

Matlab Code Depth sensor

```
1 %processing the image using the depthsensor
2
3
4 %treshhold values
5 min_tresh = 30;
6 max_tresh = 500;
7
8 % get image from depth sensor
9 depth = getsnapshot(depthVid);
10
11 %run the sobel operator
12 shapes = sobel_operator(depth);
13
14 %run the treshhold filter
15 shapes = treshhold(shapes, min_tresh, max_tresh);
16
17 %look at the result
18 image(depth);
19
20 function shapes = sobel_operator(img)
21
22     X = img;
23     Gx = [1 +2 +1; 0 0 0; -1 -2 -1]; Gy = Gx';
24     temp_x = conv2(X, Gx, 'same');
25     temp_y = conv2(X, Gy, 'same');
26     shapes = sqrt(temp_x.^2 + temp_y.^2);
27 end
28
29 function treshholded = treshhold(img, min_tresh, max_tresh)
30
31     matrix_size = size(img);
32
33     MAXROW = matrix_size(1);
34
35     MAXCOLUMN = matrix_size(2);
36
37     for row = 1 : MAXROW
38         for col = 1: MAXCOLUMN
39             if (img(row, col) > min_tresh) && (img(row,
40                 col)< max_tresh)
41                 img(row, col) = 1;
42             else
43                 img(row, col) = 0;
```

```
43         end
44     end
45 end
46 tresholded = img;
47 end
```