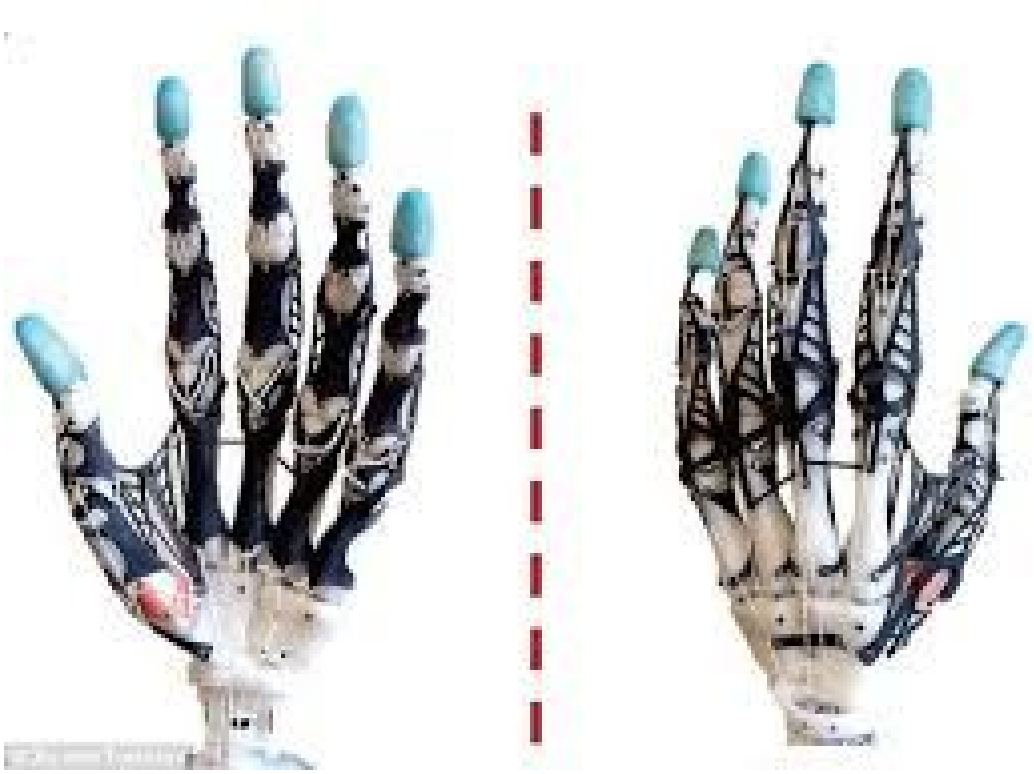
Overall, nice idea :) but will need proper commitment and lots of work from your side cause it is quite ambitious



Mirroring Robotic Hand

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Overview

Using 2 cameras we will scan the 3D image of a hand (image processing) .

Then we will make a mechanical hand (19 degrees of freedom, 1 for all finger joints, and 3 for the wrist) which will move exactly like the person's hand.

For incorporating 19 degrees of freedom in your mechanical hand, you will need to spend considerable time reading and testing on Image Processing because your project will heavily rely on Image Processing

COMPONENTS :

20 micro servo motors - 100rs each - 2000rs

Microcontroller (arduino / raspberry pi) - unknown

Don't go for Arduino Mega (Uno anyways cannot support more than 12 servos). Opt for Raspberry pi

If you ll are lucky enough, you may find one from a prev yr project.

2 usb cameras - 1000rs

Mechanical model to be 3D printed/ CNC router -free/ 500rs

COST APPROXIMATION:

3500rs without microcontroller

7000rs including microcontroller and other small components

TIMELINE :

CAD for mech model : 1week

Getting model made (with servos attached) : 1 week

Connecting microcontroller and testing without image processing : 1 week

Coding for Image processing and integrating with Mechanical hand : 4 weeks (runs parallel)

Total: about 40 days

Timeline seems fine :) though integrating with the microcontroller will take significant time, so tackle the IP stuff also simultaneously to the mechanical stuff