

ABSTRACT

The need for robots is increasing as they help to increase efficiency whether for industrial purposes or service purposes. For an autonomous robot in particular, path planning is essential as the robot needs to navigate its surroundings and find a path that leads to the goal location. In the case where the robot has to visit different target points, Travelling Salesman Problem is utilized to find the shortest possible path that go through all points exactly once. Many available heuristics can be used as a solution, and in this thesis the Nearest Neighbor algorithm is used to generate the path that the robot takes. The proposed algorithm will be tested in CoppeliaSim as the simulation software, where robot's behavior is studied under different scenarios.

Keyword: autonomous robot, path planning, Travelling Salesman Problem, Nearest Neighbor, CoppeliaSim