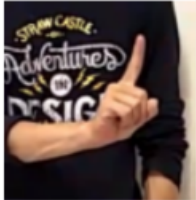


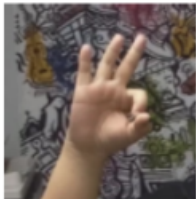


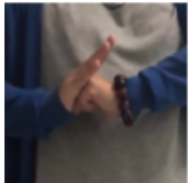
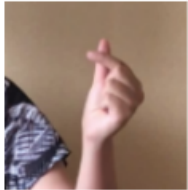


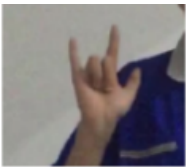
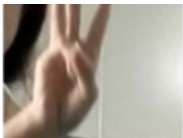
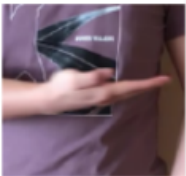
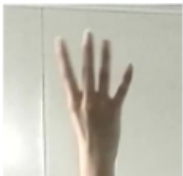

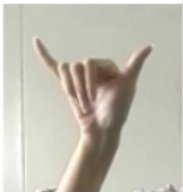

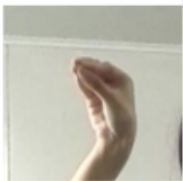
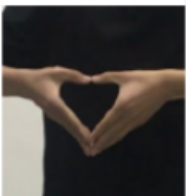
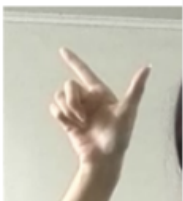
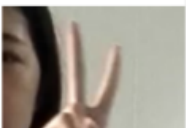
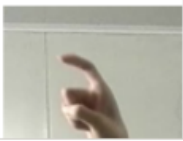



1.Gesture Recognition

Gestures supported by gesture recognition and example images:

Serial number	Gestures name	Sample
1	number_1	
2	number_5	
3	fist	
4	ok	
5	pray	
6	congratulation	
7	honour	
8	heart_single	
9	thumb_up	
10	thumb_down	

11	i_love_you		17	number_3	
12	palm_up		18	number_4	
13	heart_1		19	number_6	
14	heart_2		20	number_7	
15	heart_3		21	number_8	
16	number_2		22	number_9	

23	rock	
----	------	--

API function

```

from aip import AipBodyAnalysis
""" your APPID AK SK """
APP_ID = 'your App ID'
API_KEY = 'your Api Key'
SECRET_KEY = 'your Secret Key'
client = AipBodyAnalysis(APP_ID, API_KEY, SECRET_KEY)
""" Read pictures """
def get_file_content(filePath):
    with open(filePath, 'rb') as fp:
        return fp.read()
image = get_file_content('example.jpg')
""" Invoking gesture recognition """
Res = client.gesture(image);

```

Gesture recognition return example:

```

{
  "log_id": 4466502370458351471,
  "result_num": 2,
  "result": [{
    "probability": 0.9844077229499817,
    "top": 20,
    "height": 156,
    "classname": "Face",
    "width": 116,
    "left": 173
  },
  {
    "probability": 0.4679304957389832,
    "top": 157,
    "height": 106,
    "classname": "Heart_2",
    "width": 177,
    "left": 183
  }
  ]
}

```

Main code

Code path: /home/yahboom/Dofbot/6.AI_Visual/4.Pack up for identification.ipynb

When importing Baidu API, it is important to change the key to the one you applied for.

```

import cv2
import time
import demjson
import pygame
from aip import AipBodyAnalysis
from aip import AipSpeech
from PIL import Image, ImageDraw, ImageFont
import numpy
import ipywidgets.widgets as widgets

```

```

# For specific gestures, please see official information.
https://ai.baidu.com/ai-doc/BODY/4k3cpywrv
#Please refer to the official information for specific gestures
https://ai.baidu.com/ai-doc/BODY/4k3cpywrv
hand={'One':'number 1','Two':'number 2','Three':'number 3','Four':'number 4',
      'Five':'number 5', 'Six':'number 6','Seven':'number 7',
      'Eight':'number 8','Nine':'number 9','Fist':'Fist','Ok':'OK',
      'Prayer':'Prayer','Congratulation':'Bow','Honour':'Farewell',
      'Heart_single':'Show heart','Thumb_up':'Like','Thumb_down':'Diss',
      'ILY':'I love you','Palm_up':'Palm up','Heart_1':'Hands show heart1',
      'Heart_2':'Hands show heart2','Heart_3':'Hands show heart3','Rock':'Rock',
      'Insult':'Erect middle finger','Face':'Face'}

# The following keys need to be replaced with your own
#The key below needs to be replaced with one's own
""" Human analysis APPID AK SK """
APP_ID = '31069241'
API_KEY = 'pxVueLwdAGX4dafYeLsLdZa1'
SECRET_KEY = 'VsDmfGRlWGqzGhcWowoCT5km4TG4Gylq'

client = AipBodyAnalysis(APP_ID, API_KEY, SECRET_KEY)

g_camera = cv2.VideoCapture(0)
g_camera.set(3, 640)
g_camera.set(4, 480)
g_camera.set(5, 30) #Set frame rate
g_camera.set(cv2.CAP_PROP_FOURCC, cv2.VideoWriter_fourcc('M', 'J', 'P', 'G'))
g_camera.set(cv2.CAP_PROP_BRIGHTNESS, 40) #Set brightness -64 - 64 0.0
g_camera.set(cv2.CAP_PROP_CONTRAST, 50) #Set contrast -64 - 64 2.0
g_camera.set(cv2.CAP_PROP_EXPOSURE, 156) #Set exposure value 1.0 - 5000 156.0

ret, frame = g_camera.read()

```

Camera display component

```

image_widget = widgets.Image(format='jpeg', width=600, height=500) #Set up the
camera display component
display(image_widget)
image_widget.value = bgr8_to_jpeg(frame)

```

Main display and display results program.

```

try:

    while True:
        """1.Take photos """
        ret, frame = g_camera.read()

        #image = get_file_content('./image.jpg')

        """ 2.Invoking gesture recognition """

```

```

raw = str(client.gesture(image_widget.value))
text = demjson.decode(raw)
try:
    res = text['result'][0]['classname']
except:
    # print('Recognition result: Nothing was recognized~' )
    # img = cv2ImgAddText(frame, "Not recognized", 250, 30, (0, 0 , 255),
30)
    img = frame
else:
    # print('Recognition results: ' + hand[res])
    # img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)
    if res == 'Prayer': # 1 pray
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == 'Thumb_up':# 2 like
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == 'Ok': # 3 OK
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == 'Heart_single': # 4 Showing heart with one hand
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == 'Five': # 5 number 5
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == "Eight": # number 8
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == "Rock": # rock
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == "Congratulation": # bow
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == "Seven": # number 7
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    elif res == "Thumb_down": # Thumb down
        print('Recognition results: ' + hand[res])
        img = cv2ImgAddText(frame, hand[res], 250, 30, (0, 255 , 0), 30)

    else:
        img = frame
image_widget.value = bgr8_to_jpeg(img)

```

```
except KeyboardInterrupt:  
    print(" Program closed! ")  
    pass
```

After the code block is run, you can see the recognition screen. **Note, if you cannot identify Baidu, apply for your own secret key.**