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.
2) Sampling is done from a 12D C-space (Position, Velocity) taking the kinodynamics of the rotor into account.
3) Then make the quadcopter follow this path using an off the shelf control algorithm.
4) Implement different flavours of the RRT algorithm for dynamic environments.
5) 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

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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