UNIVERSITÀ DELLA CALABRIA

DIPARTIMENTO DI MATEMATICA E INFORMATICA

AVVISO DI SEMINARIO

Venerdì 16 maggio 2014 - ore 11:30
aula MT10 – cubo 30B primo piano

prof. Esra Erdem
Sabanci University, Istanbul

"A Formal Hybrid Planning Framework for Robotic Manipulation"

Abstract:

Robotic manipulation aims automatic generation of robot motion sequences for manipulation of movable objects among obstacles, to achieve a desired goal configuration. Some of these objects can only move when picked up by robots, and the order of pick-and-place operations for manipulation may matter to obtain a feasible kinematic solution. Therefore, geometric reasoning and motion planning alone are not sufficient to solve these manipulation problems; and planning of actions such as the pick-and-place operations need to be integrated with the motion planning problem. We present a modular framework that combines these two sorts of reasoning, using expressive formalisms and efficient solvers of answer set programming. We illustrate applications of this framework to complex robotic manipulation tasks that require concurrent execution of actions, with both dynamic simulations and physical implementations, using multiple Kuka youBots.

IL DIRETTORE DEL DIPARTIMENTO
Prof. Nicola Leone