Lab08

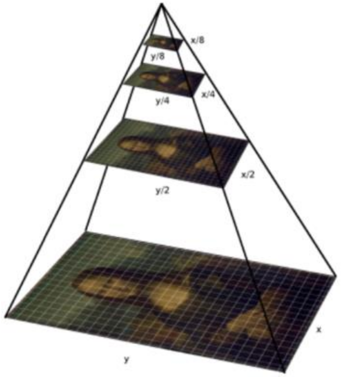
目標

- 利用HOG行人檢測及Dlib臉部偵測框出人(25%)與人臉 (25%)
- 利用任一方法算出與其的距離
- demo時為即時影像並用尺量人(25%)與人臉 (25%) 距離準確度
- demo誤差: 人(100cm)、人臉(10cm)

HOG(Histogram of Oriented Gradient)

# initialize the HOG descriptor/person detector

- hog = cv2.HOGDescriptor()
- hog.setSVMDetector(cv.HOGDescriptor_getDefaultPeopleDetector())
- rects, weights = hog.detectMultiScale(src, #輸入圖
  winStride, #在圖上抓取特徵時窗口的移動大小
  scale, #抓取不同scale (越小就要做越多次)
  useMeanshiftGrouping = False)



Dlib Face Detection

(python >=3.7)

```
pip install cmake
pip install dlib
```

Dlib Face Detection

- import dlib
- detector = dlib.get_frontal_face_detector()
- face_rects = detector(img, 0)
- 取出所有偵測的結果

```
for i, d in enumerate(face_rects):
    x1 = d.left()
    y1 = d.top()
    x2 = d.right()
    y2 = d.bottom()
```

畫出長方形

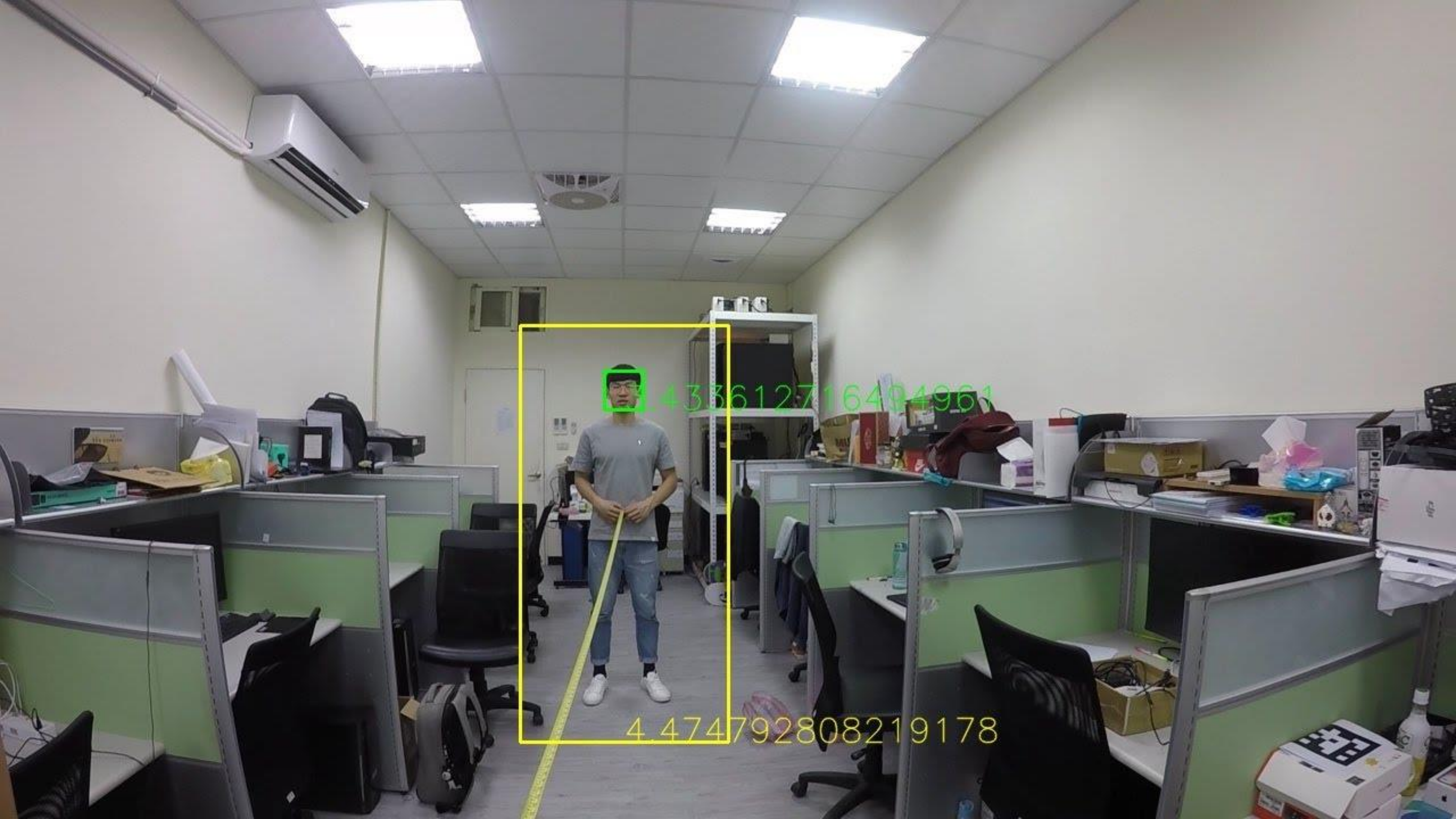
- image = cv2.rectangle(image, start_point, end_point, color, thickness)

深度預測

- 不限定方法

1. 已知高度
2. 假設人或人臉為平面, 已知大小解SolvePnP

- cv2.solvePnP(objectPoints, imagePoints, cameraMatrix, distCoeffs[, rvec[, tvec[, useExtrinsicGuess[, flags]]]]) → retval, rvec, tvec


4.433612716494961
4.474792808219178