(Opencv (Computer Vision

Using OpenCV in ROS project

Using raspberry pi with webcam in ROS

: Components for the job

(○ Raspberry pi 4 (EPS32

(○ Webcam (BCC950

Connection with Raspberry pi   -

Get your pi ready   .1

·   You should start with a switched-on Raspberry Pi connected to a
.mouse, keyboard and monitor

·   Ensure that your Raspberry Pi is running the latest Raspbian

·   Connect your Pi to the same WiFi network as your PC is connected
to

Assemble the Pi and camera   .2

·   Connect the camera module to the PI's camera connector using
the ribbon cable provided with the camera. Make sure that the
silver contacts on the cable face towards the mini HDMI
connectors. Gently pull the connector lock up, slide in the cable
.and push the lock back down

·   .Start up your Pi

·   .Go to PI menu> Preferences >Raspberry Pi configuration

·   .Select the interfaces tab and enable camera

·   Reboot your Pi

·   .You can now test that the camera is working

Open a Terminal window and enter

"raspistill -o testimage.jpg"

: Software requirements

OpenCV software -1

CV libraries installation -2

Like in python (cv2) library -3

Python IDE or C++ IDE -4

Working in Linux for ROS -5

How do we need Opencv in ROS

: First it make the robot more specific more accurate these examples are amazing   -

https://www.youtube.com/watch?v=EJOe2QKkGRU   .1

https://www.youtube.com/watch?v=ZHwZdqa-wvw   .2

We need it for image and video processing   -

To make sure the robot know what everything looks like and give good feedback   -
to the publisher before taking any action

We use python or C++ to make the nodes for our publisher and subscriber

Like when we use python we can use this code to analytic the image that we have   -

```
import cv2    -

image = cv2.imread('photos / 1665335130325.jpeg') #reading the image from the file   -

(print ("loading" + image    -

-

: (def load_normal(path #    -

(print ('loading image' + path     #   -

(image = cv2.imread(path     #   -

return image    #   -
```

["Or the function that hashed [starts with "def   -

You just import the library and start writing the code and run and on the Terminal   -
the output with be matrices and it's just the dimensions of the photo

It's just a simple code for reading the image that I give to the program

And we will do the same in our project but more complex than this sure and the robot
.will do it with itself

Connection the camera with raspberry pi all connected with the robot then stat
working ISA

References -

- https://bit.ly/3PkFtUY

- https://bit.ly/3UJqipv

- https://bit.ly/3VTWWGr