Lab 3 : Motion Planning with a 6-DOF Manipulator

Latent Space Explorers
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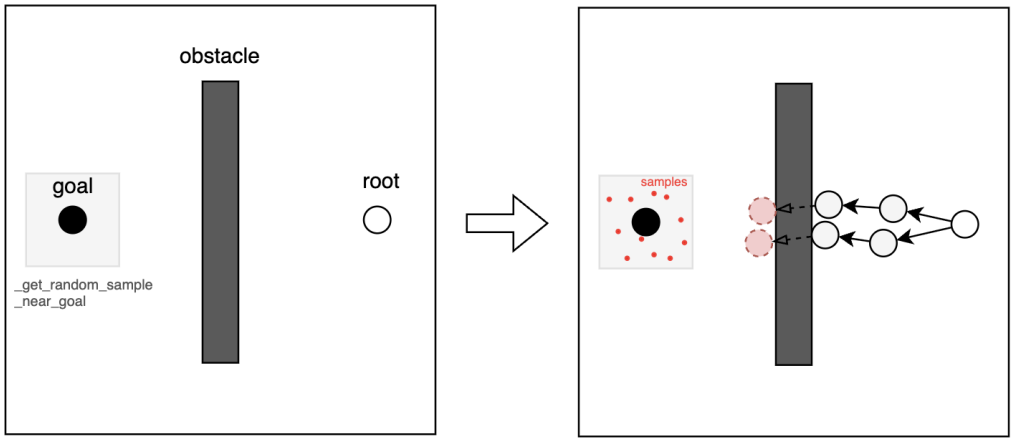
1. Main Implementation

1.5.

If we reduce ϵ to 0.2 without the new method, the RRT would fail to terminate within 10000 steps. However, when the new method is integrated into the algorithm, it can be finished in a reasonable time. With ϵ being reduced to 0.2, both the position and direction of end effector are much closer to the target.

1.6.

If we set the probability of calling the new method to 1.0, then the points would only be sampled in a small region near the goal, and that would keep the RRT from exploring the space and limit the exploration in a narrow direction. As a result, it would fail to find a path to the goal sometimes even if the path should exist. The following figure shows an example in 2D space.



2. Additional Questions

2.1. Resources Consulted

(1) No
(2) No
(3) No

2.2. Team Contributions

Yi-Chieh Chiu: 33%
Michael Gu: 33%
Jinmin Lee: 33%