

Template of Report for PDM course

Group Names

Abstract—Keep short - the whole paper shall not exceed four pages plus references (Strict).

I. INTRODUCTION

Objective: Navigation of a quadcopter in a dynamic environment with multiple obstacles moving in a random motion. Obstacles are represented by cylinders which may represent people moving around in an indoor environment.

Assumptions: The instantaneous state of the system, including instantaneous positions and sizes of all obstacles, is available to the motion planning algorithm.

Procedure:

- 1) Start with a vanilla RRT^* algorithm that generates the trajectory in a static environment. Then make the quadcopter follow this path using an off the shelf control algorithm.
- 2) Implement different flavours of the RRT algorithm for dynamic environments.
- 3) Compare these algorithm on the basis of their compute time and the path length.

Questions: Should we search for the optimal path in the 3D World space or the 6D C-Space of the robot or 12D Position + Velocity space?

II. ROBOT MODEL

1/2-1 page

III. MOTION PLANNING

1/2-1 page

IV. RESULTS

1 page

V. DISCUSSION

1/2-1 page

REFERENCES

- [1] Example, Example bibliography, The bibliography: A great example, 1st ed. vol. 1, Delft, 2019, pp. 1-2