

Figure 1: Obstacles

Algorithm	Time	Length of Path
Wavefront with BFS	1.593567	
sPRM with Astar	0.743614	3
PRM with Astar	0.91360	7
RRT	1.011784	12

1 Computational Complexity

As seen from the result in the table for time complexity, it can be seen that the computational complexity of sPRM is the lowest followed by PRM and followed by RRT. Wavefront with BFS for finding the path is the most complex of all the algorithms.

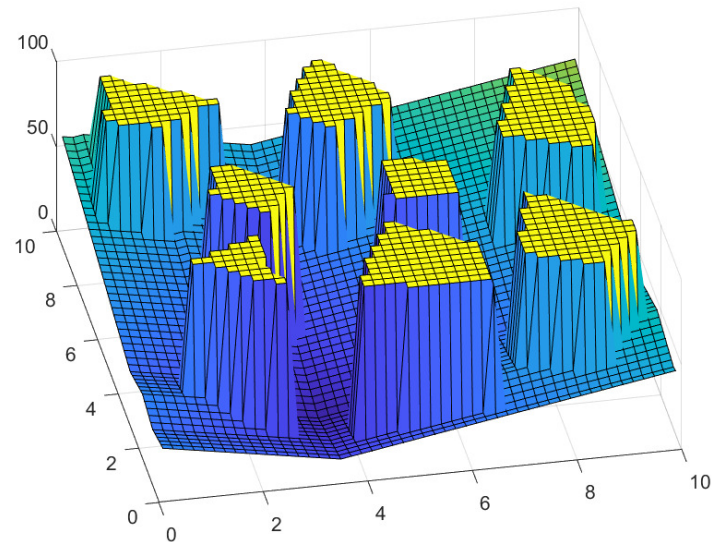


Figure 2: Wavefront

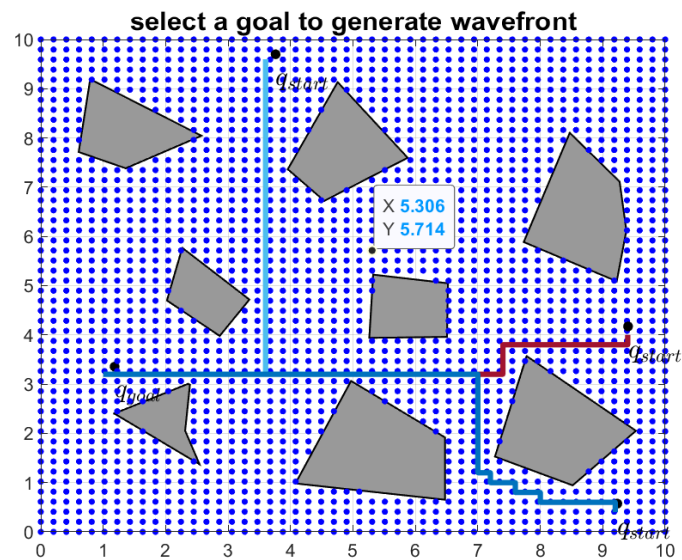


Figure 3: 3d representation of wavefront with obstacles

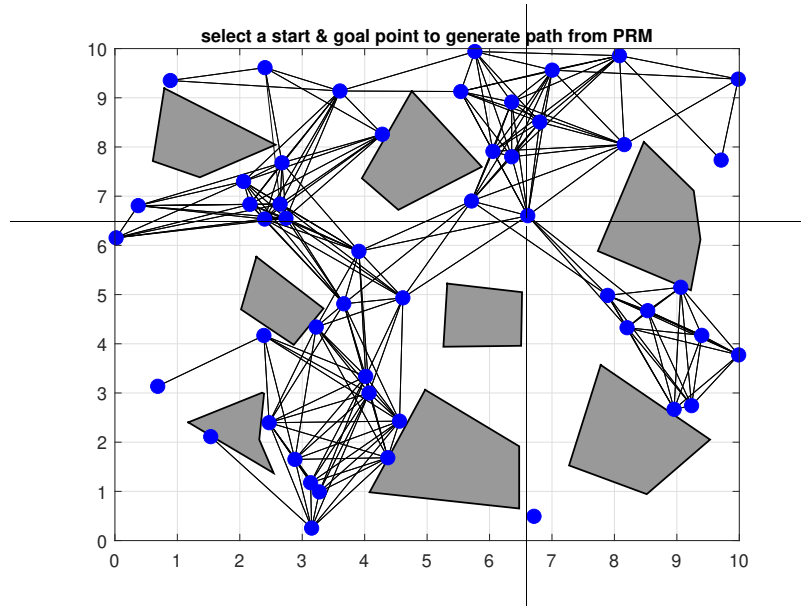


Figure 4: Probabilistic RoadMap (PRM)

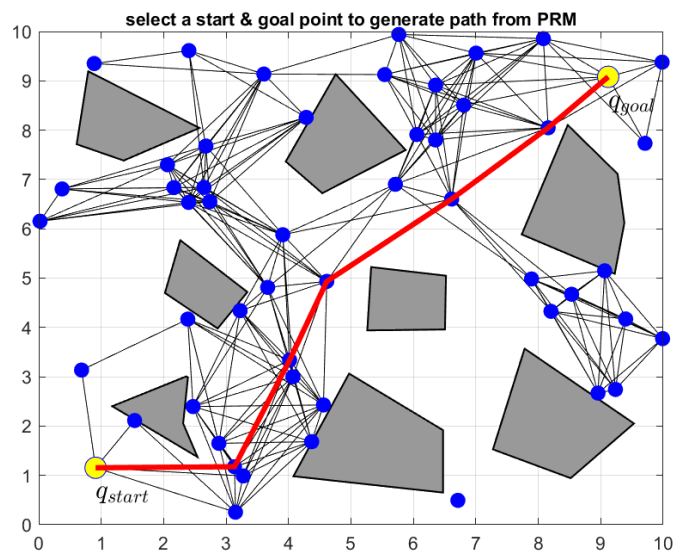


Figure 5: Astar Path from Start to Goal on PRM

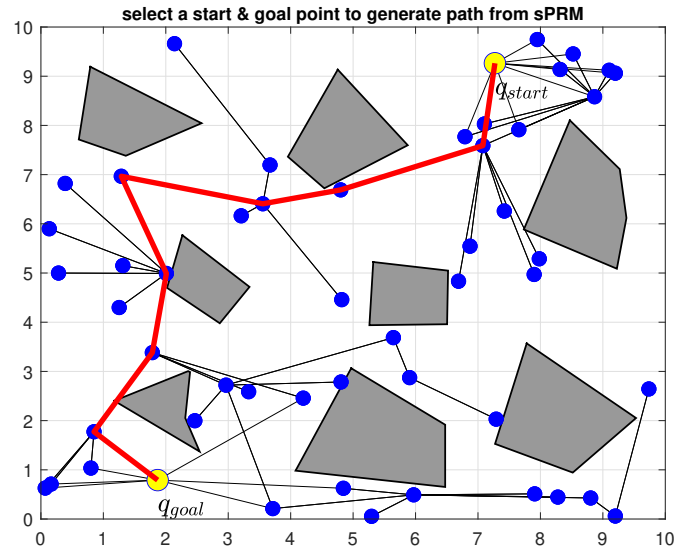


Figure 6: AStar Path from Start to Goal on sPRM

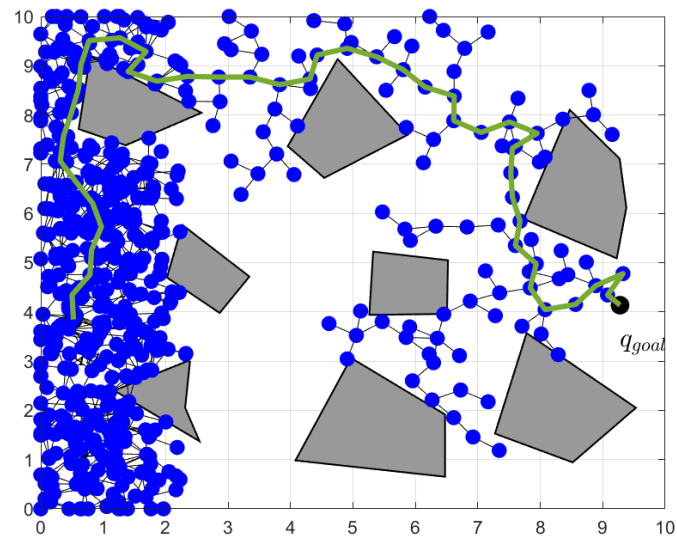


Figure 7: RRT Trees

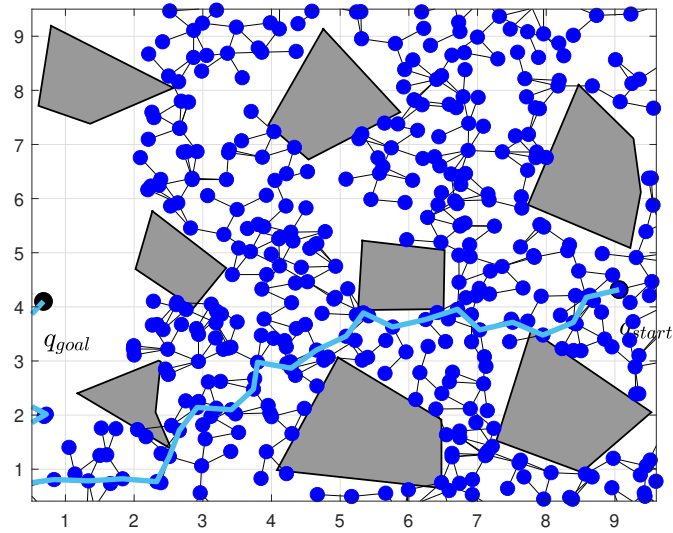


Figure 8: RRT Trees with Path (Example 1)

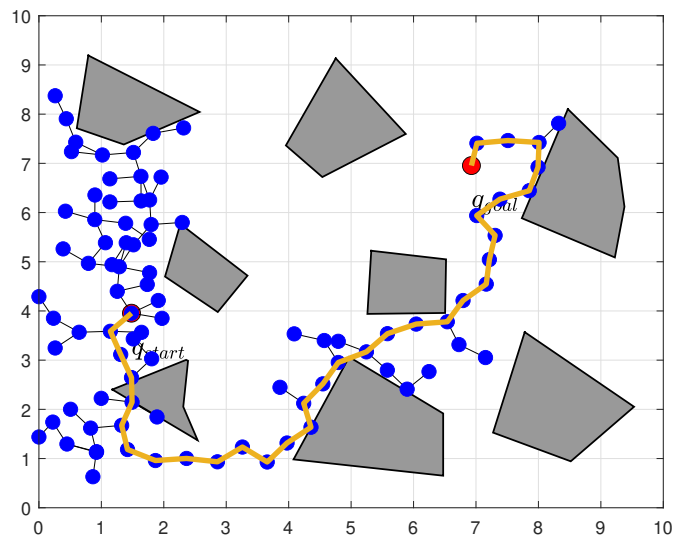


Figure 9: RRT Trees with Path (Example 2)

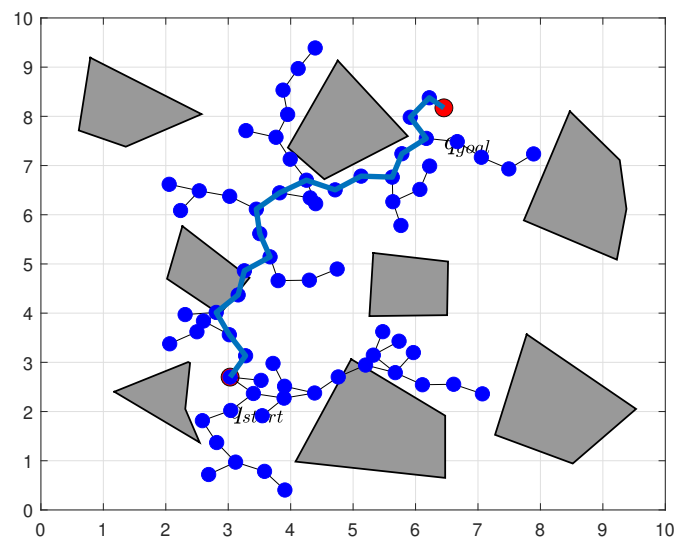


Figure 10: RRT Trees with Path (Example 3)