

EMBEDDED VISION DESIGN 3

DATA

HANDS-ON

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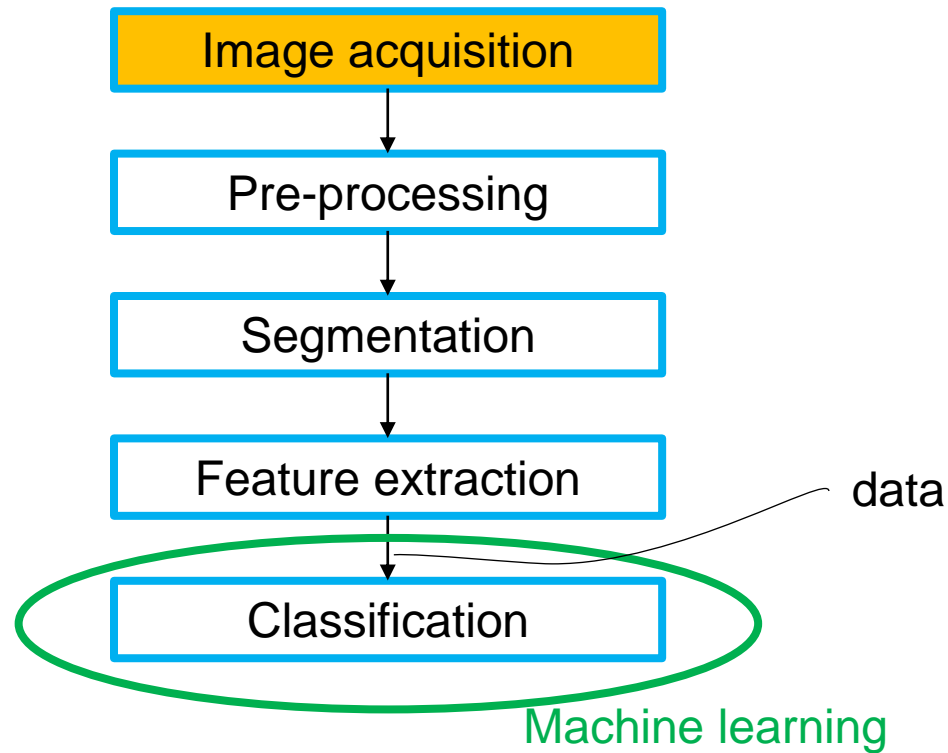
OPENCV TUTORIAL

- <https://www.pyimagesearch.com/2018/07/19/opencv-tutorial-a-guide-to-learn-opencv/>



CODE WALK THROUGH

A JUMP-START TO DATA



DATA ACQUISITION EXAMPLE

- acquire.py

import some packages

```
import os
import time
import cv2 as cv
import numpy as np
from imutils.video import VideoStream
```

DATA ACQUISITION EXAMPLE

- acquire.py

some definitions

```
frame_size = (320,240)
data_path = 'data'

mappings = {"i": "ignore",
            "r": "rock",
            "p": "paper",
            "s": "scissors",
            "h": "hang_loose"}
```

assign categories as Unicode character integer values

```
# map the keys to their ordinal numbers
kMappings = {}
for key in mappings.keys():
    kMappings[ord(key)] = mappings[key]
```

DATA ACQUISITION EXAMPLE

- acquire.py

open videostream

```
vs = VideoStream(usePiCamera=True, resolution=frame_size).start()  
time.sleep(1.0)
```

DATA ACQUISITION EXAMPLE

```
# loop over frames from the video stream
while True:
    # grab the frame from the threaded video file stream
    frame = vs.read()

    if frame is None:
        continue

    frame = np.rot90(frame, 3)

    cv.imshow("Frame", frame)

    k = cv.waitKey(1) & 0xFF

    # if the `q` key or ESC was pressed, break from the loop
    if k == ord("q") or k == 27:
        break

    # otherwise, check to see if a key was pressed that we are
    # interested in capturing
    elif k in kMappings.keys():
        # construct the path to the label subdirectory
        p = os.path.sep.join([data_path, kMappings[k]])
        if not os.path.exists(p):
            os.makedirs(p)

        # construct the path to the output image
        p = os.path.sep.join([p, "{}.png".format(
            int(time.time()))])
        print("[INFO] saving frame: {}".format(p))
        cv.imwrite(p, frame)
```


DATA ACQUISITION EXAMPLE

- `acquire.py`

ignore



paper



rock



scissors



hang loose

