

Midterm question 7

November 1, 2022

RRt star produced the lowest path on average, however it did keep on failing, even when I increased the iteration count, so in the end I tested it 13 times instead of ten, since it failed three times. The one that produced paths the fastest was the A star planner from the medium article. However I did my best to keep the size of environment the same, however i may have made a mistake with the scale.

To make my planner faster I'd try and improve the heuristic, however the challenge there would be the trade off between speed and accuracy, it all depends on the situation that the robot will be using this planner in.

The best planner overall appears to be the A star planner. It produces paths that cost slightly more then similar planners like the depth and RRt, however it is significantly faster. However in a complex environment, where time isn't too much of a factor then RRt might be the best as it produces the paths with the least cost.

Table 1:

	My A-star	A-star	Bidirectional A-star	RRT-star	depth first search	dijkstra
Time	2:36	9:27	4:44	1:24:42	6:74	15:36
Cost	452.13	1129.91	546.76	425.88	514.89	1676.42