PROYECTO 3ER PARCIAL PROCESAMIENTO DE IMÁGENES

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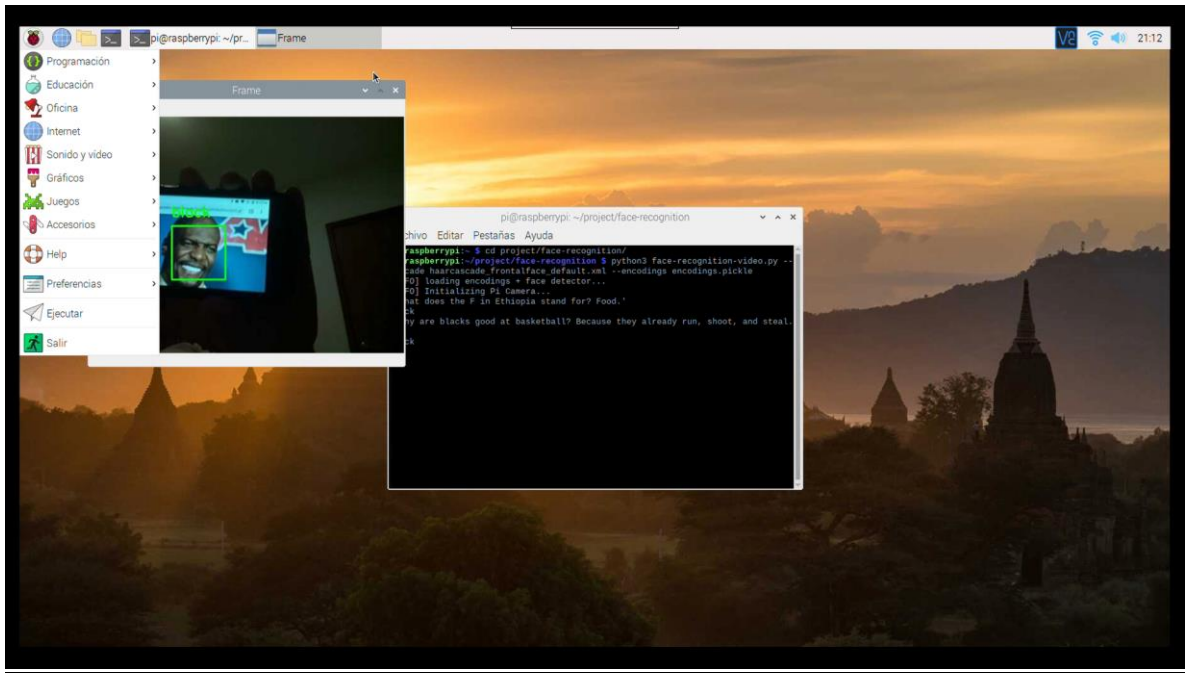
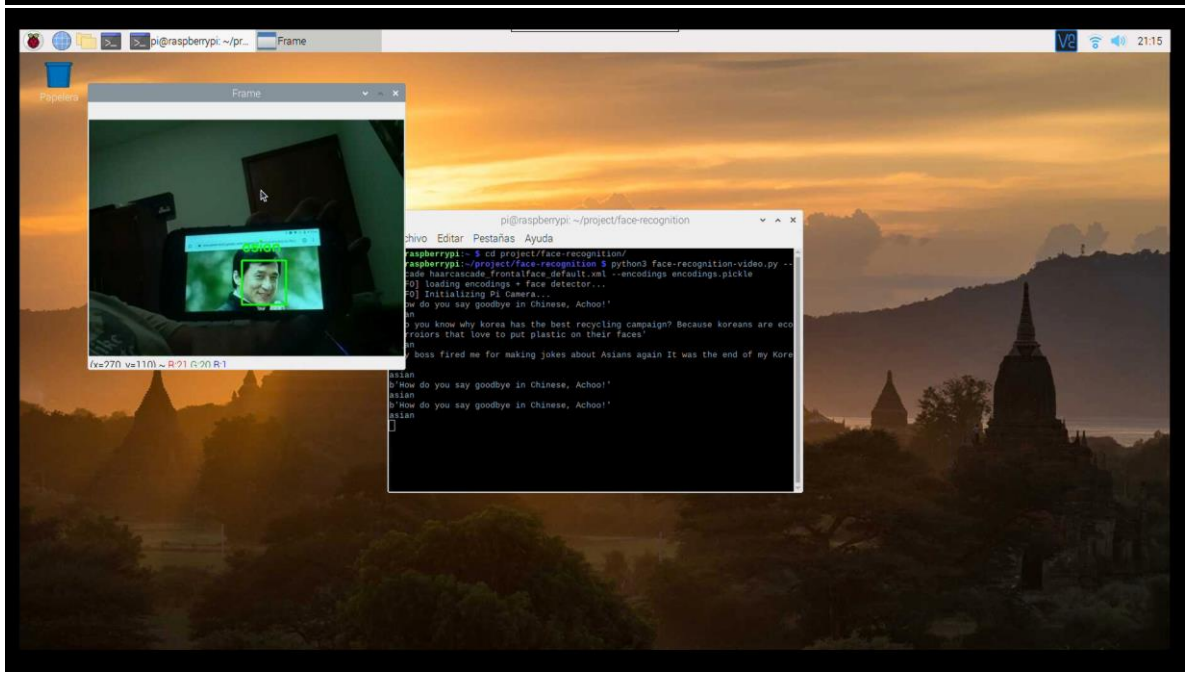
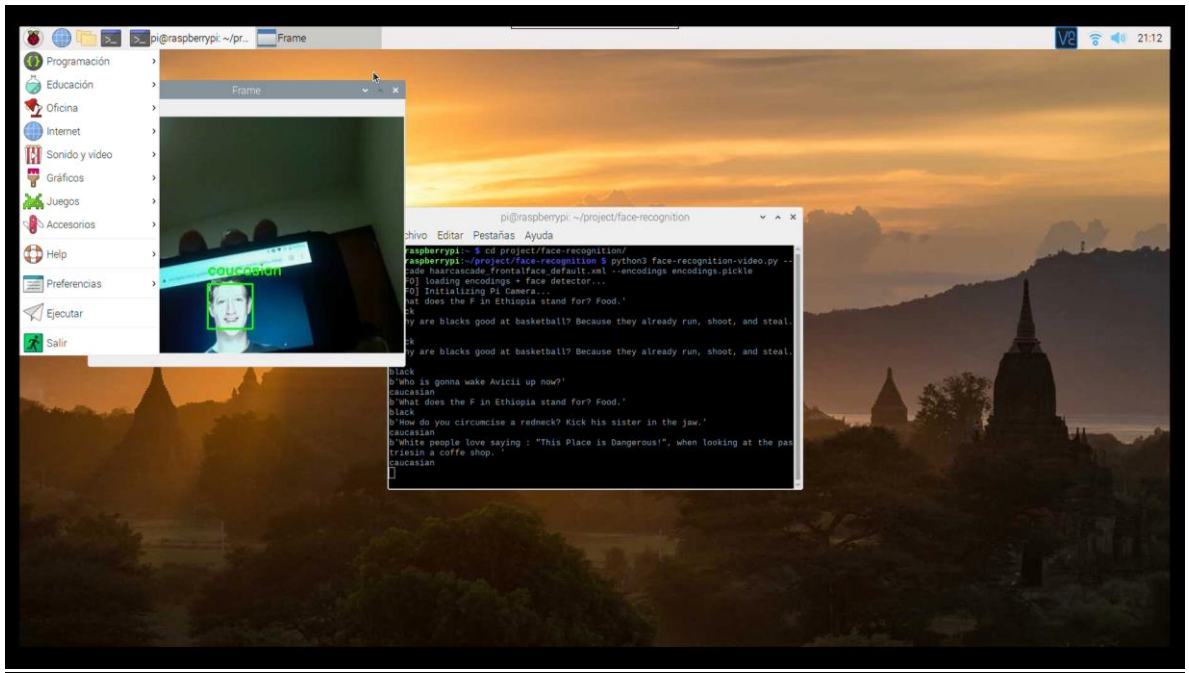
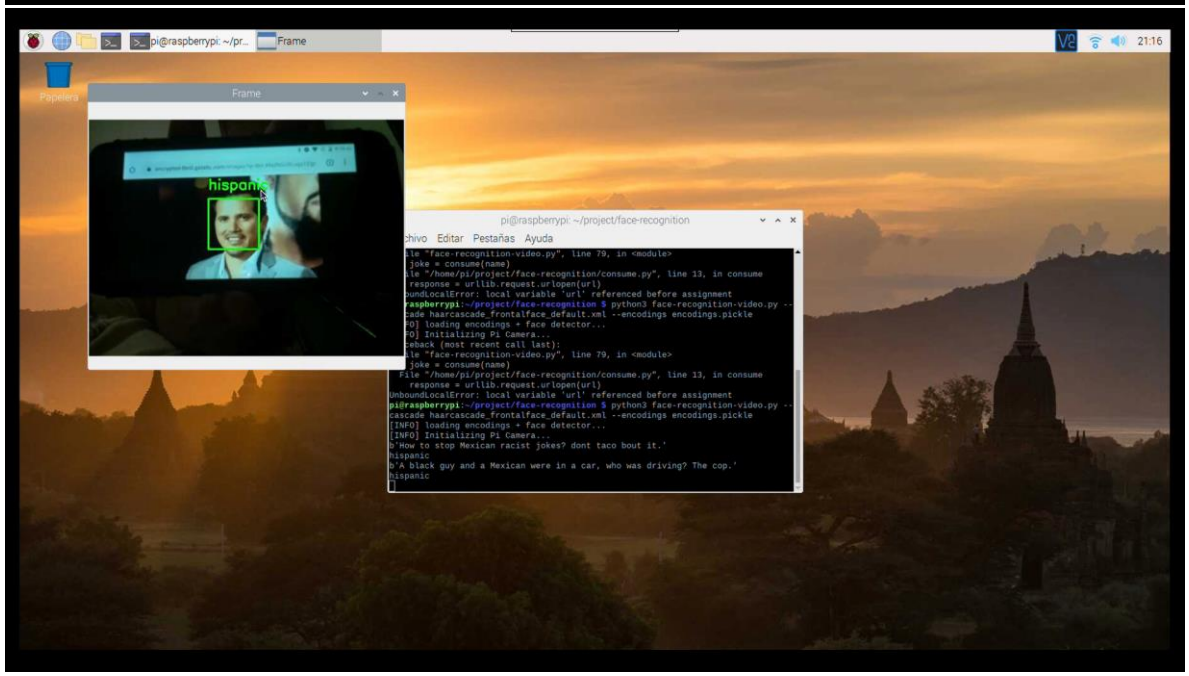
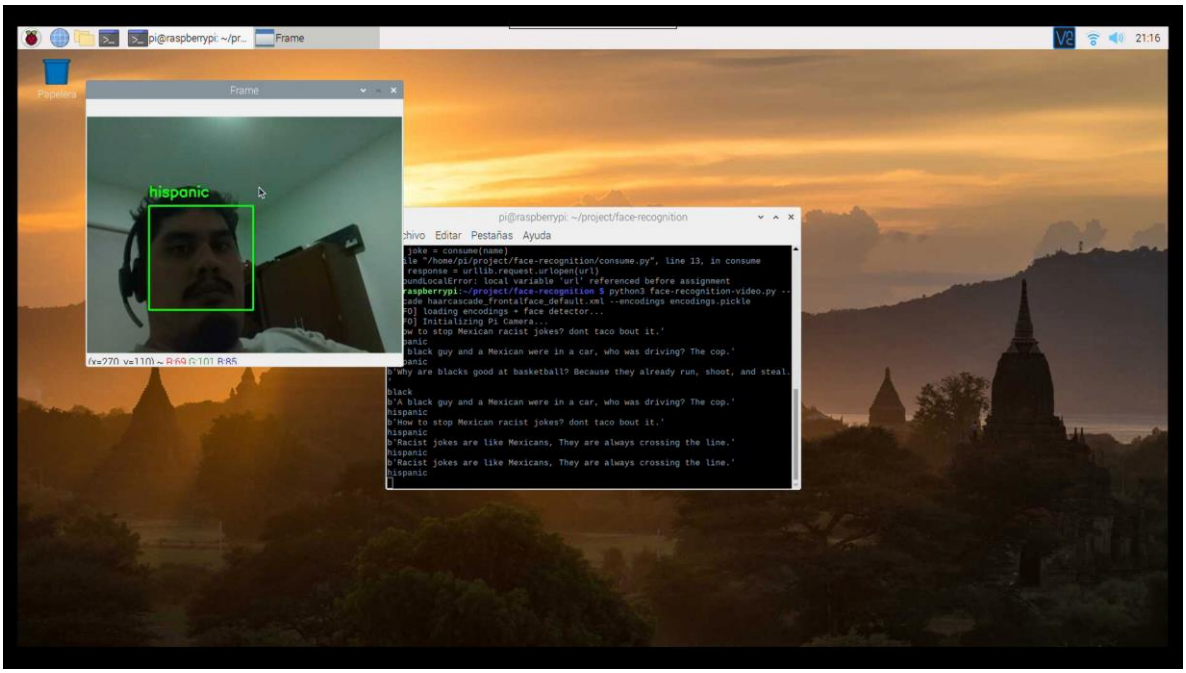
Procesamiento de imágenes


pi@raspberrypi: ~/pr...
Frame
21:12
Programación
Educación
Oficina
Internet
Sonido y video
Gráficos
Juegos
Accesorios
Help
Preferencias
Ejecutar
Salir
Frame
pi@raspberrypi: ~/project/face-recognition
Archivo Editar Pestañas Ayuda
pi@raspberrypi:~ $ cd project/face-recognition/
pi@raspberrypi:~/project/face-recognition $ python3 face-recognition-video.py --
cade haarcascade_frontalface_default.xml --encodings encodings.pickle
[0] loading encodings + face detector...
[0] Initializing Pi Camera...
hat does the F in Ethiopia stand for? Food.'
hy are blacks good at basketball? Because they already run, shoot, and steal.

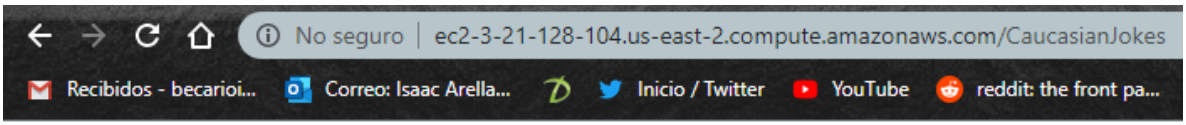

pi@raspberrypi: ~/pr...
Frame
21:15
Papelera
Frame
pi@raspberrypi: ~/project/face-recognition
Archivo Editar Pestañas Ayuda
pi@raspberrypi:~ $ cd project/face-recognition/
pi@raspberrypi:~/project/face-recognition $ python3 face-recognition-video.py --
cade haarcascade_frontalface_default.xml --encodings encodings.pickle
[0] loading encodings + face detector...
[0] Initializing Pi Camera...
w do you say goodbye in Chinese, Achoo!'
n
you know why korea has the best recycling campaign? Because koreans are eco
rroiors that love to put plastic on their faces'
n
boss fired me for making jokes about Asians again It was the end of my Kore
asian
b'How do you say goodbye in Chinese, Achoo!'
asian
b'How do you say goodbye in Chinese, Achoo!'
asian


Programación
Educación
Oficina
Internet
Sonido y video
Gráficos
Juegos
Accesorios
Help
Preferencias
Ejecutar
Salir
Frame
caucasian
pi@raspberrypi: ~/project/face-recognition
Archivo Editar Pestañas Ayuda
21:12


Papelera
Frame
hispanic
pi@raspberrypi: ~/project/face-recognition
Archivo Editar Pestañas Ayuda
21:16



AWS Instance



White people love saying : "This Place is Dangerous!", when looking at the pastriesin a coffe shop.

Webservice Client

```
import urllib.request, json

def consume(race):
    if (race == 'asian'):
        url = "http://ec2-3-21-128-104.us-east-2.compute.amazonaws.com/AsianJokes"
    elif (race == 'black'):
        url = "http://ec2-3-21-128-104.us-east-2.compute.amazonaws.com/BlackJokes"
    elif (race == 'caucasian'):
        url = "http://ec2-3-21-128-104.us-east-2.compute.amazonaws.com/CaucasianJokes"
    elif (race == 'hispanic'):
        url = "http://ec2-3-21-128-104.us-east-2.compute.amazonaws.com/HispanicJokes"

    response = urllib.request.urlopen(url)
    data = response.read()

    return (data)
```

CNN Trainer

```
for (i, imagePath) in enumerate(imagePaths):

    print("[INFO] Memproses gambar {}/{}".format(i + 1,
        len(imagePaths)))
    name = imagePath.split(os.path.sep)[-2]


    image = cv2.imread(imagePath)
    rgb = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)


    boxes = face_recognition.face_locations(rgb,
        model=args["detection_method"])


    encodings = face_recognition.face_encodings(rgb, boxes)


    for encoding in encodings:
        knownEncodings.append(encoding)
        knownNames.append(name)
```

Main program

```
while True:
    # frame resize  500pixel
    frame = vs.read()
    frame = imutils.resize(frame, width=500)

    # Definition to color spaces
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
    rgb = cv2.cvtColor(frame, cv2.COLOR_BGR2RGB)

    rects = detector.detectMultiScale(gray, scaleFactor=1.1,
        minNeighbors=5, minSize=(30, 30),
        flags=cv2.CASCADE_SCALE_IMAGE)

    boxes = [(y, x + w, y + h, x) for (x, y, w, h) in rects]

    encodings = face_recognition.face_encodings(rgb, boxes)
    names = []

    for encoding in encodings:
        matches = face_recognition.compare_faces(data["encodings"],
            encoding)
        name = "Unknown"

        # Get names from folders
        if True in matches:
            matchedIdxs = [i for (i, b) in enumerate(matches) if b]
            counts = {}
            for i in matchedIdxs:
                name = data["names"][i]
                counts[name] = counts.get(name, 0) + 1
            name = max(counts, key=counts.get)
        names.append(name)
```

```
# Drawing rectangle on face
for ((top, right, bottom, left), name) in zip(boxes, names):
    cv2.rectangle(frame, (left, top), (right, bottom),
        (0, 255, 0), 2)
    y = top - 15 if top - 15 > 15 else top + 15
    cv2.putText(frame, name, (left, y), cv2.FONT_HERSHEY_SIMPLEX,
        0.75, (0, 255, 0), 2)

    joke = consume(name)
    '''mytext = str(joke)
    language = 'en'
    myobj = gTTS(text=mytext, lang=language, slow=False)
    myobj.save("joke.mp3")
    os.system("mpg321 joke.mp3") '''

    print(joke)
    print(name)

# Draw images
cv2.imshow("Frame", frame)
key = cv2.waitKey(1) & 0xFF


if key == ord("q"):
    break

# update FPS
fps.update()
```

XML Model

```
<opencv_storage>
<cascade type_id="opencv-cascade-classifier"><stageType>BOOST</stageType>
  <featureType>HAAR</featureType>
  <height>24</height>
  <width>24</width>
  <stageParams>
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  <featureParams>
    <maxCatCount>0</maxCatCount></featureParams>
  <stageNum>25</stageNum>
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    <_>
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      <stageThreshold>-5.0425500869750977e+00</stageThreshold>
      <weakClassifiers>
        <_>
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        <_>
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          <leafValues>
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        <_>
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            -7.7945697307586670e-01 1.2608419656753540e+00</leafValues></_>
        <_>
```