1. Record Nr. UNINA9910143892803321

Titolo	Advances in Plan-Based Control of Robotic Agents : International Seminar, Dagstuhl Castle, Germany, October 21-26, 2001, Revised Papers / / edited by Michael Beetz, Leonidas Guibas, Joachim Herztberg, Malik Ghallab, Martha E. Pollack
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2002
ISBN	3-540-37724-7
Edizione	[1st ed. 2002.]
Descrizione fisica	1 online resource (VIII, 296 p.)
Collana	Lecture Notes in Artificial Intelligence ; ; 2466
Disciplina	629.8/92
Soggetti	Robotics Automation Artificial intelligence Computer science Control engineering Mechatronics Robotics and Automation Artificial Intelligence Computer Science, general Control, Robotics, Mechatronics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Plan-Based Multi-robot Cooperation -- Plan-Based Control for Autonomous Soccer Robots Preliminary Report -- Reliable Multi-robot Coordination Using Minimal Communication and Neural Prediction -- Collaborative Exploration of Unknown Environments with Teams of Mobile Robots -- Mental Models for Robot Control -- Perceptual Anchoring: A Key Concept for Plan Execution in Embedded Systems -- Progressive Planning for Mobile Robots A Progress Report -- Reasoning about Robot Actions: A Model Checking Approach -- Lifelong Planning for Mobile Robots -- Learning How to Combine Sensory-Motor Modalities for a Robust Behavior -- Execution-Time Plan Management for a Cognitive Orthotic System -- Path Planning for Cooperating

Robots Using a GA-Fuzzy Approach -- Performance of a Distributed Robotic System Using Shared Communication Channels -- Use of Cognitive Robotics Logic in a Double Helix Architecture for Autonomous Systems -- The dd&p Robot Control Architecture -- Decision-Theoretic Control of Planetary Rovers.

Sommario/riassunto

In recent years, autonomous robots, including Xavier, Martha [1], Rhino [2,3], Minerva,and Remote Agent, have shown impressive performance in long-term demonstrations. In NASA’s Deep Space program, for example, an - tonomous spacecraft controller, called the Remote Agent [5], has autonomously performed a scienti?c experiment in space. At Carnegie Mellon University, Xavier [6], another autonomous mobile robot, navigated through an o?ce - vironment for more than a year, allowing people to issue navigation commands and monitor their execution via the Internet. In 1998, Minerva [7] acted for 13 days as a museum tourguide in the Smithsonian Museum, and led several thousand people through an exhibition. These autonomous robots have in common that they rely on plan-based c- trol in order to achieve better problem-solving competence. In the plan-based approach, robots generate control actions by maintaining and executing a plan that is e?ective and has a high expected utility with respect to the robots’ c- rent goals and beliefs. Plans are robot control programs that a robot can not only execute but also reason about and manipulate [4]. Thus, a plan-based c- troller is able to manage and adapt the robot’s intended course of action — the plan — while executing it and can thereby better achieve complex and changing tasks.