ENGR 3421: ROBOTICS I

RaspberryPi Camera

Dr. Lin Zhang

Department of Physics and Astronomy
University of Central Arkansas

September 16, 2021
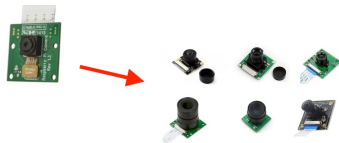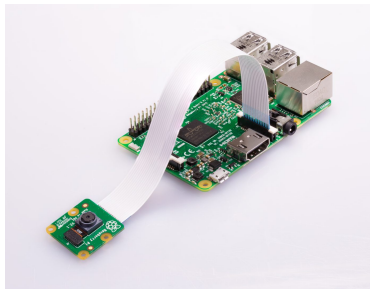
Outline

RaspberryPi Camera

OpenCV

Outline

RaspberryPi Camera

OpenCV

RaspberryPi Camera

picamera Library

Refer to the tutorial and the official documents.

```python
from picamera import PiCamera
from time import sleep

camera = PiCamera()

camera.start_preview()
sleep(5)
camera.stop_preview()
```
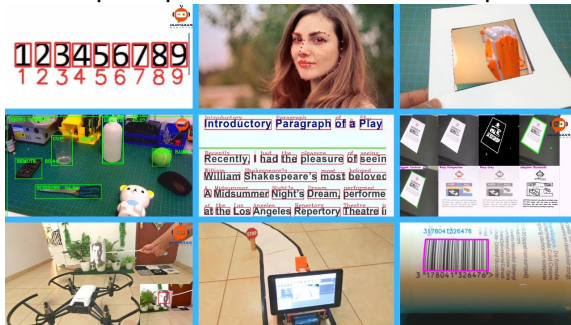
Outline

RaspberryPi Camera

OpenCV

OpenCV

OpenCV (Open Source Computer Vision Library) is an open source computer vision and machine learning software library. OpenCV was built to provide a common infrastructure for computer vision applications and to accelerate the use of machine perception in the commercial products.

OpenCV Video Capturing

```
import cv2

cap = cv2.VideoCapture(0)
cap.set(cv2.CAP_PROP_FRAME_WIDTH,640)
cap.set(cv2.CAP_PROP_FRAME_HEIGHT,480)
cap.set(cv2.CAP_PROP_FPS, 24)
for i in range(1000):
    ret, img = cap.read()
    # show the frame
    cv2.imshow("Frame", image)
    key = cv2.waitKey(1) & 0xFF
    # if the `q` key was pressed, break from the loop
    if key == ord("q"):
        break
cap.release()
cv2.destroyAllWindows()
```