ECHORD Call 2: GOP Project

(Generating Optimal Paths for industrial and humanoid robots in complex environments)

ECHORD workshop: First results and concepts in view of knowledge transfer

European Robotics Forum
Vasteras, Sweden, April 7, 2011

Participants
Motivation
Project's Objectives

GOP Project

Participants

Participants

- University Heidelberg, Germany
  - Katja Mombaur (project coordinator)
  - Hans Georg Bock
  - Wael Suleiman
- LAAS-CNRS, Toulouse, France
  - Jean-Paul Laumond
  - Florent Lamiraux
  - Antonio El-Khoury

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- Goal: Generation of the best possible path that does not violate any constraints imposed by the environment in both industrial and humanoid robotics.

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- State of the art: There is no available algorithmic approach that allows to address this problem in cluttered changing environments and in real time.

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- Goal: Generation of the best possible path that does not violate any constraints imposed by the environment in both industrial and humanoid robotics.
- State of the art: There is no available algorithmic approach that allows to address this problem in cluttered changing environments and in real time.
- Related research fields: path planning and numerical optimal control.

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- Building on top of the experiences of the two partner institutions,

University of Heidelberg:

- Optimal control
- Robot motion optimization

LAAS-CNRS:

- Path planning
- Robot control

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University of Heidelberg:

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LAAS-CNRS:

- Path planning
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- Combining state of the art developments of path planning and motion control.

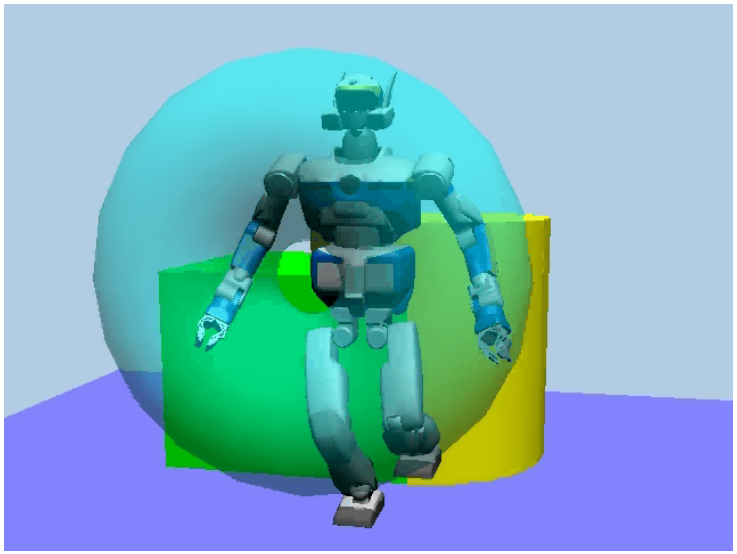
Project's Objectives

- Testing the new developed algorithms on the humanoid robot HRP-2 and on a small robotic arm.

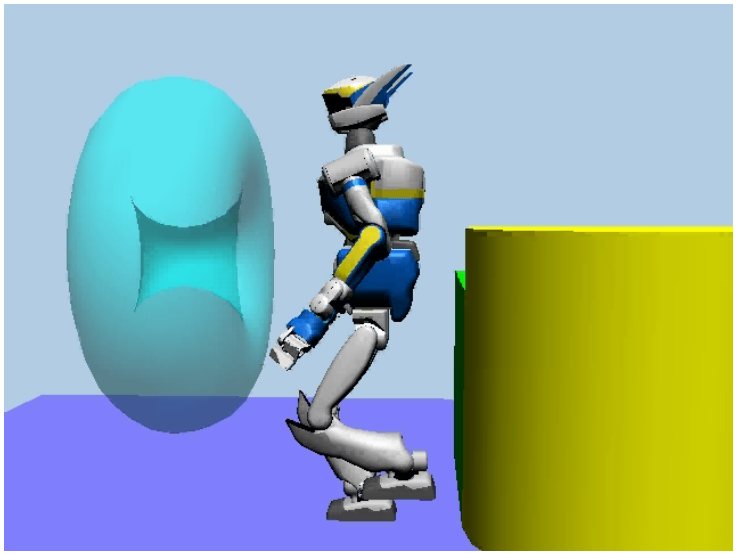
(a) HRP-2

(b) KUKA KR5 sixx 850

Previous Results



Simulated motion (front view)



Simulated motion (side view)

Previous Results

Time parameterization of humanoid robot paths

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Thank you for your attention!

Questions?