

DECISIONAL ISSUES FOR HUMAN-ROBOT COLLABORATION

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This talk will address some key decisional issues that are necessary for a cognitive and interactive robot which shares space and tasks with humans. We adopt a constructive approach based on the identification and the effective implementation of individual and collaborative skills. The system is comprehensive since it aims at dealing with a complete set of abilities articulated so that the robot controller is effectively able to conduct in a flexible and fluent manner a human-robot joint action seen as a collaborative problem solving and task achievement. These abilities include geometric reasoning and situation assessment based essentially on perspective-taking and affordances, management and exploitation of each agent (human and robot) knowledge in a separate cognitive model, human-aware task planning and interleaved execution of shared plans. We will also discuss the key issues linked to the pertinence and the acceptability by the human of the robot behaviour, and how this influence qualitatively the robot decisional, planning, control and communication processes.