

15494 Cognitive Robotics Lab 5

Problem 1

Would Say 'I can not go there' if goal collide. If the path plan success, it would go to destination, which is (300,50,50) and say 'complete'.

Problem 2

- **Detecting first door**

Cozmo would keep turning and detecting doors until it detect one.

- **Passing first door**

While Cozmo detect a door, it would post a door to DoorPass. Then, simply go through that door via DoorPass.

- **Detecting second door**

This is a little bit different from detecting first door. In addition to keep turning and detecting, Cozmo need to move backward from second door so it is far enough to see two tags at a same time and construct a door. Also, it has to avoid passing doorways it has visited.

I maintain a list called *walk_through* to record doorways that has already visited. This avoid Cozmo go back from same door. I also constructs another state node call *SeeAruco*. *SeeAruco* can post completion if Cozmo see a Aruco tag, and that tag does not belong to *walk_through*'s doorways. If *SeeAruco* completion is detected, Cozmo would move backward before keep turning and detecting doorway. This allows Cozmo to keep moving further from second door, and detect it.

- **Passing Second door**

Same as passing first door, simply post and receive doorway data, then use DoorPass.

- **Result videos**

Doorway40->Doorway46: <https://drive.google.com/file/d/1bZGeghDvviUuYtGyDG4IARe5Abd4VUoz/view?usp=sharing>

Doorway46->Doorway40: <https://drive.google.com/file/d/1STK8LPpCaJnrTYE6jWRQ-RfPG-cZK3xu/view?usp=sharing>