Implementation of Robot Behaviour Learning Simulator

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Recap from last week.

In our last meeting on Friday, we saw the implementation of dijkstra's algorithm for path planning. The robot was able to follow a trajectory from the start point to the goal.

Today's Agenda

The objectives for our meeting were set to be:

- To make sure the robot follows the same trajectory in $<= 10$ iterations.
- Try to implement other path planning algorithms.
- Try to organize the folder's structure in a way to promote ease of usage by giving the commands in terminal.

Robot's Trajectory in 10 iterations

The robot was able to follow the same trajectory and execute in nearly same time, in the range of 2.3 to 2.7 seconds in the scenario.

Implementing other path planning algorithms.

Path Planning was done with Dijkstra's algorithm[1] in the last week. Two more algorithms were implemented after that. These algorithms were,

- A^* Algorithm. [2]
- GBFS Algorithm (Greedy Best First Search) Algorithm. [3]

Simulations

Let us now see the simulations for GBFS and A* algorithm's implementation. Moreover, I ran these algorithms about 5 times from start to end and I found the same trajectory.

Organizing the folder's structure.

All the modules are organized in a single folder now. As Prof. Mihaela requested in the last meeting, you can now choose the algorithm you wish to implement in the terminal line by launching that specific launch file.

References


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Thank you for your time.