

Python For Hands-on Lab 1A



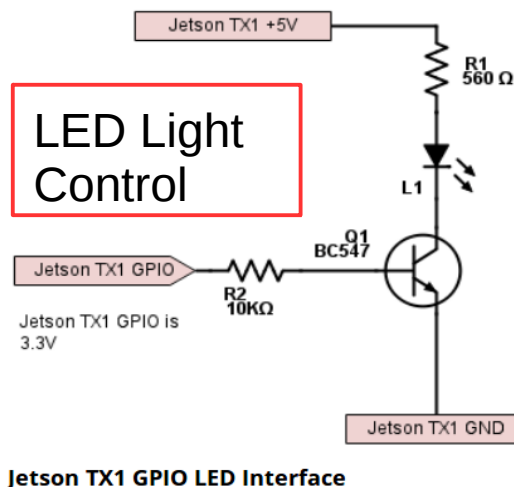
Sensor Interface, LED and Fan Control

```
'''
Date: Feb 2019; Coded by: HL
sample raspberry pie GPIO code
'''

#import the GPIO and time package
import RPi.GPIO as GPIO
import time
print('-----GPIO testing program-----')
print(GPIO.RPI_INFO)
GPIO.setmode(GPIO.BOARD)
GPIO.cleanup()
Boardpin = 8
GPIO.setup(Boardpin, GPIO.OUT)
# loop 5 times, on/off for 1 second
for i in range(5):
    print('GPIO testing program',i)
    GPIO.output(Boardpin,GPIO.HIGH)
    time.sleep(1)
    GPIO.output(Boardpin,GPIO.LOW)
    time.sleep(1)
GPIO.cleanup()
print('End')
```



1



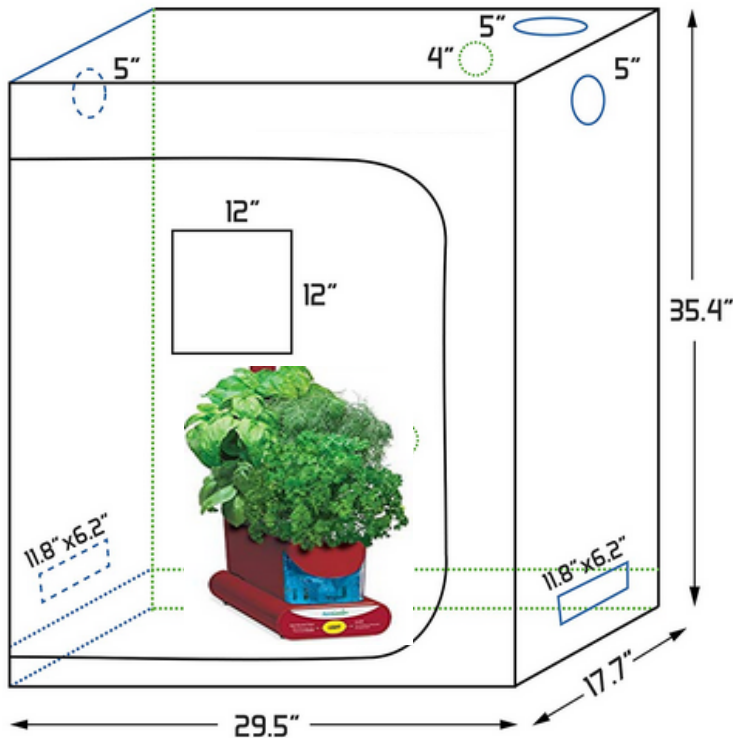
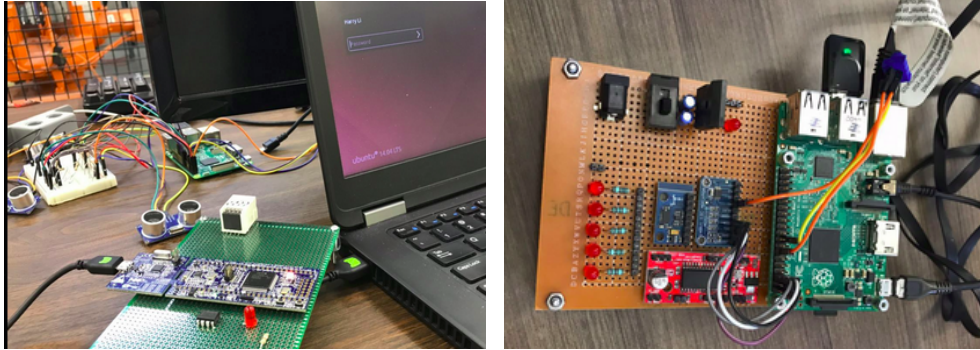
2



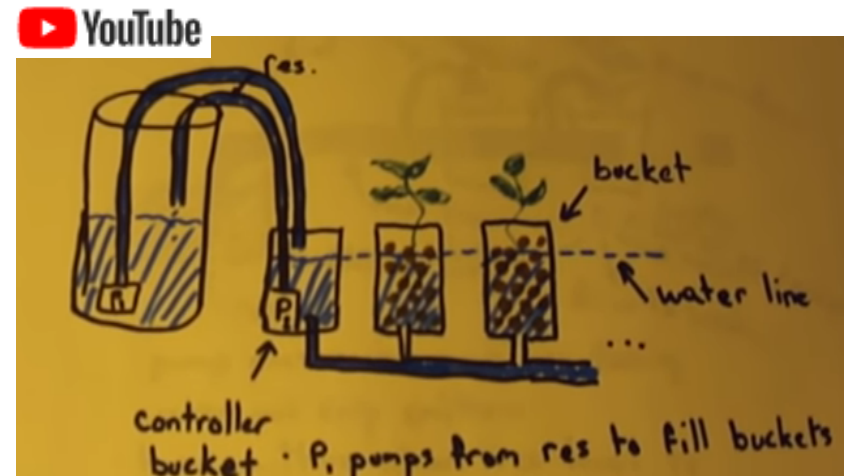
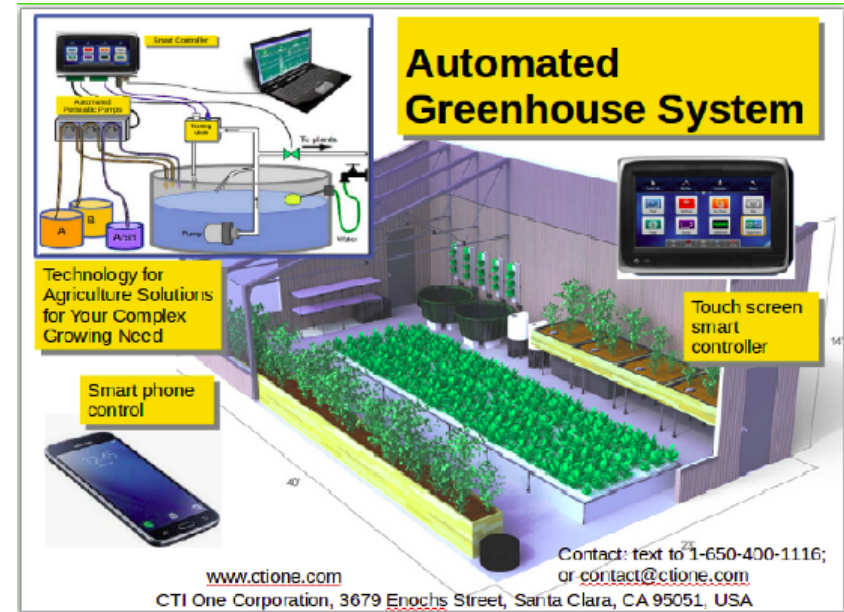


Python For Hands-on Lab 1B

Program and Build Hydroponic System



https://www.amazon.com/dp/B079DM1WCW/ref=sspa_dk_detail_5?psc=1&pd_rd_i=B079DM1WCW&pd_rd_w=lesbr&pf_rd_p=8a8f3917-7900-4ce8-ad90-adf0d53c0985&pd_rd_wg=vJnEW&pf_rd_r=PBK6TB7X6QMNE226V53E&pd_rd_r=c3d1febb-7865-11e9-825e-f767610a7f33

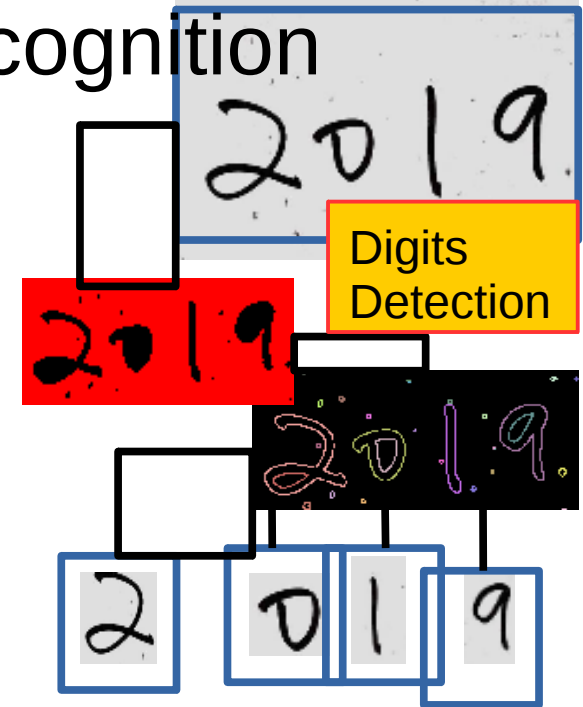
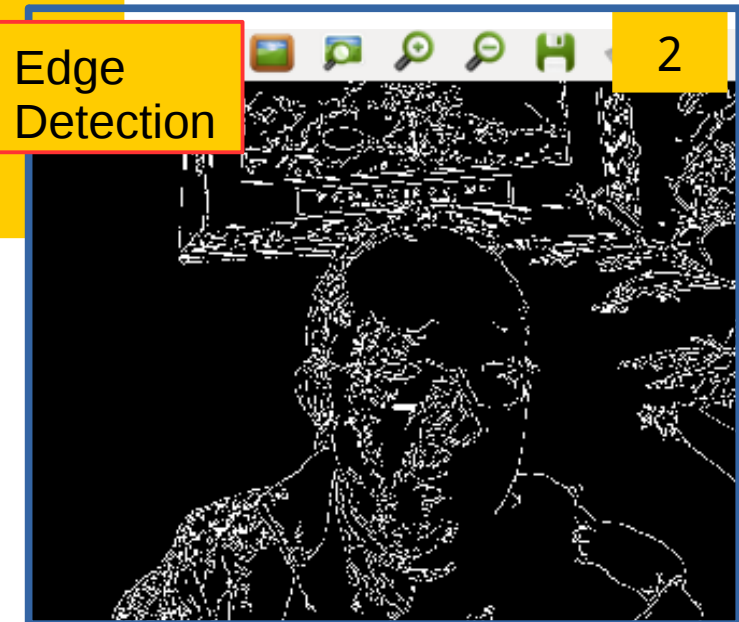


Python Hands-on Lab 2

Computer Vision and Digits Recognition



```
# capture frames from a camera
cap = cv2.VideoCapture(0)
while(1):
    ret, frame = cap.read()
    cv2.namedWindow("Original", cv2.WINDOW_NORMAL)
    cv2.imshow('Original',frame)
    gray_frame = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
    edges = cv2.Canny(gray_frame,5,80)
    cv2.namedWindow("Edges", cv2.WINDOW_NORMAL)
    cv2.imshow('Edges',edges)
    # Wait for Esc key to stop
    k = cv2.waitKey(5) & 0xFF
    if k == 27:
        break
# Close the window
cap.release()
```



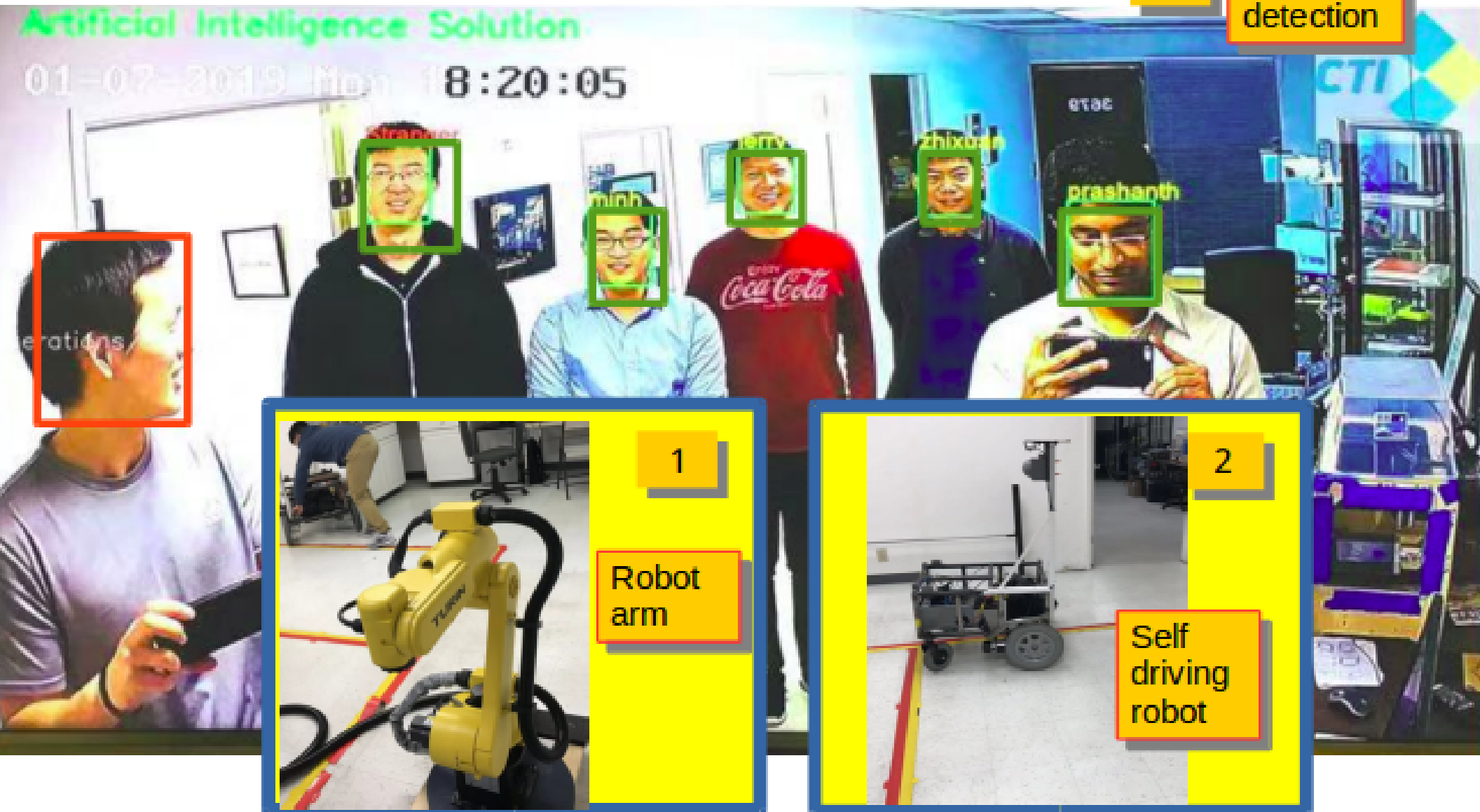
Programming Lab 3



Chose one: Facial Recognition, Program Self Driving or programming robot arm

3

Facial
detection



1

Robot
arm

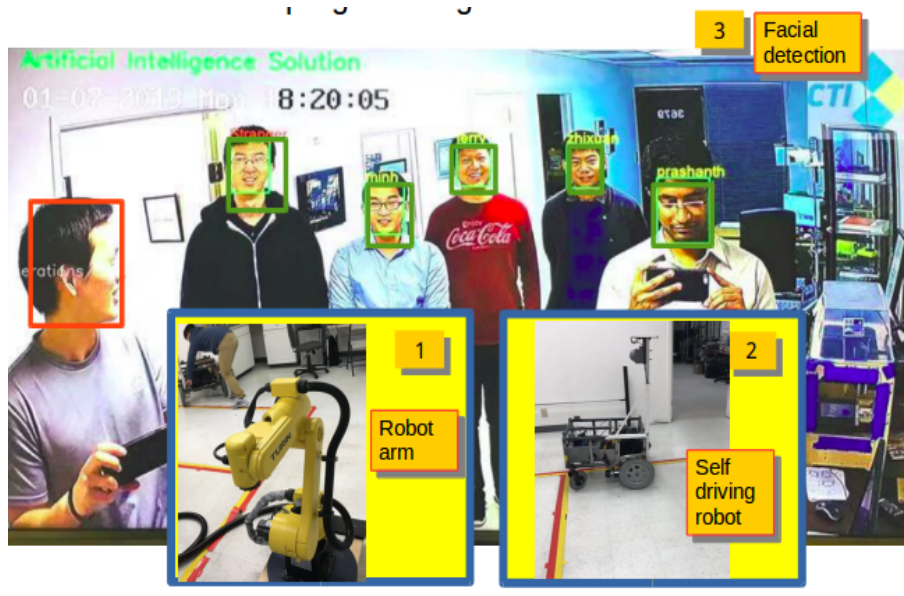
2

Self
driving
robot

Programming Python and C++



Visit Us, Open House First Friday Every Month
Programming, Robotics, Self Driving and IoT



AI and Tensor Flow



<https://www.youtube.com/watch?v=XaFMGwP2rUw>



Self Driving Robot



<https://www.youtube.com/watch?v=XRoqdKsWoAw>



Visit us on
YouTube

[https://www.youtube.com/results?
search_query=cti+one+corporation](https://www.youtube.com/results?search_query=cti+one+corporation)



IoT



[https://www.youtube.com/watch?
v=b3jGiEywa3w](https://www.youtube.com/watch?v=b3jGiEywa3w)



Learn to Program Python/C++ And Build Programming Platform Prototype Board Layout Design

