EMBEDDED VISION DESIGN 3

DATA

HANDS-ON

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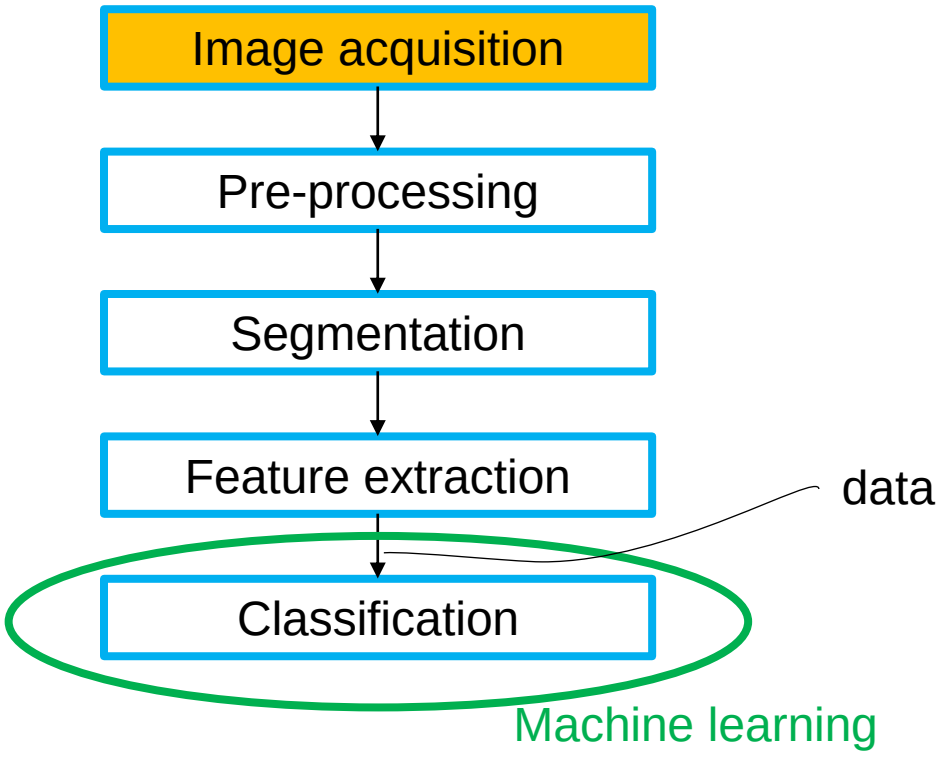
A JUMP-START TO DATA



CODE WALK THROUGH

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

OPENCV TUTORIAL

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