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Institut für Technische und Numerische Mechanik

Wei Luo

Target Trajectory Prediction-based Object Handover in a 3D Heterogeneous Robot System

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Vorgelegt von
Wei Luo
aus Quanzhou, V.R. China

Hauptberichter: Prof. Dr.-Ing. Prof. E.h. Peter Eberhard
Mitberichter: Prof. Dr.-Ing. Qirong Tang

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Preface

The dissertation emerged from my time as a research member at the Institute of Engineering and Computational Mechanics (ITM) at the University of Stuttgart. I am excited to be able to conduct robotics research here. During my time at the ITM, I have learned a lot and gathered many valuable experiences. I am very grateful to everyone who has supported me in various ways.

First and foremost, my heartfelt appreciation goes to my supervisor Prof. Peter Eberhard for advising me and selecting me as one of his excellent researching group members. Without his supervision, helpful guidance and encouragement, this thesis would not have come into existence. I am also pleased that I've given the freedom to pursue my interests in robotics within the scope of my dissertation. Moreover, I am also grateful to Prof. Michael Hanss and Prof. Jörg Fehr, who have provided several constructive comments on my work as well as my research life at the ITM. Besides, I would like to name Dr.-Ing. Pascal Ziegler and Peter Schöler. Without their advice and support in the laboratory, I could not successfully implement all my examinational study at the ITM.

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Stuttgart, February 2023 Wei Luo

Who controls the past controls the future: who controls the present controls the past

– *George Orwell*

天行健，君子以自强不惜；地势坤，君子以厚德载物

–《周易》

(As heaven maintains vigor through movements, a gentle man should constantly strive for self-perfection. As earth's condition is receptive devotion, a gentle man should hold the outer world with broad mind.

– *I Ching)*

Contents

Zusammenfassung XI
Abstract XIII

1 Introduction **1**
1.1 Motivation 2
1.2 Aims and Content 5

2 Target Trajectory Prediction **9**
2.1 Neural Network-based Approach 11
2.1.1 Methods 11
2.1.2 Experimental Setup 16
2.1.3 Simulation Results 18
2.2 Optimization-based Approach Enhanced with Intention Evaluation 22
2.2.1 Intention Evaluation-based Bayesian Path Waypoint Prediction . . 22
2.2.2 Optimization-based Trajectory Prediction 29
2.2.3 Simulation Results 34

3 Time Optimal Handover Trajectory Planning for Aerial Manipulators 41
3.1 Mechanics Fundamentals 42
3.1.1 Continuous-time Mechanics 42
3.1.2 Discrete Mechanics 44
3.2 Discrete Mechanics and Complementarity Constraints (DMCC) Framework 52
3.2.1 Framework Formulation 53
3.2.2 Case Study 54
3.3 Time-optimal Handover Trajectory Planning based on the DMCC Framework 65

3.3.1 Modeling of the Aerial Manipulator 66
3.3.2 Handover Opportunities 69
3.3.3 Simulation Study 72

4 Data-Augmented Model Predictive Control for Quadrotors 81
4.1 Model Predictive Control 82
4.1.1 Nominal Quadrotor Dynamics 84
4.1.2 Numerical Simulation 85
4.2 Gaussian Process Regression-augmented Nonlinear Model Predictive Control 85
4.2.1 Gaussian Process Regression Models 88
4.2.2 Training Procedure 91
4.2.3 NMPC with Augmented Dynamics Model 96
4.3 Software-in-the-Loop (SITL) Simulation 96
4.3.1 SITL Simulation 97
4.3.2 Simulation Results 97

5 Experiments 101
5.1 Arrangement of the Robotic Hardware Systems 101
5.1.1 Mobile Robots 101
5.1.2 Quadrotors 102
5.2 Localization based on the Visual Information 104
5.2.1 Methods 105
5.2.2 Autonomous Object Detection and Tracking System 109
5.2.3 Experiment Results 111
5.3 Target Trajectory Prediction Experiment 115
5.3.1 Experimental Setup 115
5.3.2 Neural Network-based Approach Results 115
5.3.3 Optimization-based Approach Results 119
5.4 Gaussian Process-augmented NMPC Experiment 122
5.4.1 Time-Variant Thrust Loss 127
5.4.2 Trajectory Tracking Performance 129

5.4.3 Static Object Grasping Experiment 131
5.5 Object Handover Experiment 136
5.5.1 Control Framework 136
5.5.2 Experimental Results 137

6 Conclusion and Outlook **143**

Abbreviations, Symbols, and Notation **147**

Bibliography **152**