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## Q2e

### DESCRIPTIVE TEXT

```
data = getData([], 'test','list');
ids = data.ids(1:3);

for i = 1:3
    imdata = getData(ids{i}, 'test', 'left');
    im = imdata.im;

    %add three detection's ds into one ds for easier comparsion
    car_ds = imdata.car.ds;
    person_ds = imdata.person.ds;
    cyclist_ds = imdata.cyclist.ds;
    ds = [];
    if ~isempty(car_ds)
        ds = [ds;car_ds(:,[7 8 9])];
    end
    if ~isempty(person_ds)
        ds = [ds;person_ds(:,[7 8 9])];
    end
    if ~isempty(cyclist_ds)
        ds = [ds;cyclist_ds(:,[7 8 9])];
    end
    calib = getData(ids{i}, 'test', 'calib');
    disp = getData(ids{i}, 'test', 'disp');
    disparity = disp.disparity;
    f = calib.f;
    fT = f*calib.baseline;
    depth = fT./disparity;
    pleft = calib.P_left;
    [K, R, t]= KRt_from_P(pleft);
    Px = K(1,3);
    Py = K(2,3);

    % inbox store all the pixel inside boundary box
    inbox = imdata.inbox.inbox;
    if inbox == 0
        inbox = im;
    end

    %loop all the pixels inside boundary box
    for y = 1:size(inbox(:, :, 1), 1)
        for x = 1:size(inbox(:, :, 1), 2)
            if and(and(inbox(y,x,1) ~= 0, inbox(y,x,2)
~=0), inbox(y,x,3) ~= 0)
                camera_Coor_Z = depth(y,x);
                camera_Coor_X = (camera_Coor_Z.*(x - Px))./f;
                camera_Coor_Y = (camera_Coor_Z.*(y - Py))./f;
            end
        end
    end
end
```

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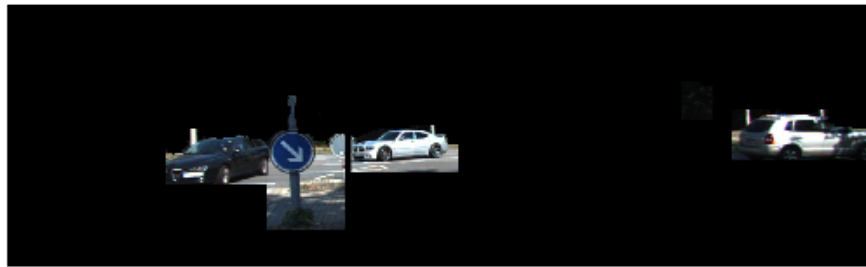
```

        camera_Coor = [camera_Coor_X camera_Coor_Y
camera_Coor_Z];
        world_Coor = (camera_Coor - t)/R;
        %use euclidean distance
        if min(pdist2(world_Coor,ds)) > 15
            inbox(y,x,:) = 0;
        end
    end
end
end

figure;imshow(inbox);

end

```



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