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(/learn/robotics-motion-planning/discussions?sort=lastActivityAtDesc&page=1&q=DijkstraTorus%20neighbor)

MR (/learn/robotics-motion-planning/profiles/c2bd07022a1a60876a5e19e26a1a2aab)

a strange bug

Michael Rolnik Configuration Space (/learn/robotics-motion-planning/module/EDk8Q/discussions) · 6 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ)

Hi all,

I implemented both functions, when I run the test routine it works fine, however when I run sibmit I get the following. How can I debug it?

thanks.

Matrix dimensions must agree.

Error in evaluate

Error in submit (line 3)

evaluate();

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Troy Woo · 6 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/W1mBndYjEeWU5gr3hvdX9Q)

Meh...it is like what I got from the last assignment. I was wrong after all. Likewise, this is probably your mistake.

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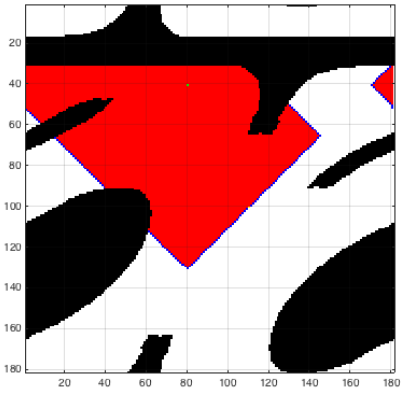
MR (/learn/robotics-motion-planning/profiles/20c03a4a220dd653aae9056624fceeac)

Michael Rolnik · 6 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ)

how to debug it? the image seems to be ok.



Help Center

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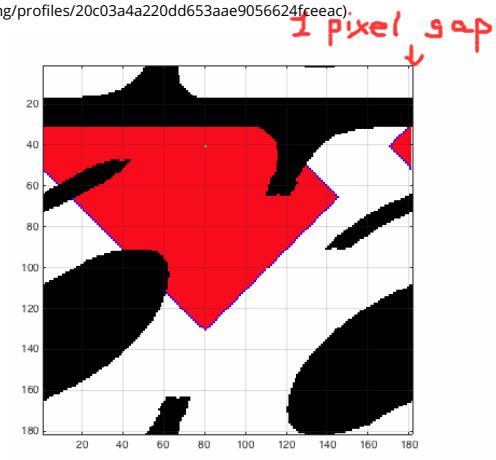
Troy Woo · 6 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/1poOr9YxEeW9ug73QL_FVQ) · Edited

Isn't that obvious?



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Troy Woo · 6 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/6Nm6INYyEeWA6BIeMfBWVQ)

;-) When the face is a prune, then action goes....

MR Michael Rolnik · 6 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/QYJtXNY3EeW01g7o8S6alw)

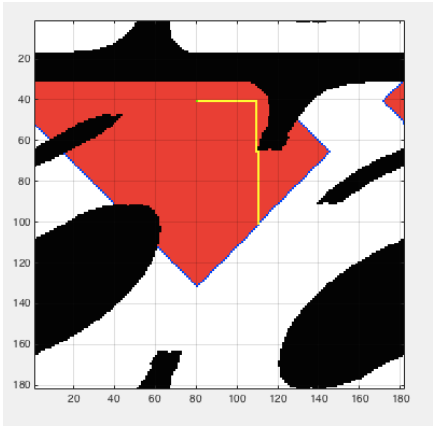
thanks. it helped.

Troy Woo · 6 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/vyvOvtY4EeWrJhKRHKXGQw)

@Lea It's your toner, probably...

Romain Jacotin · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/BySUv9i7EeWA6BIeMfBWVQ)

Hi guys, i still have 0/15 on the DijkstraTorus test and i don't understand why ... Any thoughts ? Here's my screenshot with my Djikstra's route path in yellow)



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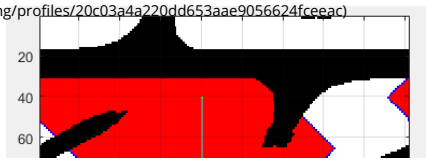
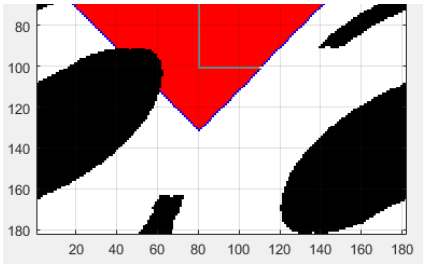
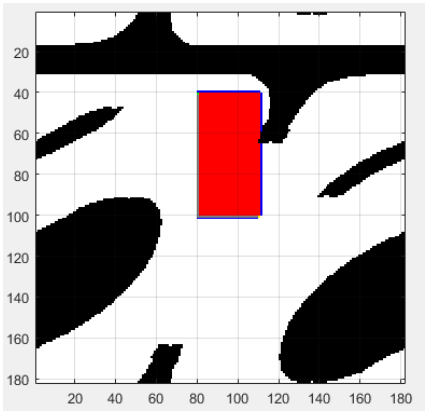
Troy Woo · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/53SUO9jCEeWlkRK6P5OGjQ) · Edited

You probably have a wrong update of your parent. By the way, you have a weird red color...





This is A*, but I'm not sure if it will pass or not.



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SS (/learn/robotics-motion-planning/profiles/a7c561c0a88809f29cfea9ad763bf8a2) Siddharth Srivatsa Teaching Staff · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/q_DpPdjEEeWOeA4jiPAy1w)

Hi Troy!

For this assignment, we only check if the correct route is returned without any collisions. Since Astar and Dijkstra return the same route, it should pass. Great job on the Astar!

▲ 0 Upvote

Troy Woo · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/xfHx99jGEeWOeA4jiPAy1w)

Thanks for your confirmation. Had to do the Astar...there seems to be a competition on the forum. I even tried GJK distance over the triangle_intersection...but bad luck there...Minkowski sum gives too many vertices.

▲ 0 Upvote

Romain Jacotin · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/dg26v9jLEeWx_BI9PC2FcQ)

Troy, I am using GJK for triangle intersection, and for information a very "naïve" bounding box collision detection algorithm is OK to pass the test 1 with 15/15, even if it gives an imperfect configuration space ... ;-)

▲ 0 Upvote

Troy Woo · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/Abqot9jSEeWA6BIeMfBWVQ) · Edited

My point is not that GJK doesn't work (the map I got from using GJK is identical to the correct one), but that it is slow (I followed the original paper, without Cameron's hill climbing mechanism). It is not worth it in the simple case of two triangles---the Minkowski sum has 9 vertices. It is only safe (without checking affine independency) to start with a 1-simplex instead of a 2-simplex. In the worst case, you have to iterate 7 times. The additional checking is going to bring it even slower. The enhanced version is unlikely to improve much for this simple case. In comparison, the edge separation method is incredibly fast even without C implementation. The only way to possibly make GJK faster is to modify the parent function CollisionCheck.m to consider general convex sets (in which way you don't need to break things down to triangles).

The point is, we don't really need to compute the distance to determine collision, and when there is some special property such as with the triangles, we should always exploit it.

▲ 0 Upvote

Troy Woo · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/rzBNWdiVEeWwoQrbIHhKaQ)

(/learn/robotics-motion-planning/profiles/20c03a4a220dd653aae9056624fceeac)

And by the way, I'm just curious, are you really using a lot of R at HP?

▲ 0 Upvote

Romain Jacotin · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/ctwXCNjYEeW5pwpGVAgthQ)

(/learn/robotics-motion-planning/profiles/632ccdbc0cb648a6f26cc7f5c2303199)

I learn R after i left HP 2 years ago, i was an HP networking pre-sales (switches, routers, WiFi, SDN).

▲ 0 Upvote

Romain Jacotin · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/YN6Vp9jdEeW01g7o8S6alw)

(/learn/robotics-motion-planning/profiles/632ccdbc0cb648a6f26cc7f5c2303199)

Troy, my red is same as yours with Djiskra, i don't understand what part is weird ...

And I think that my route length path is not longer than yours, and it doesn't have any collision, so it MUST be a correct path, no ?

What length is your route ?

```
>> size(route,2)

ans =

91
```

▲ 0 Upvote

Troy Woo · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/yeQcddjdEeWwoQrbIHhKaQ)

(/learn/robotics-motion-planning/profiles/20c03a4a220dd653aae9056624fceeac)

Haha, this has just proved the grader has a inflexibility. But I wonder why your path shifted a little bit.

▲ 0 Upvote

Romain Jacotin · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/sDZKcdjgEeWwoQrbIHhKaQ)

(/learn/robotics-motion-planning/profiles/632ccdbc0cb648a6f26cc7f5c2303199)

Troy, the only part of code provided for this course than can alter the result is the way **Matlab for Mac OS X** implements the "min" function, because this function chooses what is the next visited cell.

Troy, please can you specify me what is your Matlab version and what is your OS ?

```
>> version

ans =8.6.0.267246 (R2015b)
```

And can you also specify **the first 5 visited cell with Djikstra implementation** (not with your A* of course) when running "TwoLinkCSpace" script by removing the ";" at the end of the line and add the "keyboard" word in your DijkstraTorus.m code please ? Just to make sure that the "**min(distances(:))**" function return the same thing in both implementation :

```
% Find the node with the minimum distance
[min_dist, current] = min(distances(:))
keyboard
```

Here is my first 5 visited cells output :

```
...
179 of 181
180 of 181
181 of 181

min_dist =     0
current =       14339

min_dist =     1
current =       14158

min_dist =     1
current =       14338

min_dist =     1
current =       14340

min_dist =     1
current =       14520
```

▲ 0 Upvote

Troy Woo · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/8dO01NjiEeWOeA4jiPAy1w) · Edited

(/learn/robotics-motion-planning/profiles/20c03a4a220dd653aae9056624fceeac)

```
8.5.0.197613 (R2015a)
```

```
min_dist =     0
current =       14339

min_dist =     1
current =       14158

min_dist =     1
current =       14338

min_dist =     1
current =       14340
```

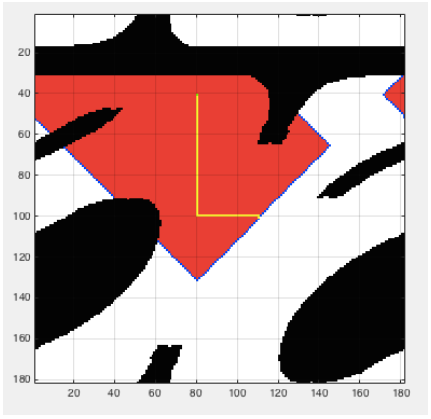
```
min_dist =     1
current =       14520
```

▲ 0 Upvote

Romain Jacotin · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/pAkV9djkEeW17wrgkMLDIQ)

(/learn/robotics-motion-planning/profiles/632ccdbc0cb648a6f26cc7f5c2303199)

Thank you very much Troy for your help, in fact just before your last post i find my mistake: when i decid to visit the 4 neighbors cells i don't verify if they were already marked as next to be visited (map(row,col) == 4). By adding this missing test, then i have the same behavior as you now :



But in fact i still think that the other route is still correct and that technical staff may change their evaluation tools to take this other possibility ...

PS: Need now to finish week 3 before friday because i go skying next week ;-)

▲ 0 Upvote

Troy Woo · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/me2yDNjlEeWx_BI9PC2FcQ)

(/learn/robotics-motion-planning/profiles/20c03a4a220dd653aae9056624fceeac)

Your result is still not the same as mine XD, it differs by one pixel.

Well....you got your marks already, so good luck with your week 3.

▲ 0 Upvote

Romain Jacotin · 3 days ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/oczPMNjmEeWQzA7MOZsNDQ)

(/learn/robotics-motion-planning/profiles/632ccdbc0cb648a6f26cc7f5c2303199)

In fact, still have 0/15 for test 2, still have an error, will chase this vertical one cell shifting ... Thank you again Troy.

▲ 0 Upvote

Chris Fotache · 12 hours ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/9vP0-dqaEeWu-hLGc64CMw)

(/learn/robotics-motion-planning/profiles/86a35c9b941167fdb38e8f993c47824e)

Romain - I have the same issue... getting 0/15 but I noticed, like you, that I'm wrong by one cell. Wondering if you found the cause....

▲ 0 Upvote

Romain Jacotin · 13 minutes ago (/learn/robotics-motion-planning/discussions/kxlttdYhEeWlkRK6P5OGjQ/replies/5n20PtYwEeWx_BI9PC2FcQ/comments/4lTe5tr6EeWvQApnPuJSmw)

(/learn/robotics-motion-planning/profiles/632ccdbc0cb648a6f26cc7f5c2303199)

Hi Chris, in fact i tried to make a "negative" logic test to decide when I DO NOT WANT to choose a cell to be "on list", and that way of thinking lead me to a bad logic test with extreme cases that were badly handled...

In fact, it is more simpler and efficient to think in a "positive" logic test to decide when I DO WANT to choose a cell to be "on list". This "positive" logic test in fact already exist in the nested "update()" function written at the end of the "DijkstraTorus.m" file, but i missed it ...

▲ 0 Upvote

SD (/learn/robotics-motion-planning/profiles/f34069ce8df6de7dbebfedfb7e760d9f)

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1

SD (/learn/robotics-motion-planning/profiles/f34069ce8df6de7dbebfedfb7e760d9f)

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