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**Online Trajectory Planning of multiple fleets of robots  
using Model Predictive Control**

Jury

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**Abstract**

**Acknowledgements**

**Notations**

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# Introduction

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# Basics of Path Planning

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## 1.1 Preliminaries

## 1.2 Discrete Space Planning Algorithms

## 1.3 Planning with Differential Constraints



# Multi-Agent Path Planning

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## 2.1 Graph Search Methods

### 2.1.1 $M^*$

### 2.1.2 Preliminary Concepts

## 2.2 Continuous optimization schemes

## 2.3 Planning with time offsets

## 2.4 Velocity Profile Methods

## 2.5 Collision Avoidance based Methods

### 2.5.1 Nonlinear Model Predictive Control

### 2.5.2 Velocity Obstacle

## 2.6 Spline-based refinement of Waypoints



# Work Outline

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# Conclusion

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