Open-Source Robotic Hand-Project Proposal

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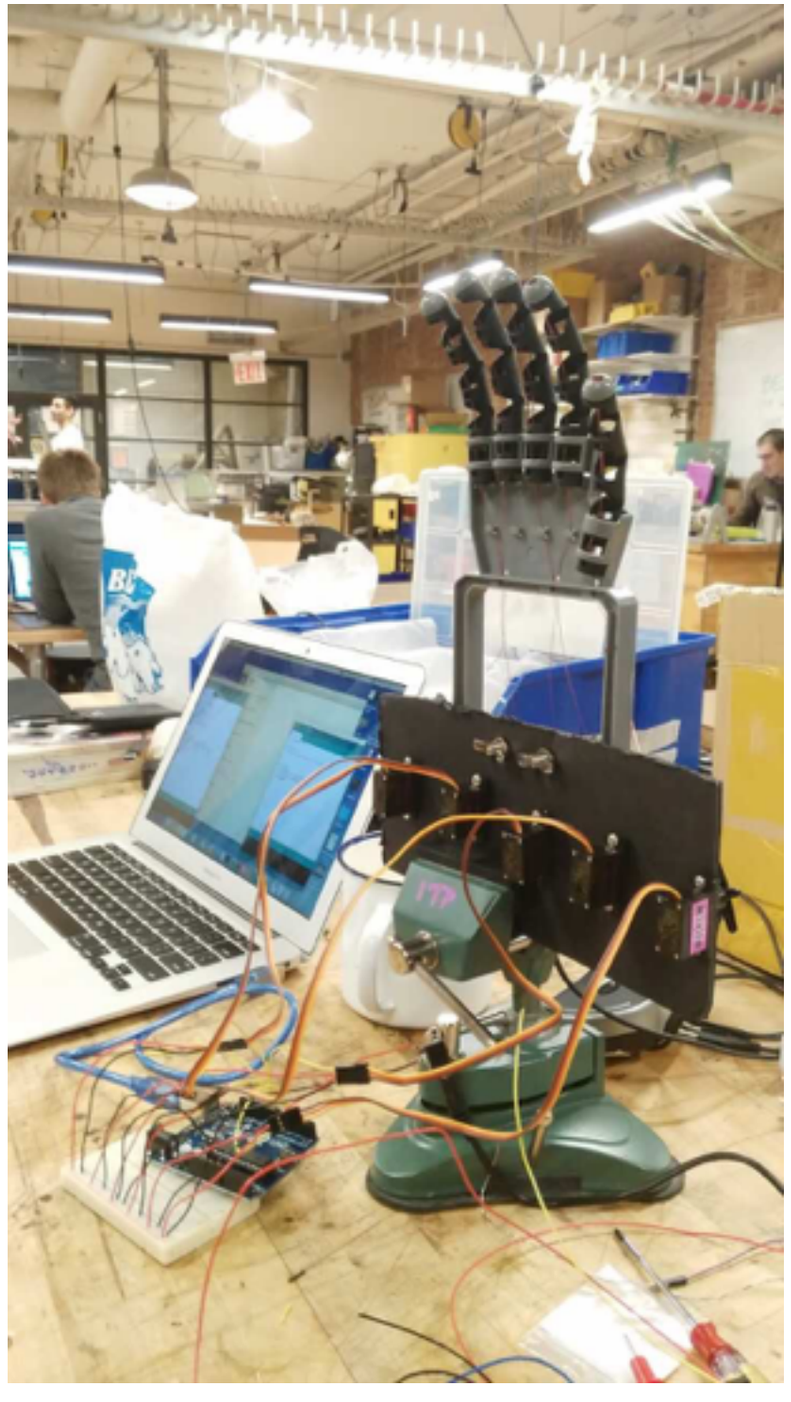
What we have already done

A robot hand which can perform like human gesture, under the control of computer software

Video-Links:
https://youtu.be/F1DepAVbKOo



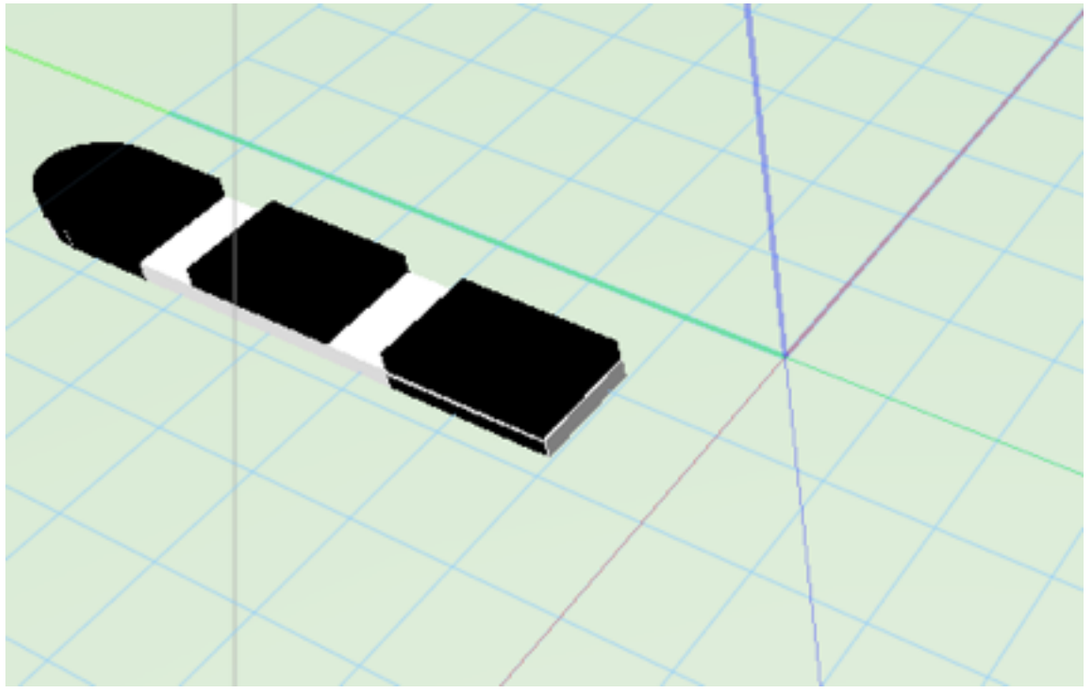
What I want do next

- Design the hand with Vectorworks and Rhinos, make it possible to make with Laser-Cut and 3D printing.

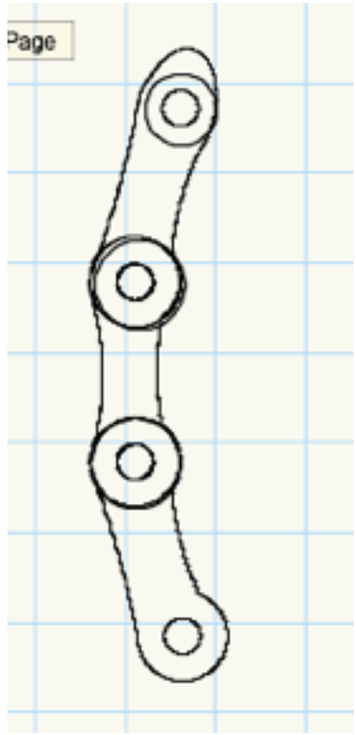
- Design the Electric-Control part with Arduino, and use Servos to control the movement of fingers, palms and the rotation of the hands

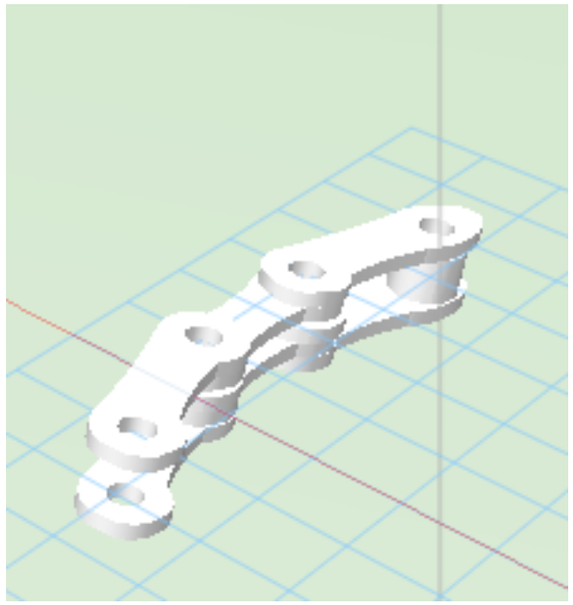
- Connect the Hands with Brain-Computer Interface, and design a software with pattern recognition by the User

Finger-Design



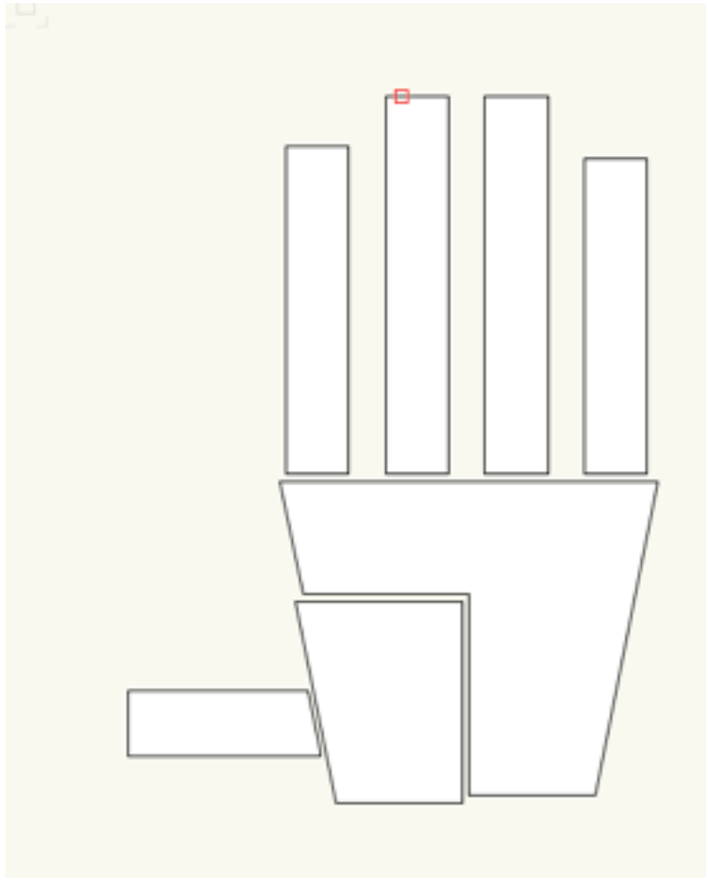
Design 1.Based on elatistic material, bend in the section part and will recover by the force of the material itself



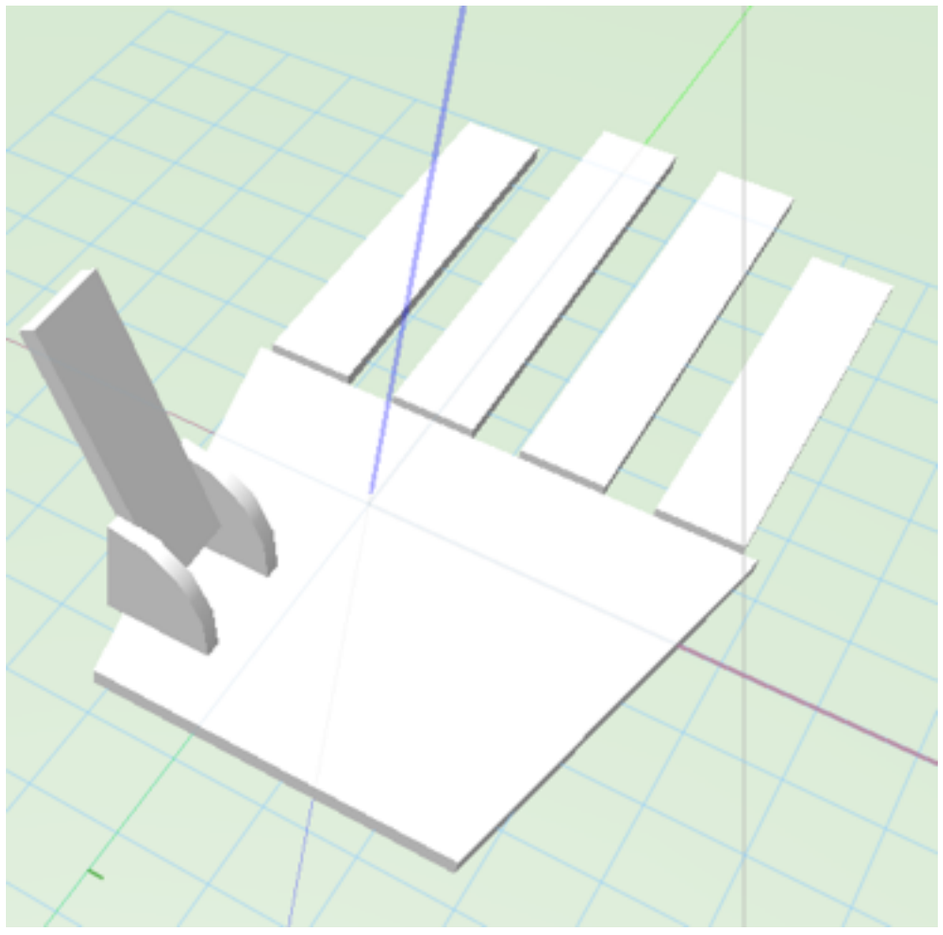


Design 2. Based on the Chain-Structure, with the limitation of the moving direction such that make it like fingers, use double direction drag by servo to control its moving

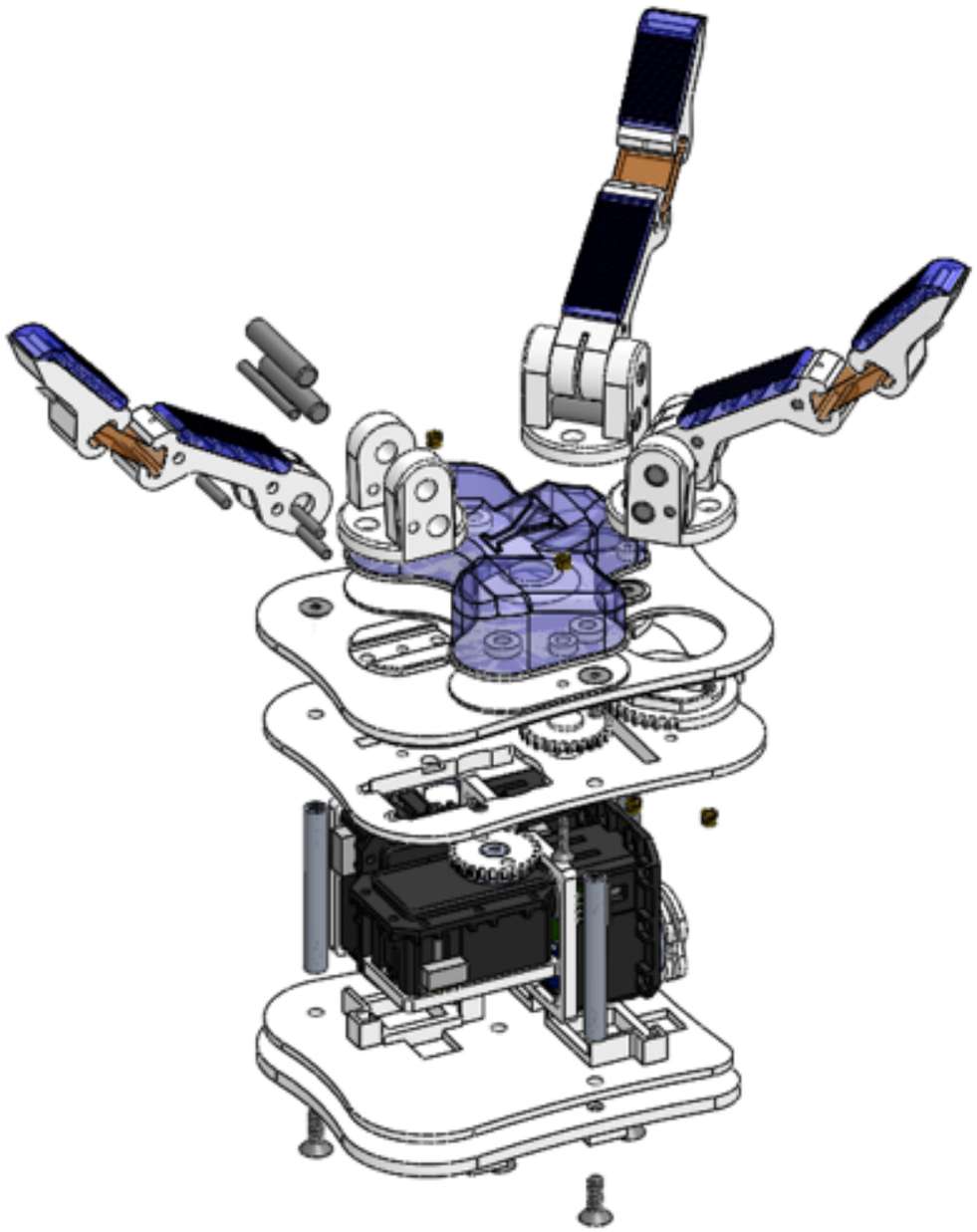
Palm-Design



6-degree of freedom model



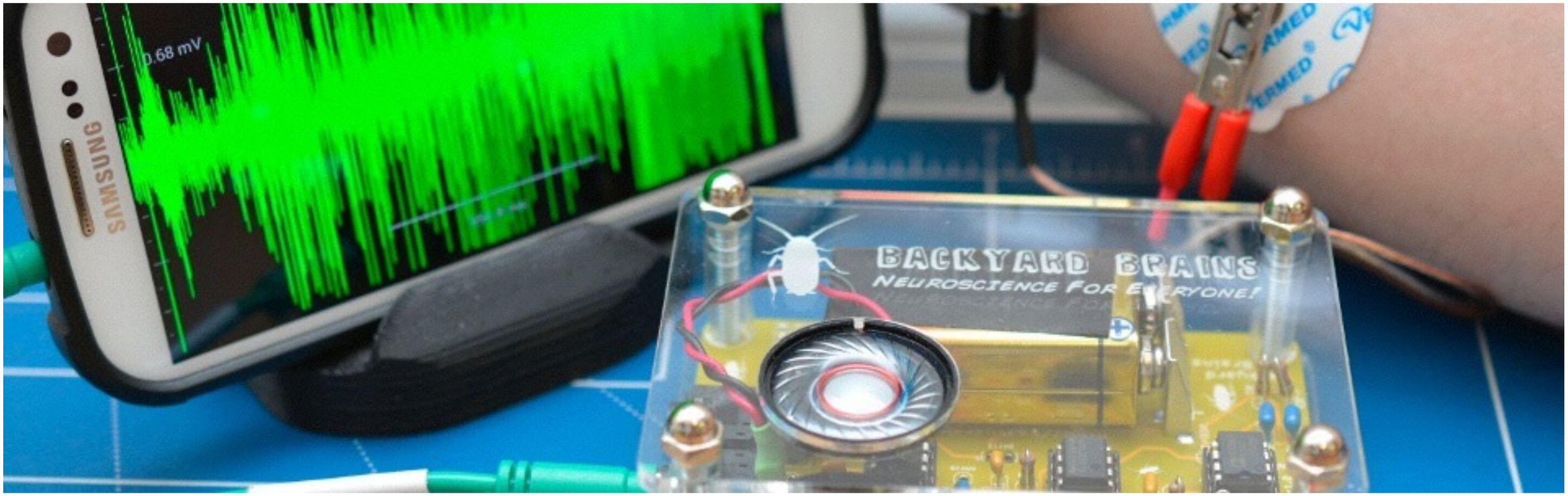
5-degree of freedom model



Hand-base design

Plan to follow the design of Yale Open Hand http://www.eng.yale.edu/grablab/openhand/

Brain Computer Interface



An Open-source company called Backyard Brains have a good system of BCI products, we want to analysis this first.

https://backyardbrains.com/