

## Report for hw4

### Part 0:

Set the camera to work well.

### Part 1:

Use the code snippet. Since the color of the wall is kind of yellow in my house, which is similar to the color of my skin, I turn the value of lower\_HSV to [0, 65, 0] and lower\_YCrCb to [0, 138, 67] to fit better.

Also I change the kernel size to (10, 10), skinmask size to (1,1)

### Part 2:

Code snippets work well. I processed the hand image with connected component analysis. Find the contours and show ROIs.

### Part 3:

Code snippets work well. I changed ret, thresh to `cv2.threshold(gray, 0, max_binary_value, cv2.THRESH_OTSU)`, instead of using `cv2.THRESH_BINARY_INV`

Detect the fingers and angels.

### Part 4:

Design gestures.

Compute the number of fingers.

```
if(fingerCount == 0):
    pyautogui.press('s')
elif (fingerCount == 1):
    pyautogui.press('d')
elif (fingerCount == 2):
    pyautogui.press('a')
elif (fingerCount == 3):
    pyautogui.press('w')
else:
    pyautogui.press('space')
```

Also the patterns in the spec.

And I used these gestures to play an online game.