I. Q-Learning Approach for Agent Movement

In this section we will describe our attempts to use Q-Learning only for the task of moving a single agent in the map, and towards a certain goal point. The idea is to model the map as a very simple MDP , whose state space is comprised of positions in the map, and the goal state is ,for example, one of the control points. After modeling the problem we let the agent learn the best route towards the goal.

why use learning and not planning: we have a simulator of the environment so it easier to run alot of simmulations and let the agent learn, without worrying about walls and generaly the map layout.

1) Model: Model description

2) Results: Model description

3) Extension: Possibility to extend this approach

4) Challenges: problems with this approach