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                                stereo_cam_and_3d_coordinate_positioning_with_python
import numpy as np
import cv2
import math

detect_cascade=cv2.CascadeClassifier('haarcascade_a.xml')
camR=cv2.VideoCapture(2)
camR.set(cv2.CAP_PROP_FRAME_WIDTH,720)
camR.set(cv2.CAP_PROP_FRAME_HEIGHT,405)
camL=cv2.VideoCapture(1)
camL.set(cv2.CAP_PROP_FRAME_WIDTH,720)
camL.set(cv2.CAP_PROP_FRAME_HEIGHT,405)

X=0
Y=0
Z=0

XX=0
YY=0
ZZ=0

while(True):
    a1=2000 #right
    a2=2000 #left
    tfr,frameR=camR.read()
    gray = cv2.cvtColor(frameR, cv2.COLOR_BGR2GRAY)
    detect = detect_cascade.detectMultiScale(gray, 1.3, 5)
    for (xrr,yrr,wr,hr) in detect:
        cv2.rectangle(frameR,(xrr,yrr),(xrr+wr,yrr+hr),(255,0,0),2)
        cv2.putText(frameR, "A",(xrr,yrr-50), cv2.FONT_HERSHEY_SIMPLEX,
0.75,(255,0,0),2);
        cv2.putText(frameR, "X=" + `X`,(xrr,yrr-30), cv2.FONT_HERSHEY_SIMPLEX,
0.5,(255,0,0),2);
        cv2.putText(frameR, "Y=" + `Y`,(xrr,yrr-15), cv2.FONT_HERSHEY_SIMPLEX,
0.5,(255,0,0),2);
        cv2.putText(frameR, "Z=" + `Z`,(xrr,yrr), cv2.FONT_HERSHEY_SIMPLEX,
0.5,(255,0,0),2);

        cv2.putText(frameR, "XX=" + `XX`,(xrr,(yrr+hr)+15),
cv2.FONT_HERSHEY_SIMPLEX, 0.5,(255,0,0),2);
        cv2.putText(frameR, "YY=" + `YY`,(xrr,(yrr+hr)+30),
cv2.FONT_HERSHEY_SIMPLEX, 0.5,(255,0,0),2);
        cv2.putText(frameR, "ZZ=" + `ZZ`,(xrr,(yrr+hr)+45),
cv2.FONT_HERSHEY_SIMPLEX, 0.5,(255,0,0),2);

        xr=xrr+(wr/2)
        yr=yrr+(hr/2)
        a1=(50*math.tan(32.5*3.14/180)*(xr-360)/360)-3.4
        hr=(50*math.tan(17*3.14/180)*(yr-202.5)/202.5)

```

## stereo\_cam\_and\_3d\_coordinate\_positioning\_with\_python

```
cv2.imshow('frame_Right',frameR)

tfL,frameL=camL.read()
gray = cv2.cvtColor(frameL, cv2.COLOR_BGR2GRAY)
detect = detect_cascade.detectMultiScale(gray, 1.3, 5)
for (x1l,y1l,w1,h1) in detect:
    cv2.rectangle(frameL,(x1l,y1l),(x1l+w1,y1l+h1),(255,0,0),2)
    cv2.putText(frameL, "A",(x1l,y1l-50), cv2.FONT_HERSHEY_SIMPLEX,
0.75,(255,0,0),2);
    cv2.putText(frameL, "X=" + `X`,(x1l,y1l-30), cv2.FONT_HERSHEY_SIMPLEX,
0.5,(255,0,0),2);
    cv2.putText(frameL, "Y=" + `Y`,(x1l,y1l-15), cv2.FONT_HERSHEY_SIMPLEX,
0.5,(255,0,0),2);
    cv2.putText(frameL, "Z=" + `Z`,(x1l,y1l), cv2.FONT_HERSHEY_SIMPLEX,
0.5,(255,0,0),2);

    cv2.putText(frameL, "XX=" + `XX`,(x1l,(y1l+h1)+15),
cv2.FONT_HERSHEY_SIMPLEX, 0.5,(255,0,0),2);
    cv2.putText(frameL, "YY=" + `YY`,(x1l,(y1l+h1)+30),
cv2.FONT_HERSHEY_SIMPLEX, 0.5,(255,0,0),2);
    cv2.putText(frameL, "ZZ=" + `ZZ`,(x1l,(y1l+h1)+45),
cv2.FONT_HERSHEY_SIMPLEX, 0.5,(255,0,0),2);

    x1=x1l+(w1/2)
    y1=y1l+(h1/2)
    a2=(50*math.tan(32.5*3.14/180)*(x1-360)/360)+3.4
    h1=(50*math.tan(17*3.14/180)*(y1-202.5)/202.5)

cv2.imshow('frame_Left',frameL)

if (a1<1000):
    if (a2<1000):
        x=((3.4*((-a2)-a1))/((-6.8)+a2-a1))
        y=(50-(340/(6.8-a2+a1)))
        X=-x
        Y=-(50-y)
        z=-(Y*hr)/50
        Z=z

        ZZ=Z+13
        XX=38-(Y+1)
        YY=X+28

    print 'X='
    print X
```

```
        stereo_cam_and_3d_coordinate_positioning_with_python
print 'Y='
print Y
print 'Z='
print Z
print 'XX='
print XX
print 'YY='
print YY
print 'ZZ='
print ZZ
```

```
key=cv2.waitKey(1)
```

```
if key==ord('k'):
    break
```

```
camR.release()
camL.release()
cv2.destroyAllWindows()
```