ME134 HW5 Group 6 November 23rd, 2021



PacBot FunBot!





REBECCA SHEN

MECHANICAL DESIGN





Larger backboard

Raised ultrasonic and camera mount

Shifted limit switch + new motor driven gate

DC motor height adjustment

Creativity:

Faces give PacBot personality



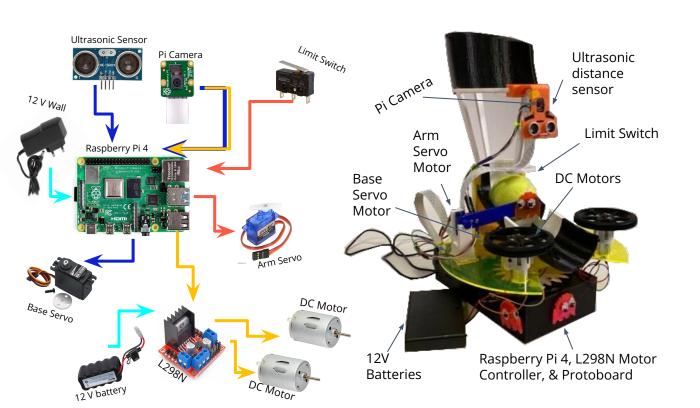
ORIGINAL DESIGN

FINAL CAD

FINAL BUILD

ELECTRONICS





Creativity & Innovation

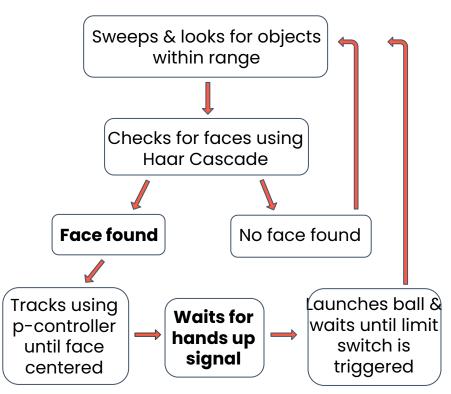


- Combined use of ultrasonic sensor and vision
- Limit switch to track ball return
- HRI design on camera and distance sensor
- "Tennis ball" shooter inspiration for motor system

SOFTWARE

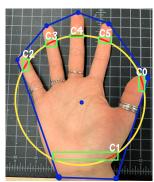


Code



Creativity & Innovation





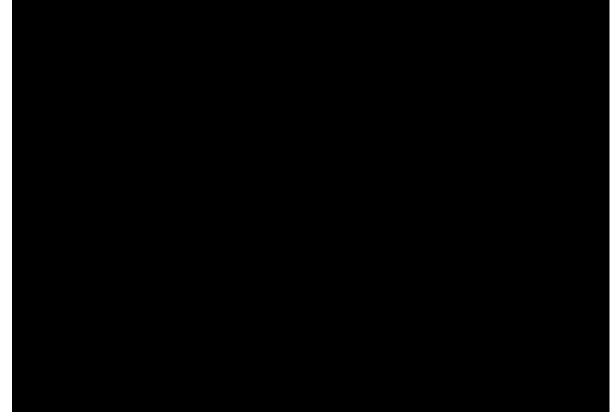
Finger Detection w/ OpenCV

Input: Thresholded image + segmented hand contour

Convex hull & AND operation b/t thresholded image and circular ROI

Output: Number of fingers

Rebecca



THANK YOU!