Intro to Artificial Intelligence

Assignment 1

Fast Trajectory Planning

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Introduction

Your introduction goes here! Some examples of commonly used commands and features are listed below, to help you get started.

If you have a question, please use the support box in the bottom right of the screen to get in touch.

Part 1 - Understanding the Methods
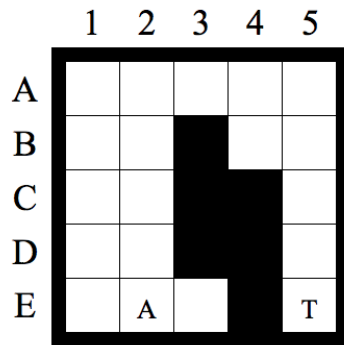
A) - East vs North

Figure 1: Second Example Search Problem

The agent in the figure above begins it's pathfinding without knowledge of which cells are blocked. From the perspective of being able to fully observe the maze, it appears clear that the best path for the agent is to move north to go around the obstacle. However, under the initial assumption that all cells are unblocked the shortest path from the current cell to the target is to move towards the east, as it has a direct path to the target cell. Only once the agent has moved to the cell to the east, will it observe the blocked cells that do not allow it to use that path and force the agent to find a new path to the target.

B) - Proving Completeness

Part 2 - The Effects of Ties

Part 3 - Forward vs Backward

Part 4 - Proving Heuristics in the Adaptive A*

Part 5 - Heuristics in the Adaptive A*

Part 6 - Memory Issues