

Why be perfect when we can be better?

Reimagining the man-machine connection



VULCAN AUGMETICS

Evolution, Engineered

About Us



- HCM based start up
- 2 cofounders, Rafael (CEO), Akshay (CTO)
- Founded Aug/Sept 2017
- Aiming to make prosthetics freemium
- Aiming to make amputees superior to non-amputees when equipped



The awesomeness of you



- The human hand is amazing
- The human hand contains:
 - 27 bones
 - 29 joints
 - At least 123 named ligaments
- Your hands are more sensitive than your eyes



- We cannot make a perfect copy of the human hand, even a close copy is difficult and expensive

BUT

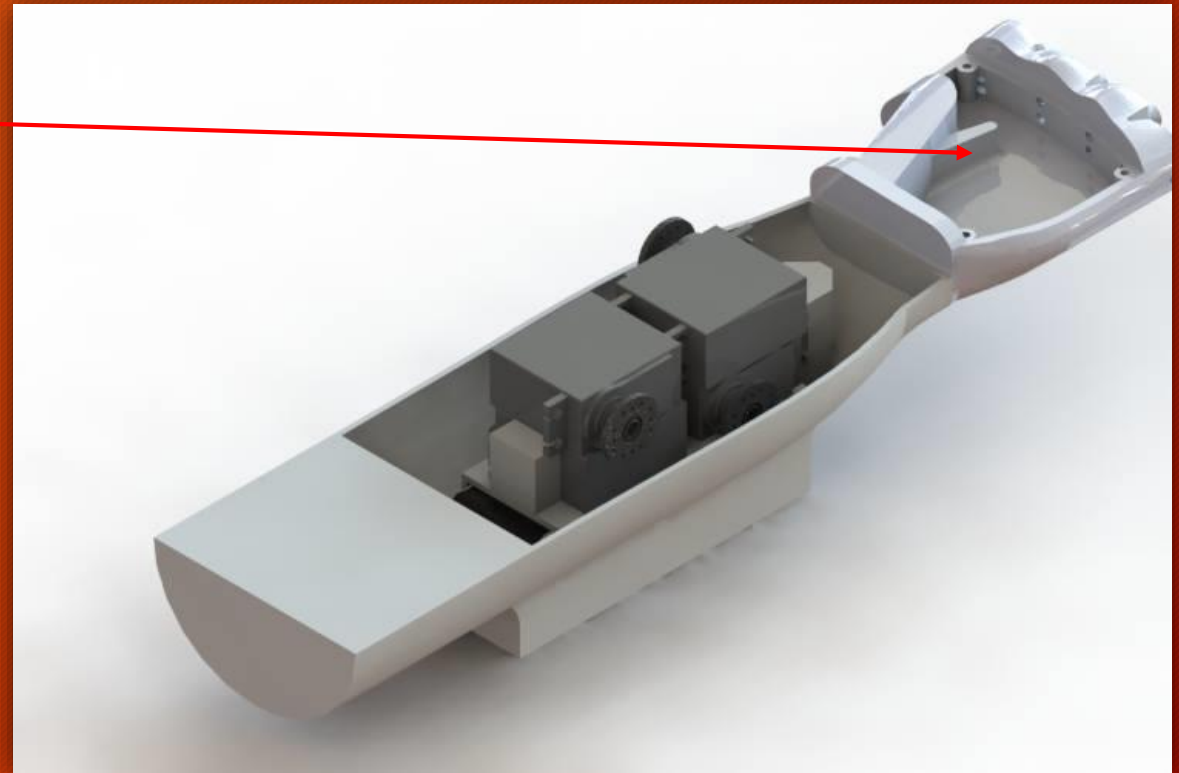
- Your hand cannot cut glass, your hand cannot take high temperatures, your hand cannot illuminate a room. Tools can.
- Your hand cannot adapt, change and evolve to new tasks.
- A prosthetic *can*. A prosthetic can AUGMENT your abilities and make you better

Robocop - Don't fix, upgrade



Modular designs

- Hand with modular compartments
- Separate modules for each activity the user wants



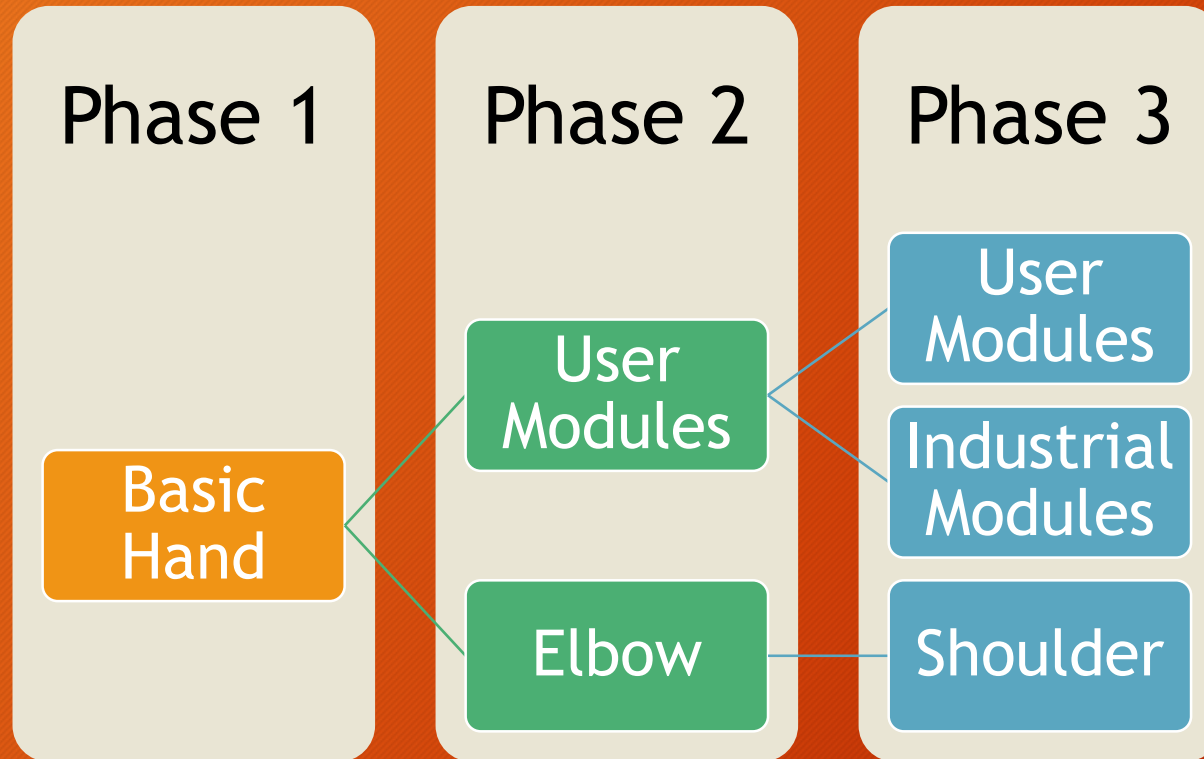
Upgrading People



- Open source basic design
- Modular accessories and upgrades
- Universal visual mods



Order of Progress



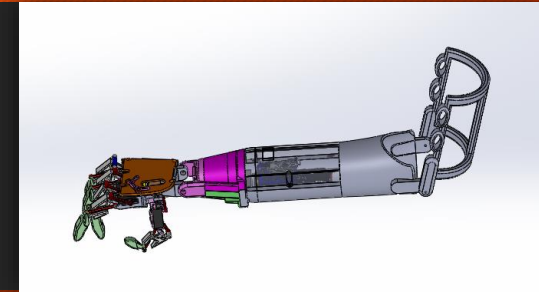
Development - Mk 1 & 2 Hand

- Modified Inmoov hand
- 6 Servos in forearm
- External Arduino board and power



- Mk 2
- 3 Modules
 - Palm module
 - Thumb module
 - Top Module

Current Products - Mk 3.1 Hand

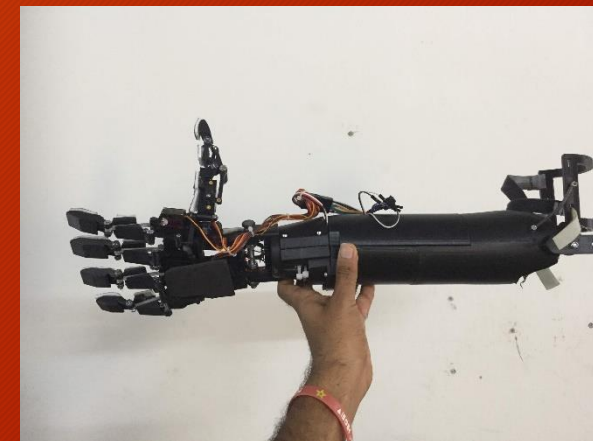


- Functions:
 - Close Grip
 - Rotate

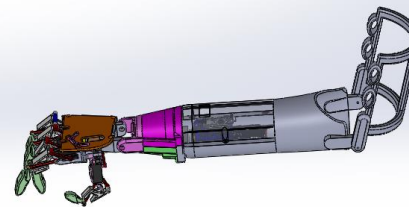
- Modules

- Top
- Bottom
- Arm

- Mouse, plectrum, flat surface holder, light, etc

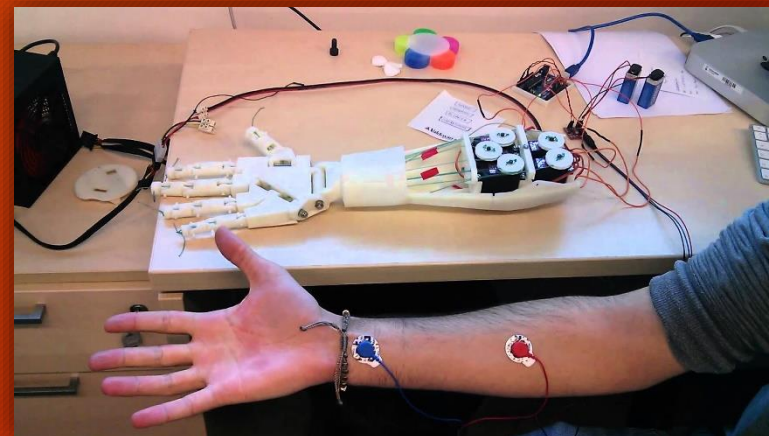
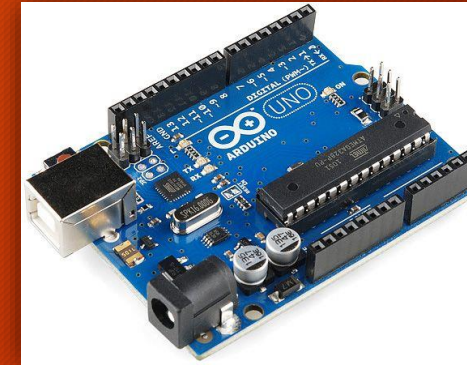


Mk 3 Hand



Arduino

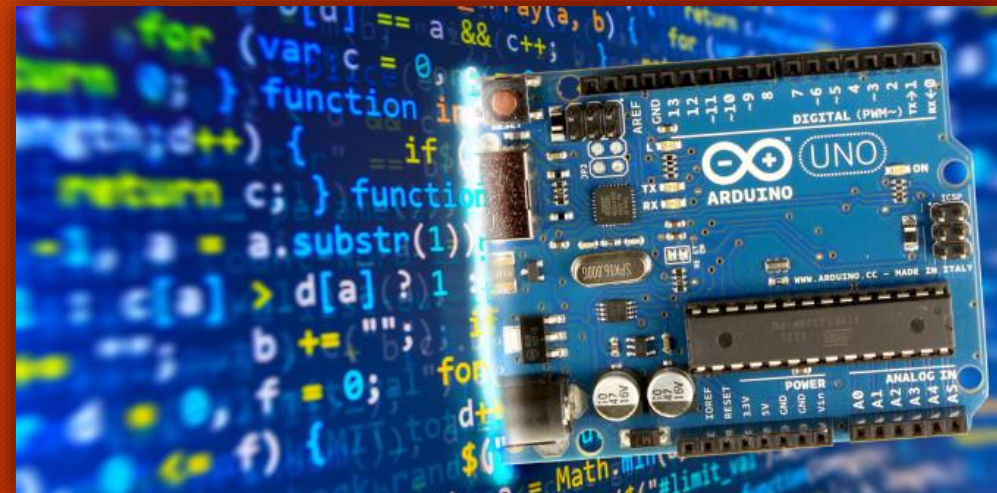
- Arduino is ideal for low cost prosthetics:
 - Simple
 - Versatile
 - Cheap
- Allows for high complexity low cost systems
 - Myo-sensors
 - Multiple function programs
- Challenges:
 - Size
 - Power capacity
 - Grounding



Arduino

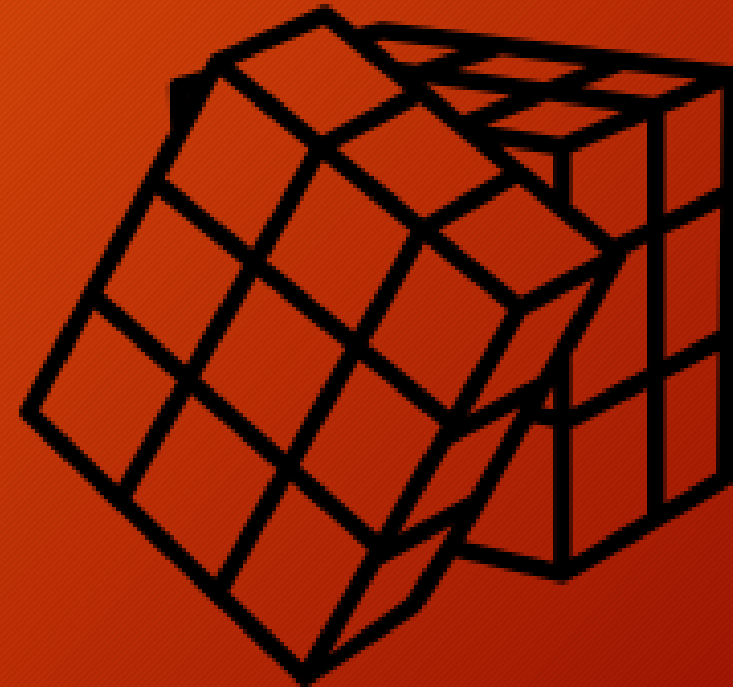


- Coding issues
 - Pulse Width Modulation
 - Solution: Closer frequency delays and switch across fingers
- Signal calibration
- Uploading and testing



Challenges

- 3d printing high quality consistently
- Finding best motors for limbs
- Grip pressure
- Connecting myo sensors reliably
- Calibration and timing



Modules



- Palm module

- Mouse
- Suction cup
- Light
- Fan



- Arm Module

- Phone storage
- Phone charger



- Top Cover Module

- Billiards stand
- Phone Stand
- Lighter
- USB locker
- Light

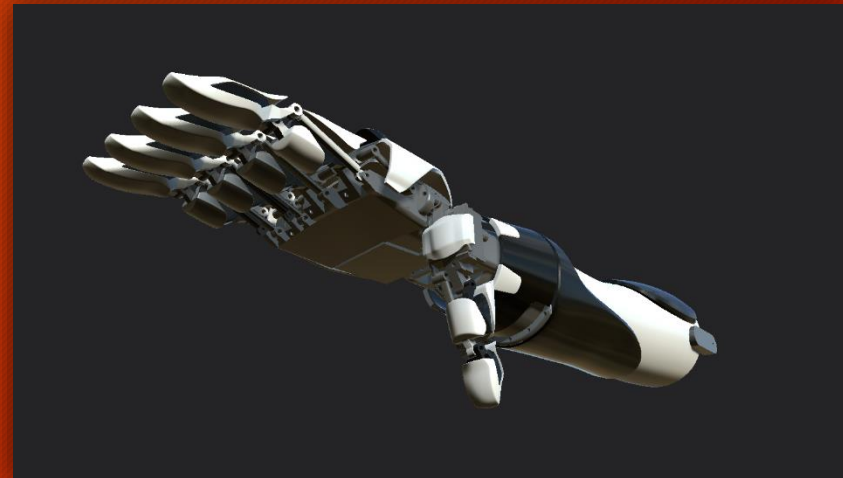
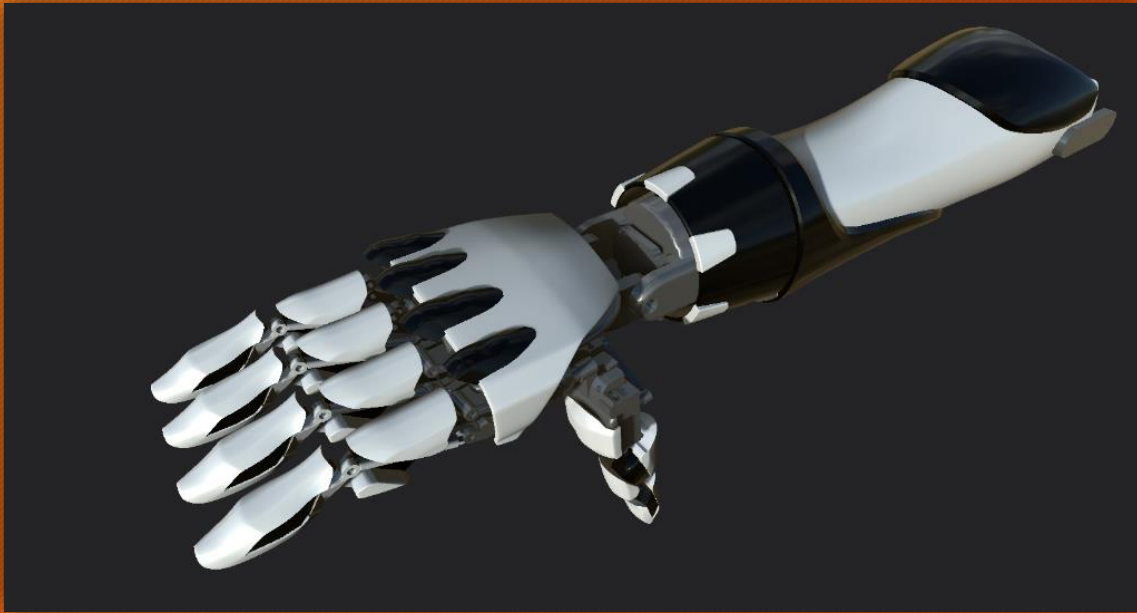


- Industrial attachments

- Service tray and cupholders
- Power tool attachment
- Ampmeter



Development - Mk 4 - Ongoing



- Aesthetics done by game designers
- Chance to see game creations brought to life
- Opportunity for maker and designer freelancing

The Future



End

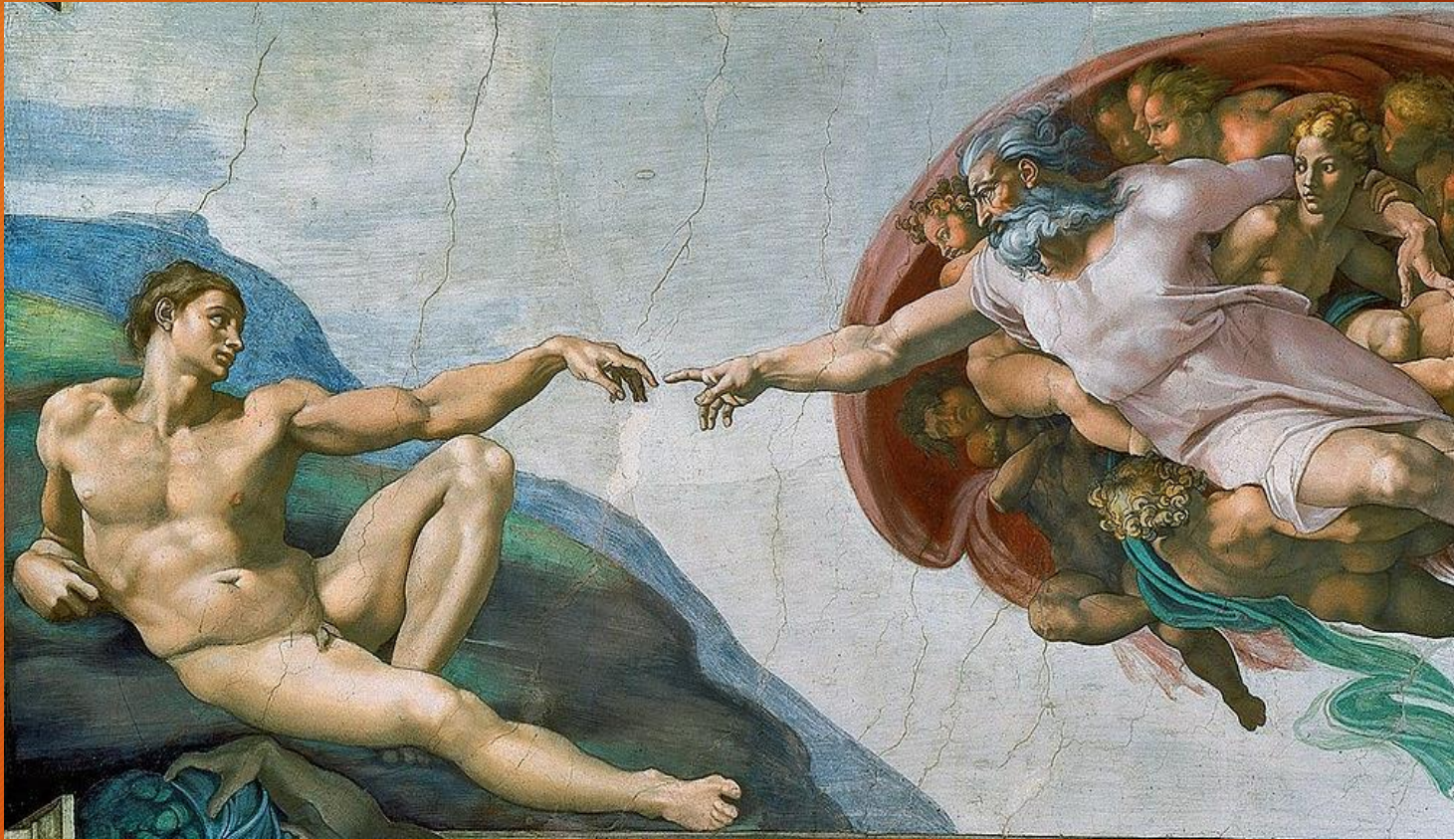
Thank you for your attention



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- The Creation of Adam by Michaelangelo
- First human being given life
- Reaching towards godhood