

1<sup>st</sup> year PhD annual evaluation

# Motion Planning and Control for Hybrid Locomotion of Wheeled-Legged Systems

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Tutors: Arturo Laurenzi, Nikos Tsagarakis

Istituto Italiano di Tecnologia, October 10, 2023

# Objectives

prova

prova2

# Objectives

prova

prova1

prova2

# Objectives

prova

prova1

prova2

# SoA and proposed innovation

# Methodology

# Results

# Training

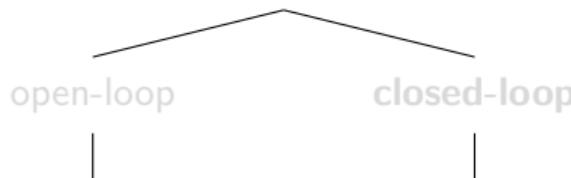
# Publication record

A. Patrizi, F. Ruscelli, A. Laurenzi, and N. G. Tsagarakis, "Optimal design of agile jumping maneuvers for a single leg system," *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2023, Resubmitted to 2023 IEEE-RAS Humanoids conference

A. Patrizi, F. Ruscelli, A. Laurenzi, and N. G. Tsagarakis, "Optimal design of agile jumping maneuvers for a single leg system," *2023 IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, 2023, Accepted.

# Activities

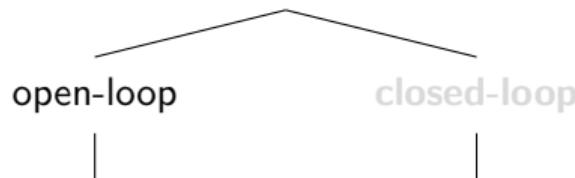
## Model Predictive Control (MPC)



- ▷ no state feedback;  
loop closed on  
first sample of  
solution *roll-out*
- ▷ loop closed  
on state estimates

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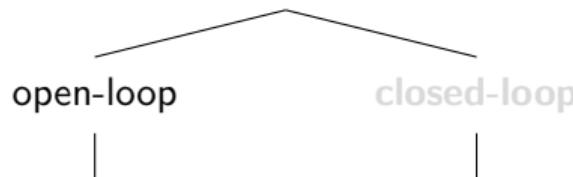
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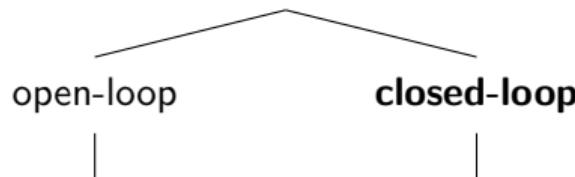
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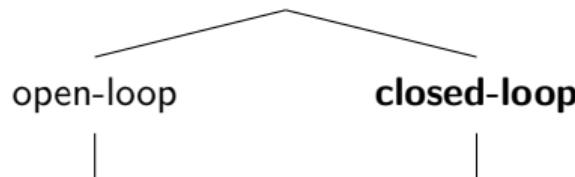
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# Slide with video embedding

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Thanks for your attention!

Any questions?

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