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Soggetti	Artificial intelligence Computer communication systems Software engineering User interfaces (Computer systems) Optical data processing Control engineering Robotics Mechatronics Artificial Intelligence Computer Communication Networks Software Engineering User Interfaces and Human Computer Interaction Image Processing and Computer Vision Control, Robotics, Mechatronics
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Overview and Roadmap -- Overview of RoboCup 2003 Competition and Conferences -- RoboCup: Yesterday, Today, and Tomorrow Workshop of the Executive Committee in Blaubeuren, October 2003 -- Invited Papers -- Challenges in Robust Situation Recognition through Information Fusion for Mission Critical Multi-agent Systems -- On Role

Allocation in RoboCup -- On the Role of Quantitative Descriptions of Behaviour in Mobile Robotics Research -- Technical Papers -- Complexity Science and Representation in Robot Soccer -- Recognition and Prediction of Motion Situations Based on a Qualitative Motion Description -- Evaluating Team Performance at the Edge of Chaos -- Hidden Markov Modeling of Team-Play Synchronization -- Designing Agent Behavior with the Extensible Agent Behavior Specification Language XABSL -- Feature-Based Declarative Opponent-Modelling -- Scenario-Based Teamworking, How to Learn, Create, and Teach Complex Plans? -- Specifying Agent Behaviors with UML Statecharts and StatEdit -- Echo State Networks for Mobile Robot Modeling and Control -- Model and Behavior-Based Robotic Goalkeeper -- Evolving Visual Object Recognition for Legged Robots -- Coaching Advice and Adaptation -- Technical Solutions of TsinghuaAeolus for Robotic Soccer -- A Real-Time Auto-Adjusting Vision System for Robotic Soccer -- Knowledge-Based Autonomous Dynamic Colour Calibration -- Playing Robot Soccer under Natural Light: A Case Study -- Tracking Regions -- Fast and Robust Edge-Based Localization in the Sony Four-Legged Robot League -- A Symmetry Operator and Its Application to the RoboCup -- RoboCup as an Introduction to CS Research -- RoboCup in Higher Education: A Preliminary Report -- Scaffolding Children's Robot Building and Programming Activities -- Planning Trajectories in Dynamic Environments Using a Gradient Method -- Local Multiresolution Path Planning -- A Humanoid Approaches to the Goal -- Reinforcement Learning Based on Rhythmic Walking Parameters -- Design of Walking Gaits for Tao-Pie-Pie, a Small Humanoid Robot -- ProRobot -- Predicting the Future of Humanoid Robots -- Traction Monitoring for Collision Detection with Legged Robots -- Multi-robot Control in Highly Dynamic, Competitive Environments -- Developing Comprehensive State Estimators for Robot Soccer -- Cooperative Soccer Play by Real Small-Size Robot -- On-Board Vision Using Visual-Servoing for RoboCup F-180 League Mobile Robots -- A Plugin-Based Architecture for Simulation in the F2000 League -- Development of a Simulator of Environment and Measurement for Autonomous Mobile Robots Considering Camera Characteristics -- Simulation League: The Next Generation -- Posters -- Educational Features of Malaysian Robot Contest -- A Hybrid Software Platform for Sony AIBO Robots -- A Rule-Driven Autonomous Robotic System Operating in a Time-Varying Environment -- Trot Gait Design Details for Quadrupeds -- The High-Level Communication Model for Multi-agent Coordination in the RoboCupRescue Simulator -- Pseudo-local Vision System Using Ceiling Camera for Small Multi-robot Platforms -- Using Model-Based Diagnosis to Build Hypotheses about Spatial Environments -- Self-localization Method Using Two Landmarks and Dead Reckoning for Autonomous Mobile Soccer Robots -- Speed-Dependent Obstacle Avoidance by Dynamic Active Regions -- Using the Opponent Pass Modeling Method to Improve Defending Ability of a (Robo)Soccer Simulation Team -- Topological Navigation in Configuration Space Applied to Soccer Robots -- A Fuzzy Reinforcement Learning for a Ball Interception Problem -- Intelligent Control of Autonomous Mobile Soccer Robot Adapting to Dynamical Environment -- A Hierarchical Multi-module Learning System Based on Self-interpretation of Instructions by Coach -- Building Aunt Hillary: Creating Artificial Minds with 'Neural Nests' -- Autonomous Robot Controllers Capable of Acquiring Repertoires of Complex Skills -- A New Odometry System to Reduce Asymmetric Errors for Omnidirectional Mobile Robots -- Texture-Based Pattern Recognition Algorithms for the RoboCup Challenge -- An Open Robot Simulator Environment -- Application of

Parallel Scenario Description for RoboCupRescue Civilian Agent -- RoboCup Advanced 3D Monitor -- RoboCup Rescue Simulation: Methodologies Tools and Evaluation for Practical Applications -- An Efficient Need-Based Vision System in Variable Illumination Environment of Middle Size RoboCup -- Filling the Gap among Coordination, Planning, and Reaction Using a Fuzzy Cognitive Model -- Toward an Undergraduate League for RoboCup -- A Probabilistic Framework for Weighting Different Sensor Data in MUREA -- Plays as Team Plans for Coordination and Adaptation -- Progress in Learning 3 vs. 2 Keepaway -- Distributed Control of Gait for a Humanoid Robot -- Predicting Away Robot Control Latency -- Towards a Probabilistic Asynchronous Linear Control Theory -- Recognizing and Predicting Agent Behavior with Case Based Reasoning -- Case Based Game Play in the RoboCup Four-Legged League Part I The Theoretical Model -- How Contests Can Foster the Research Activities on Robotics in Developing Countries: Chile – A Case Study -- Grounding Robot Sensory and Symbolic Information Using the Semantic Web.

Sommario/riassunto

RoboCup 2003, the 7th Robot World Cup Soccer and Rescue Competitions and Conferences, was held at PadovaFiere, in Padua, Italy during July 2–11, 2003. Following the trend established in recent years, the competition continued to grow, with 244 teams from 30 countries making up the 1244 participants. These teams were distributed across different leagues, where each league conducted one or more competitions. The league reports contained in this book summarize the scientific advancements made in each league as well as the results of the competition. Additionally, the supplemental CD coupled with this book contains

the Team Description Papers for each team competing in RoboCup.

The leagues, in alphabetical order, were: – RoboCup Humanoid League – RoboCup Junior League soccer, rescue, and dance competition – RoboCup Legged League – RoboCup Middle-Size League – RoboCup Rescue Real Robot League – RoboCup Rescue Simulation League – RoboCup Simulation League soccer, coach, and visualization competition – RoboCup Small-Size League This book begins with an overview over the RoboCup competition together with a vision statement for the future development of RoboCup until 2050 and three invited papers by internationally leading researchers of the robotics field. The core part of the book contains papers accepted for oral or poster presentation at the International RoboCup Symposium 2003, which was held directly after the RoboCup competitions. The RoboCup team descriptions which, traditionally, have been part of the proceedings are now provided on a supplementary CD. This enabled us to allocate significantly more space for the fast-growing number of participating teams, thus rendering the team descriptions more informative and thus valuable.
