Scholarship Plan

Title:Conceptualization of plan-based activities for intelligent service robotsKeywords:Robot task planning; plan abstraction and generalization; experience-based
learning; roboticsSupervisors:Luís Seabra Lopes, Armando PinhoResearch unit:IEETA/UA

Context

In the framework of RACE ("Robustness by Autonomous Competence Enhancement"), an ongoing project funded by EU FP7, IEETA is currently collaborating on the development of an artificial cognitive system able to build a high-level understanding of the world it inhabits by storing and exploiting appropriate memories of its experiences. The project developments will be integrated and demonstrated on a PR2 robot, from Willow Garage. The University of Aveiro is involved in the development of modules concerned with semantic interpretation, recording and conceptualization of experiences of plan-based activities, and human-robot interaction.

Objectives

This scholarship is focused on the design and development of mechanisms for conceptualization of plan-based robot activities in service robotics applications, such that robot performance on task planning and execution improves with accumulated experiences and conceptualizations. Conceptualization is based on multiple inference mechanisms, in particular abstraction and deductive generalization. There is a focus on problem solving and failure recovery, as well as on human-robot interaction for guiding plan-based robot experiences.