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1 import cv2
2 import mediapipe as mp
3 import webbrowser
4
5 # capture a video
6 cap = cv2.VideoCapture(0)
7 # declare mediapipe objects
8 mpHands = mp.solutions.hands
9 # extract hand objects
10 hands = mpHands.Hands()
11 # draw on the hands
12 mpDraw = mp.solutions.drawing_utils
13 fingerCoordinates = [(8, 6), (12, 10), (16, 14), (20, 18)]
14 thumbCoordinate = (4, 2)
15
16
17 # Assigning URL to be opened
18 strURL1 = "https://www.w3schools.com/"
19 strURL2 = "https://belurmath.org/"
20 strURL3 = "https://www.youtube.com/watch?v=xj1Iy4nRMkc"
21 strURL4 = "https://www.youtube.com/watch?v=AKR1UQ-jvIc"
22 strURL5 = "https://en.wikipedia.org/wiki/Subhas_Chandra_Bose"
23
24 while True:
25     success, img = cap.read()
26     # imgRGB = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
27     # process hand image
28     results = hands.process(img)
29     # getting multihand landmarks
30     multiLandMarks = results.multi_hand_landmarks
31     print(multiLandMarks)
32
33     if multiLandMarks:
34         # one hand each time
35         handPoints = []
36         for handLms in multiLandMarks:
37             # draw on the hand the landmarks
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38         mpDraw.draw_landmarks(img, handLms,
    mpHands.HAND_CONNECTIONS)
39
40         for idx, lm in enumerate(handLms.landmark
    ):
41             # print(idx, lm)
42             h, w, c = img.shape
43             cx, cy = int(lm.x * w), int(lm.y * h)
44             # print(idx, cx, cy)
45             handPoints.append((cx, cy))
46
47         for point in handPoints:
48             # print(point)
49             cv2.circle(img, point, 5, (255, 0,
    255), cv2.FILLED)
50
51         upCount = 0
52         for coordinate in fingerCoordinates:
53             if handPoints[coordinate[0]][1] <
    handPoints[coordinate[1]][1]:
54                 upCount += 1
55
56             if handPoints[thumbCoordinate[0]][0] >
    handPoints[thumbCoordinate[1]][0]:
57                 upCount += 1
58
59         cv2.putText(img, str(upCount), (100, 150
    ), cv2.FONT_HERSHEY_PLAIN, 12, (255, 0, 0), 12)
60
61         if upCount == 1:
62             webbrowser.open(strURL1, new=0)
63             cv2.destroyAllWindows()
64             break
65
66         elif upCount == 2:
67             webbrowser.open(strURL2, new=0)
68             cv2.destroyAllWindows()
69             break
70         elif upCount == 3:
71             webbrowser.open(strURL3, new=0)
72             cv2.destroyAllWindows()

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73             break
74         elif upCount == 4:
75             webbrowser.open(strURL4, new=0)
76             cv2.destroyAllWindows()
77             break
78         elif upCount == 5:
79             webbrowser.open(strURL5, new=0)
80             cv2.destroyAllWindows()
81             break
82
83     cv2.imshow('Finger Counter', img)
84     cv2.waitKey(1)
85
86
87
```