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Assignment 3 - Very elementary level help needed

Shakti Dhar Sharma Week 3 · 7 days ago

Assignment 3. I have the $x1_{occ}$ and $x2_{occ}$ values. I have $i1_k$, $i2_k$ as well.

1. I am slightly (well, very much) confused how should I update the mymap var... Should it be `mymap(i1_k, i2_k) = true` or `false`? 2. I understand the part about lo_{occ} and lo_{free} values. How are these max and min values to be used?

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Bhoram Lee Teaching Staff · 7 days ago

Hi Shakti,

Once you have indices of occupied measurements and free measurements, you may do the following: (Sorry I'm using different symbols.)

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0) Let (ix, iy) be the indices occupied measurement cells, and (ix_f, iy_f) be the indices free measurement cells. You may want to change them into 1D indices as:

```
occind = sub2ind(param.size,iy,ix);
```

```
freeind = sub2ind(param.size,iy_f, ix_f);
```

*Note that myMap(some_y_range, some_x_range) will access the full 2D grid of size |the_y_range| x |the_x_range|.

1) Update the map

```
myMap(freeind) = myMap(freeind) - lo_free;
```

```
myMap(occind) = myMap(occind) + lo_occ;
```

2) Saturate the values (--> this step prevents the map from having very large/small probability. We want some uncertainty to exist.)

```
myMap = min(myMap,lo_max);
```

```
myMap = max(myMap,lo_min);
```

Thanks. Let me know if you need more info!

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Shakti Dhar Sharma · 7 days ago

@Bhoram

Thank you. I am sure this will do.

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Swarnava Pramanik · 7 days ago



Can anyone please suggest why I'm getting occupied cells only in 0 and 1, because of this the sub2ind fails ? For the grids hit as suggested in the lecture I'm taking the range values multiplying with the cosine and the sine values of the scanAngles and pose(3,j) and then adding the pose(1:2,j) values to the result.

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Shakti Dhar Sharma · 7 days ago



Maybe you are not adjusting and recalculating the new grid indexes and always working from same origin. Just a guess. There are so many ways I created my own mess, but this one I sorted out by adjusting and recalculating.

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Shakti Dhar Sharma · 7 days ago



Ok,

It's a bit strange.

% This looks wrong but makes through to the grader.

```
[freex, freey] = bresenham( x1+ myorigin(1), x1 + myorigin(1),  
indexes(1), indexes(2));
```

% The one below doesn't pass the grader

```
[freex, freey] = bresenham( x1+ myorigin(1), x2 + myorigin(2),  
indexes(1), indexes(2));
```

Effectively, if I give the same x, y points to bresenham, I pass, otherwise I don't.

Am I reading the function correctly or I am missing out on something very basic?

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Shakti Dhar Sharma · 7 days ago



I cleared it, and understood the problem as well. It seems as long as we reach a perfect situation, any thing less is just an error, varying by some degree.

The above issue is not a a bug, just a discrepancy because of the data range. I was just getting lucky by using the x, y values... Actual problem lied somewhere else.

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Bo Zhou · 6 days ago

Hi, I am confused how to find the indices of the occupied cells and how th occupied cells are computed.

I firstly do `lidar_local = [ranges(:,j).*cos(scanAngles+pose(3,j))
ranges(:,1).*sin(scanAngles+pose(3,j))]+ repmat(pose(1:2,j)',size(ranges,1),1`

then `ind = ceil(25*[lidar_local(:,1)-min(lidar_local(:,1)),lidar_local(:,2)-
min(lidar_local(:,2))]);` But here I find it has 0 index.

I use the function `bresenham` to find the indices of the free cells.

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Syed Zille Hussnain · 6 days ago



Bo Zhou, you dont have to compute the coordinate locally. Just use the same formula as given in PDF assignment in section 2. Prerequisites and 2.1.

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