



NATIONAL TECHNICAL UNIVERSITY OF ATHENS
SCHOOL OF ELECTRICAL & COMPUTER ENGINEERING

SECTOR OF SIGNALS, CONTROL & ROBOTICS

Object-Frame Impedance Control for Dexterous Robotic Grasping

DIPLOMA THESIS

by

Konstantinos P. Vassios

Supervisor: Konstantinos S. Tzafestas
Assistant Professor, NTUA

Athens, January 2013

Abstract

This English document is a translation track of the original Greek diploma thesis. The full English translation can be completed incrementally by editing the *_EN.tex chapter files.

TODO: translate abstract. You can reuse the existing English abstract text from `diplomatiki_Abstract.tex` (lines “Abstract” / “Key Words”) if desired.

Key Words

TODO: translate key words.

Acknowledgements

TODO: translate acknowledgements. This file is the English counterpart of `diplomatiki_euxaristie`

Contents

List of Figures	ii
List of Tables	iii
1 Introduction	1
1.1 Robotics (overview)	1
2 Dexterous Robotic Grasping: A Survey	2
2.1 Problem decomposition	2
3 Modeling & Control Background	3
3.1 Hand modeling	3
4 Implementation & Simulation Results	4
4.1 Simulation environment	4
5 Conclusions & Future Work	5
5.1 Summary	5
Bibliography	5

List of Figures

List of Tables

Chapter 1

Introduction

TODO: translate Chapter 1. This chapter corresponds to kefalaio1_Eisagwgh.tex.

1.1 Robotics (overview)

TODO: translate this section.

Chapter 2

Dexterous Robotic Grasping: A Survey

TODO: translate Chapter 2. This chapter corresponds to kefalaio2_Epideksia_Robotikh_Lavh.tex.

2.1 Problem decomposition

TODO: translate this section.

Chapter 3

Modeling & Control Background

TODO: translate Chapter 3. This chapter corresponds to kefalaio3_Theoritiko_Ypovathro.tex

3.1 Hand modeling

TODO: translate this section.

Chapter 4

Implementation & Simulation Results

TODO: translate Chapter 4. This chapter corresponds to kefalaio4_IPC_Hand_Simulation_Implementa

4.1 Simulation environment

TODO: translate this section.

Chapter 5

Conclusions & Future Work

TODO: translate Chapter 5. This chapter corresponds to kefalaio5_Symperasmata_Epektaseis..

5.1 Summary

TODO: translate this section.

Bibliography