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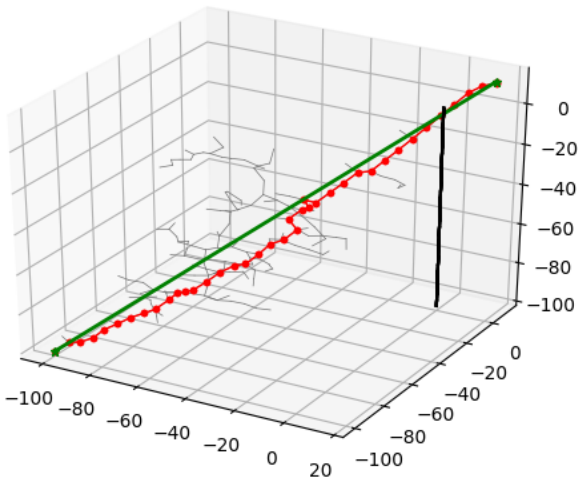
Open AI's Gym – Robotics Environment

FetchPush-v1

Implementation

- **Implemented 3-Dimensional RRT in a 3D space.**
- **Initiated the space with start and goal location.**
- **Fed the obtained path to the OpenAI's Gym and made the end effector follow both the extend and connect version of RRT.**
- **Observed the path followed by the end effector in the space with and without obstacle.**
- **Computed the total cost of both extend and connect path for spaces with and without obstacles.**
  NOTE: Could not change the location of red sphere to goal position.

3D-RRT WITHOUT OBSTACLE [The space considered is big]



Cost	
Smoothened Path	19.486 units
Actual Path	327.238 units

Link: https://drive.google.com/open?id=1TqXsfVMyChbIPXuQL2__DRa4Z6LPSBGy

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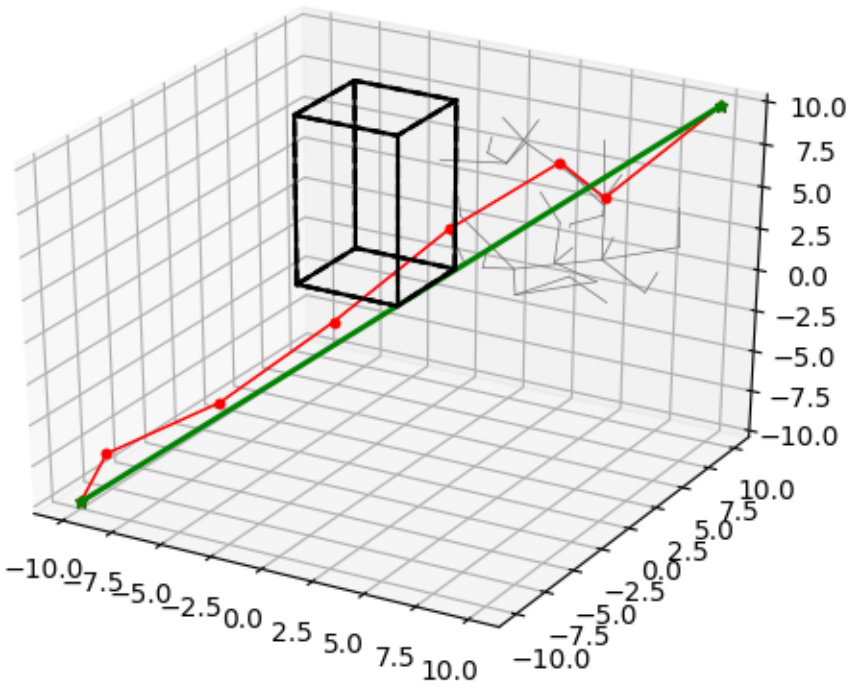
3D-RRT WITH OBSTACLE [The space considered is small]



Cost	
Smoothened Path	19.05 units
Actual Path	26.07 units

Link: https://drive.google.com/open?id=1AwZH6pO52UeOKnAc_CwSn__bzuK1S6nR

Resources:

[1] https://github.com/mohamedbanhawi/RRT – RRT implementations obtained and modified.
[2] https://arxiv.org/pdf/1802.09464.pdf – OpenAI Robotics Environment information obtained.