# Robotik - exercise 4

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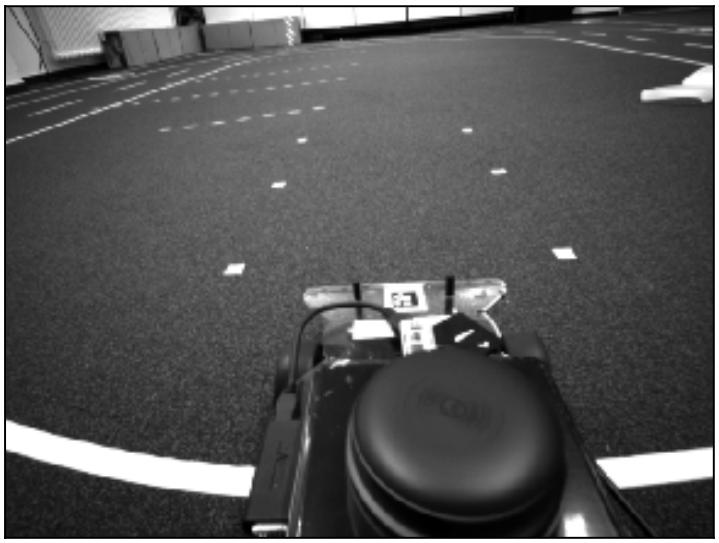
## Assignment 4-1: Field Preparation

original Image



the publisher written to save this image can be found here: https://github.com/evakoumartzi/catkin_ws_GIR

## Assignment 4-2: Camera parameters

intrinsic parameters $f_x, f_y, c_x, c_y$ and distortion coefficients $k_1, k_2, t_1, t_2, k_3$:

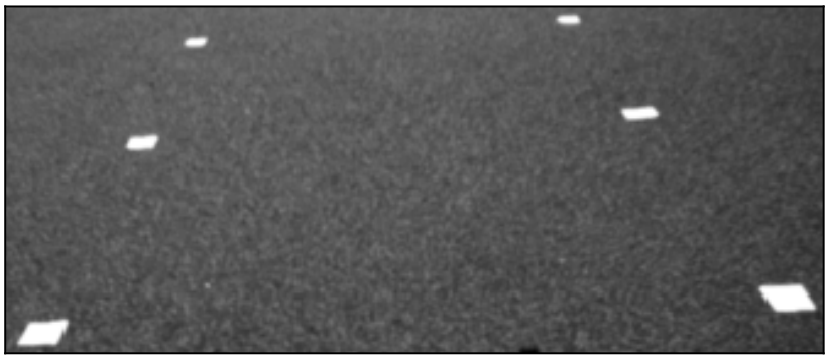
```
intrinsic parameters:
fx =  383.7944641113281
fy =  383.7944641113281
cx =  322.3056945800781
cy =  241.67051696777344

distortion coefficients:
k1 =  0.0
k2 =  0.0
t1 =  0.0
t2 =  0.0
k3 =  0.0
```

the publisher written to gain these parameters can be found here: https://github.com/evakoumartzi/catkin_ws_GIR

## Assignment 4-3: Binary Image

grayscale image cut to interresting area:

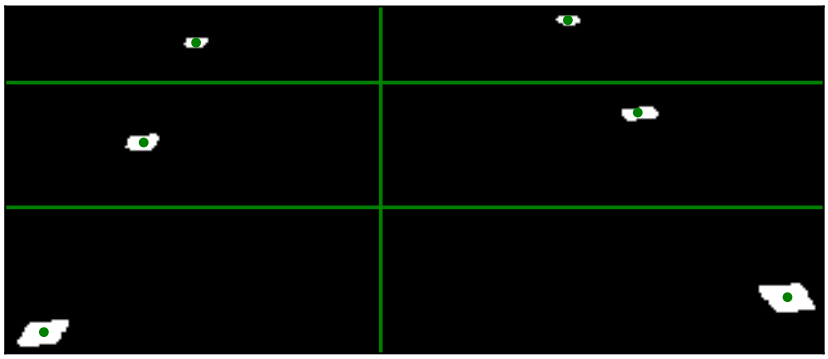


corrosponding binary image:

The python script whith which the transition is done can be found here: https://github.com/evakoumartzi/catkin_ws_GIR

## Assignment 4-4: Find white pixels

cut image with centerpoint of the 6 white areas:



the center points are at:

| x | y |
|---|---|
| 76 | 14 |
| 55 | 54 |
| 15 | 130 |
| 225 | 5 |
| 253 | 42 |
| 313 | 116 |

The python script whith the calculation can be found here: https://github.com/evakoumartzi/catkin_ws_GIR

## Assignment 4-5: Compute the extrinsic parameters

## Assignment 4-6: Finding the camera pose