

1 Images

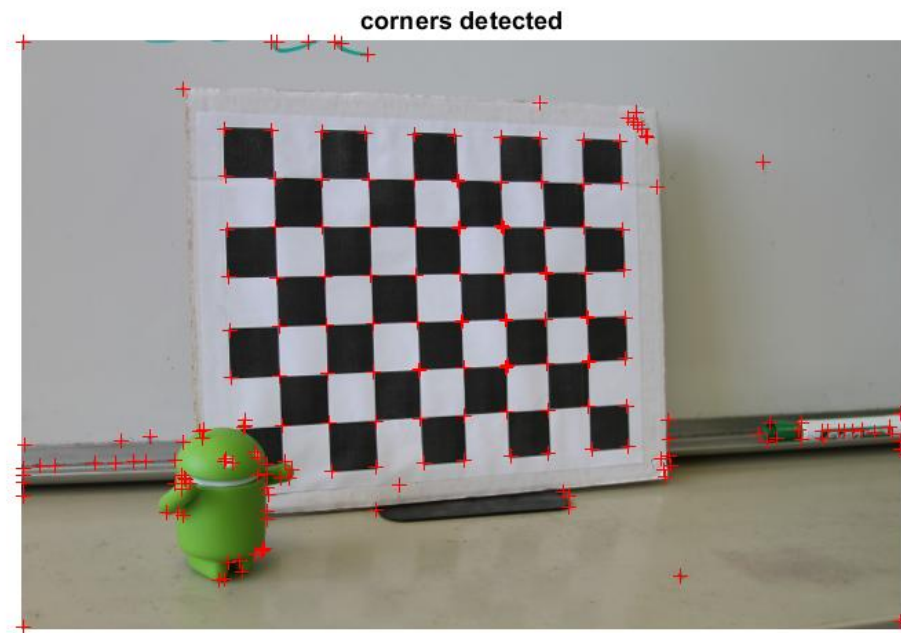


Figure 1: left image with harris detector

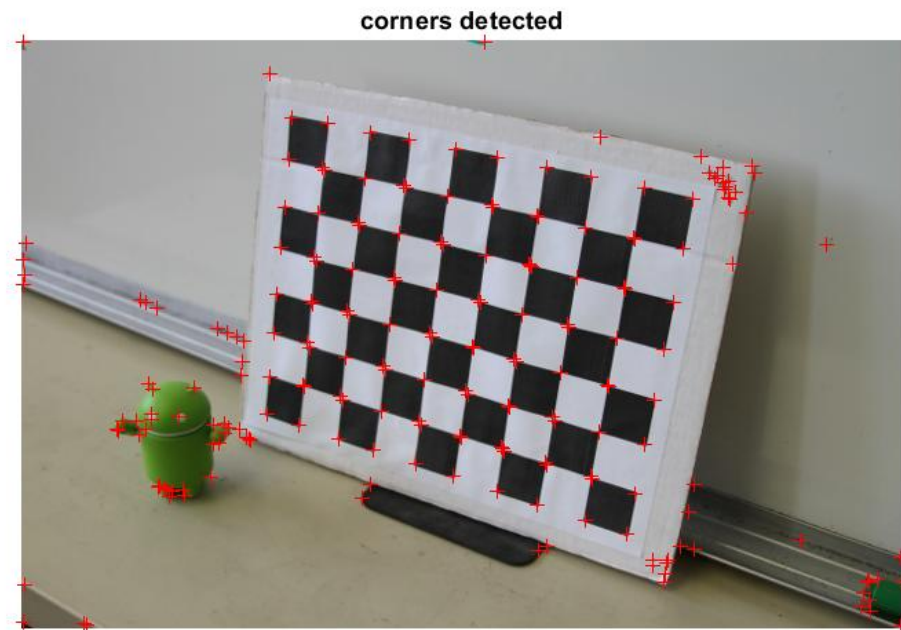


Figure 2: right image with harris detector

2 Code

```
clear;
im1 = imread('left.jpg');
im2 = imread('right.jpg');

%variables
thresh = 300;
radius = 1;
N = Inf;
subpixel = false;
disp = true;
sigma = 1.5;
k = 0.04;

% Compute derivatives and the elements of the structure tensor.
[Ix, Iy] = derivative5(im1, 'x', 'y');
Ix2 = gaussfilt(Ix.^2, sigma);
Iy2 = gaussfilt(Iy.^2, sigma);
```

```

Ixy = gaussfilt(Ix.*Iy, sigma);

[IxR, IyR] = derivative5(im2, 'x', 'y');
Ix2R = gaussfilt(IxR.^2, sigma);
Iy2R = gaussfilt(IyR.^2, sigma);
IxyR = gaussfilt(IxR.*IyR, sigma);

% Compute Harris corner measure.
cim = (Ix2.*Iy2 - Ixy.^2) - k*(Ix2 + Iy2).^2;
cim2 = (Ix2R.*Iy2R - IxyR.^2) - k*(Ix2R + Iy2R).^2;

[r,c] = nonmaxsuppts(cim, 'thresh', thresh, 'radius', radius, 'N', N, ...
    'subpixel', subpixel, 'im', im1);

[r2,c2] = nonmaxsuppts(cim2, 'thresh', thresh, 'radius', radius, 'N', N, ...
    'subpixel', subpixel, 'im', im2);

```

3 Comments

The variables i used for my corner detection was

```

thresh = 300;
radius = 1;
N = Inf;
subpixel = false;
disp = true;
sigma = 1.5;
k = 0.04;

```

I used these variables because it allowed me to detect the most corners in the image. The variables was able to detect the smudge on the white board in both images which is good, because the code would be working as intended. The harris detector was able to accurately find all corners in the checker board in either image. I believe there is still some 'noise' in my image as it places markers in places I would not believe are corners, but there are markers in all the places where corners can be. I could possibly try to reduce the noise, but the harris detector might not find all the possible corners. I would rather have it give more points than necessary than not enough points.