

PhD Thesis

Sapienza University of Rome Dottorato di Ricerca in Automatica, Bioingegneria e Ricerca Operativa -XXXVI Ciclo

Michele Cipriano

ID number 1764645

Advisor

Prof. Giuseppe Oriolo

Academic Year 2023/2024

Thesis defended on TBD May 2024 in front of a Board of Examiners composed by:

Prof. TBD (chairman)

Prof. TBD Prof. TBD

PhD Thesis

Sapienza University of Rome

© 2024 Michele Cipriano. All rights reserved

This thesis has been typeset by LATEX and the Sapthesis class.

Version: January 16, 2024

Author's email: cipriano@diag.uniroma1.it



Acknowledgments

Acknowed gments.

Abstract

Abstract.

Contents

1	1.1 Section	1
2	Literature review	2
3	Humanoid motion generation in a world of stairs	3
4	Feasibility aware plan adaptation in humanoid gait generation	4
5	Nonlinear model predictive control for steerable wheeled mobile robots	5
6	Conclusions	6
A	Feasibility aware plan adaptation in humanoid gait generation	7
В	Real-time nonlinear model predictive control	8

Introduction

Todo. [1]

1.1 Section

Literature review

Humanoid motion generation in a world of stairs

Feasibility aware plan adaptation in humanoid gait generation

Nonlinear model predictive control for steerable wheeled mobile robots

Conclusions

Appendix A

Feasibility aware plan adaptation in humanoid gait generation

Appendix B

Real-time nonlinear model predictive control

Bibliography

[1] Michele Cipriano, Paolo Ferrari, Nicola Scianca, Leonardo Lanari, and Giuseppe Oriolo. Humanoid Motion Generation in a World of Stairs. *Robotics and Autonomous Systems (accepted for publication)*, 2023.