Our goal with this project was to combine image processing and control systems to inspire future projects. We also wanted to get a better understanding of robotics and help make them more intuitive and less restrictive. Our VSRH mimics a user’s hand without having to physically control the VSRH.

System Overview

- **Kinect v2**
  - Get the image of the hand

- **PC**
  - Process the image of the hand
  - Send states to the controller

- **Pololu Mini Maestro**
  - Receive hand, wrist, and forearm states from the PC

- **Linear Actuators and servos**
  - Move motors to desired position

- **Tendons**
  - Cables to work like tendons in the human hand
  - Open and close as the tendons pull on the fingers

- **3D robotic hand**

Results

- Can manipulate a ball
- Touch sensitive
- Mimics 3 hand states

Possible Applications

- Neural prosthetics
- Drone recognition and control in GPS denied environments
- Humanoid search and rescue robotics

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