Shiva Shahrokhi

Weekly report

1 My *Objectives* this week: Optimal Solution for the algorithm for two robots positioning using friction

- Compute reachable regions for the optimal solution.
- Write down the code of optimal solution.

2 My *Accomplishments* this week

- learnt more about mathematica, coding and understanding.
- the code for reachable regions for all 4 walls.

The reachable regions with regard to $\Delta x, \Delta y$ is shown here.
For horizontal (top and bottom) walls: $\Delta x \in [r2_x - r1_x - 1, 1]$ and $\Delta y \in [r2_y - r1_y, 0]$.
For vertical (right and left) walls: $\Delta x \in [0, r2_x - r1_x]$ and $\Delta y \in [-1, r2_y - r1_y + 1]$.
This figure shows the snapshot of the reachable sets:

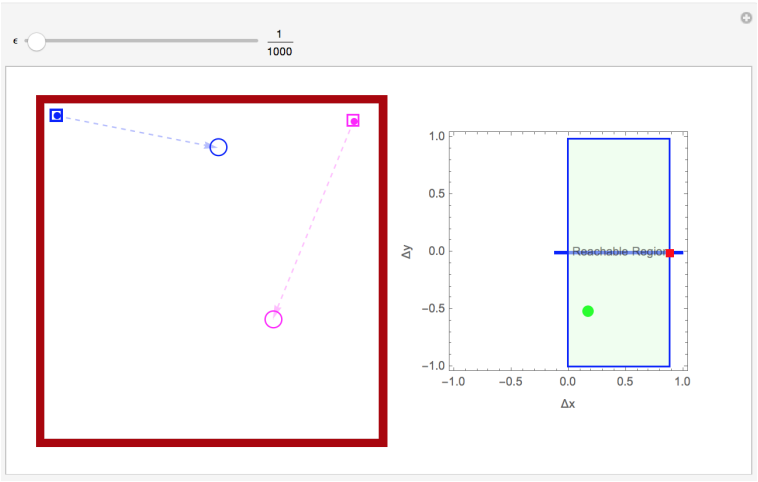

Figure 1: The two rectangles shows the reachable sets of the robots.

3 My *Plan* for next week

- complete the dynamic programming part of the new solution. Is this possible to get to the goal with 5 moves? Can we get near to the optimal solution by our current idea?
- write down the new algorithm if it worked and was optimal, and make the first draft for IROS.
- have fun with kilobots for the outreach on Saturday!

3.1 Meeting with Dr. Becker

- Get help on the implementation of the algorithm to make sure it is ok.

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