

All the if's in the end, are not that clean.

[findAruco.py](#)

```
import numpy as np
import math
import cv2
import cv2.aruco as aruco

cap = cv2.VideoCapture(0)

ARUCO_PARAMETERS = aruco.DetectorParameters_create()
ARUCO_DICT = aruco.Dictionary_get(aruco.DICT_6X6_1000)

screenWidth = int(cap.get(3))
screenHeight = int(cap.get(4))

line1start = (int(round((screenWidth/2))), 0)
line1stop = (int(round((screenWidth/2))), int(round(screenHeight)))
line2start = (0, int(round((screenHeight/2))))
line2stop = (int(round((screenWidth))), int(round((screenHeight/2))))

landingcirclepx = 20

while(True):
    ret, frame = cap.read()

    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)

    corners, ids, rejectedImgPoints = aruco.detectMarkers(gray,
ARUCO_DICT, parameters=ARUCO_PARAMETERS)

    #for corner in corners:
    #    print('Corners: {}'.format(corner))

    frame = aruco.drawDetectedMarkers(gray, corners,
borderColor=(0,0,255))

    frame = cv2.line(frame, line1start, line1stop, (255,255,255),
2)
    frame = cv2.line(frame, line2start, line2stop, (255,255,255),
2)
    frame = cv2.circle(frame, (int(screenWidth*0.5),
int(screenHeight*0.5)), landingcirclepx, (255,255,255), 2)

    midpoint = (0,0)
    distance = 0

    if corners != []:
        midpoint = 0.5*(corners[0][0][0]+corners[0][0][2])
        midpoint = (int(midpoint[0]), int(midpoint[1]))
```

```
        frame = cv2.circle(frame, midpoint, 2, (0,0,255), 2)
        distance = math.sqrt((midpoint[0] - (screenWidth / 2))**2 +
(midpoint[1] - (screenHeight / 2))**2)

        direction = ""

        #V
        if 0 < midpoint[1] and midpoint[1] < (screenHeight / 2 -
landingcirclepx):
            direction += "V"
        #H
        if (screenHeight / 2 + landingcirclepx) < midpoint[1] and
midpoint[1] < screenHeight:
            direction += "H"
        #R
        if (screenWidth / 2 + landingcirclepx) < midpoint[0] and
midpoint[0] < screenWidth:
            direction += "R"
        #L
        if 0 < midpoint[0] and midpoint[0] < (screenWidth / 2 -
landingcirclepx):
            direction += "L"
        #Mid
        if (screenWidth / 2 - landingcirclepx) <= midpoint[0] and
midpoint[0] <= (screenWidth / 2 + landingcirclepx) and (screenHeight /
2 - landingcirclepx) <= midpoint[1] and midpoint[1] <= (screenHeight /
2 + landingcirclepx):
            direction = "DOWN!"

        if direction == "":
            direction = "Nothing found!"

        print(direction + " " + str(distance))

        cv2.imshow('frame', frame)
        if cv2.waitKey(1) & 0xFF == ord('q'):
            break

cap.release()
cv2.destroyAllWindows()
```

From: <https://student-wiki.eolab.de/> - **HSRW EOLab Students Wiki**

Permanent link: <https://student-wiki.eolab.de/doku.php?id=drones-internal:rpi:scripts:findaruco&rev=1631194325>

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