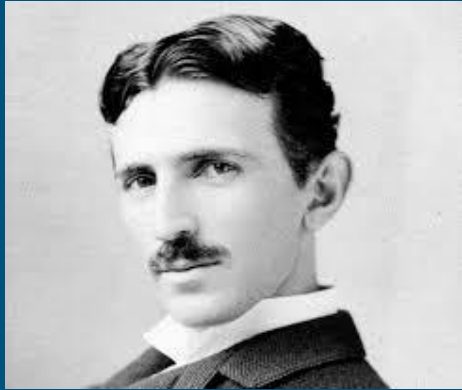


What has STEM Taught Me? Girls Belong in It.

Julia Khabinskiy
Manalapan High School '27
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When you think of an engineer, who do you picture?



Nikola Tesla



Alexander Graham Bell



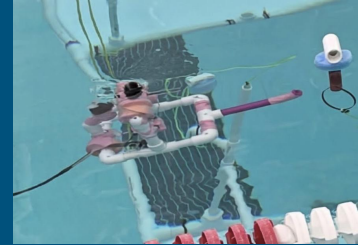
Elon Musk

Gladys West

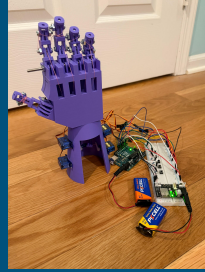


What got me into robotics?

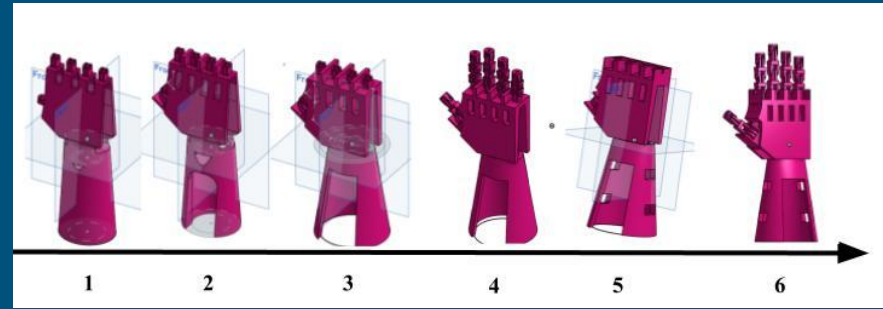
- My parents
 - Encouraged me to take coding classes (Scratch->Python)
 - Pushed me to apply for the Science and Engineering Magnet Program at my high school
 - Bought me a 3D printer
- S&E
 - Saw how cool the robots in robotics were and joined
 - Loved working on CAD and building the robot for our robotics team
 - Realized I had enough skills to build my own project, a robotic hand
 - Became captain of one of my school's SeaPerch underwater robotics team



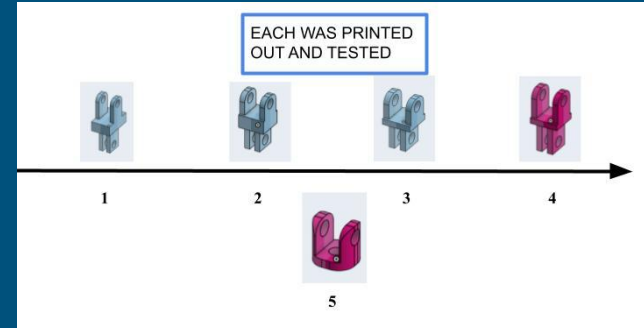
My robotic hand



1. Build a cost-effective robotic hand using buttons to move each finger (5 buttons for 5 fingers)
2. Build a cost-effective robotic hand using an ECG with electrodes on my arm to move each finger
3. Build a cost-effective robotic hand using flex sensors to move each finger (5 flex sensors for 5 fingers)

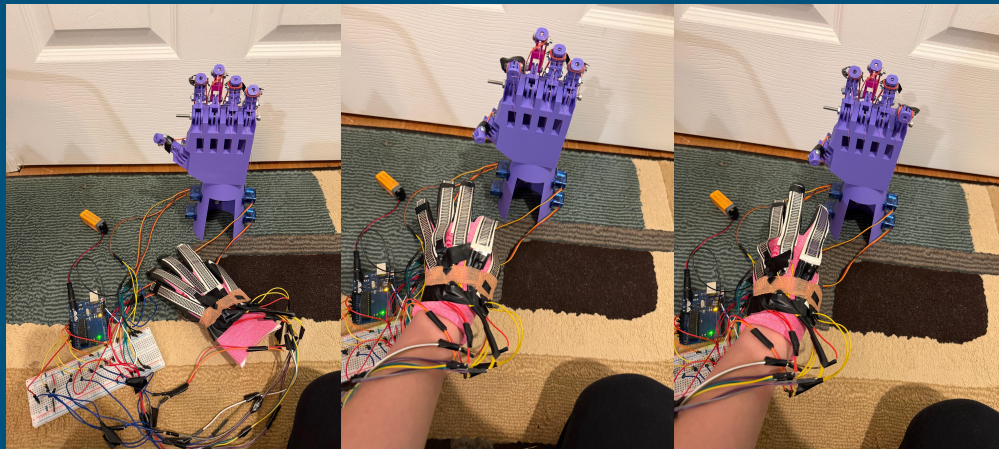


Hand Progression- CAD



Phalanges (Finger Bones) Progression- CAD

End Goal: Build a full body exoskeleton (right now I am working on an exoskeleton for my hand and arm that mirrors the motions of the other arm)



What did this teach
me?

- 1) Failure is a part of the process.**
- 2) Girls belong in Engineering.**