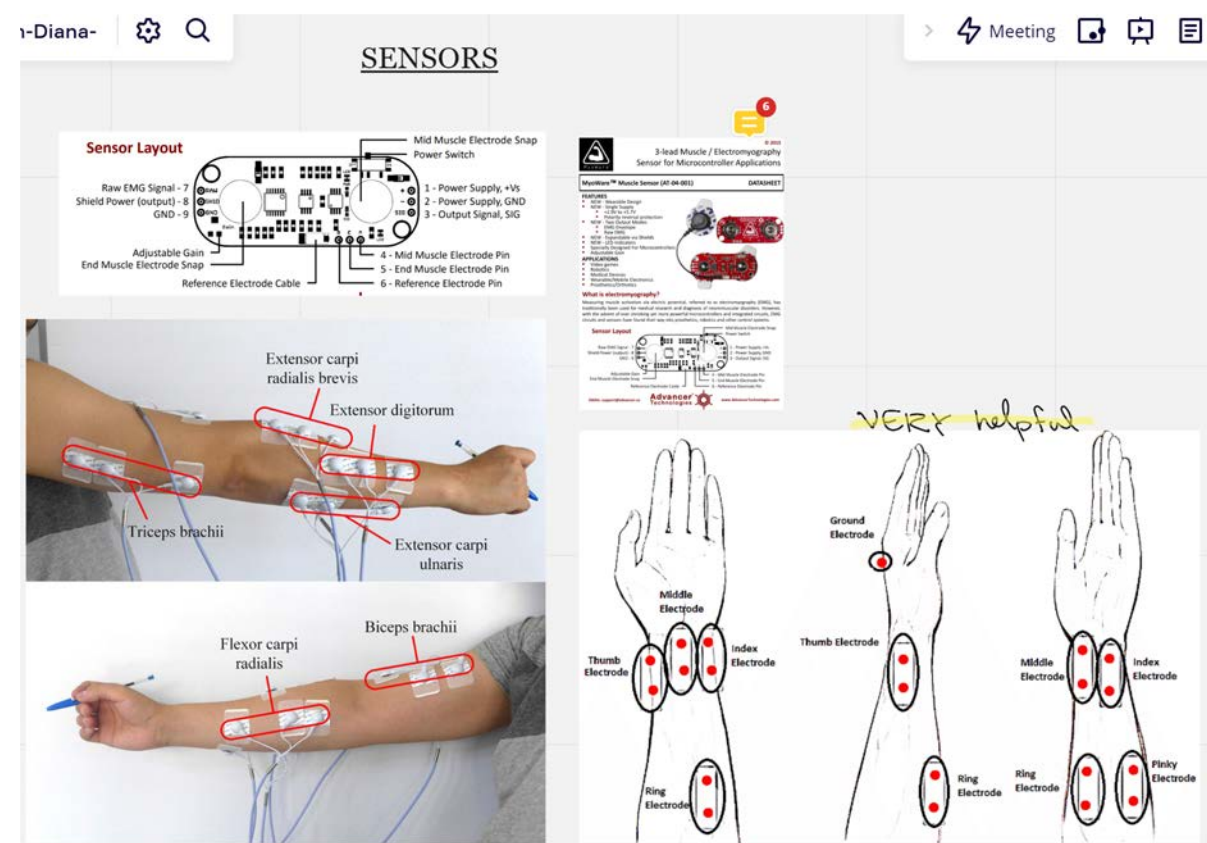


## The Brainstorming Process

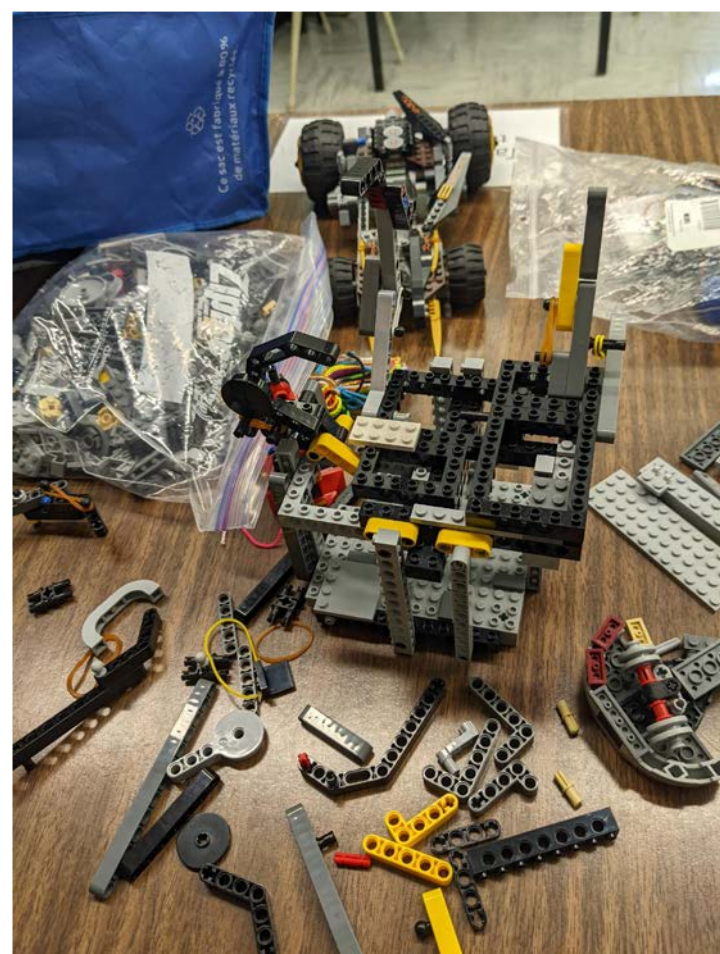
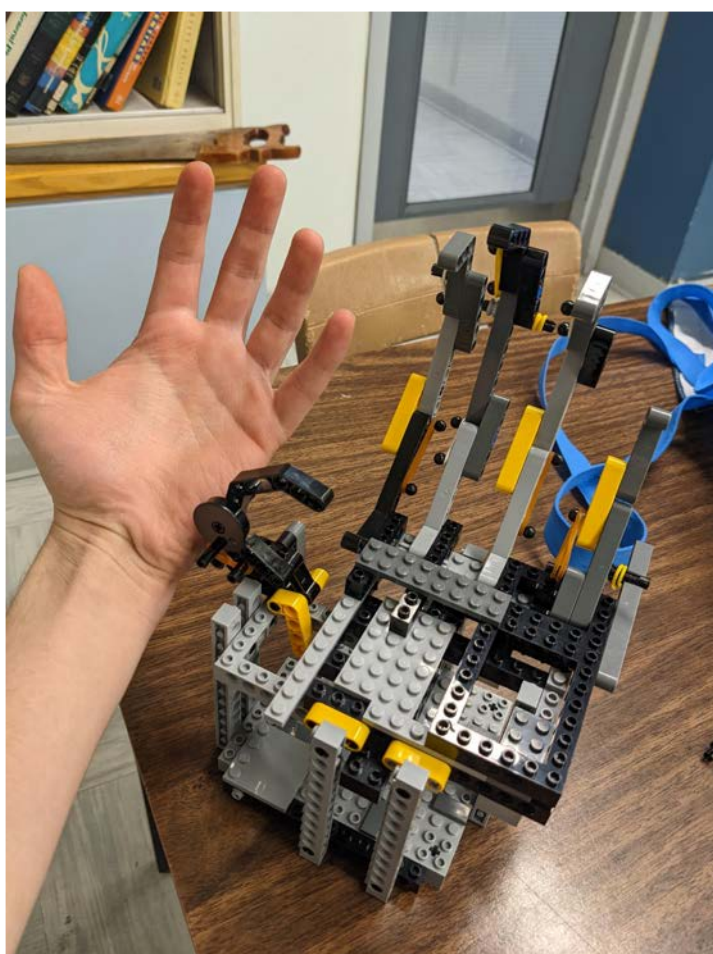
- Miro Board allowed us to document our thought process and have it all visualized.
- Research was done on the different muscle groups and how that determined finger movement.
- Preliminary technical drawings were done to visualize the mechanics of what we wanted to build.

## Prototyping + EMG

- The design of the hand was done by prototyping with LEGO. LEGO provides great technic pieces to build structures with pin supports.
- 3D Designs were also researched as a more advanced prototype to use.
- EMG sensors were chosen to detect the electricity in the muscle groups. This moved the hand!



## LEGO Prototype



## 3D Printed Hand

