

Table of Contents

The Tournament Results of the Different Leagues of RoboCup-2001	1
<i>Andreas Birk, Silvia Coradeschi, and Satoshi Tadokoro</i>	

Champion Teams

Global Planning from Local Eyeshot: An Implementation of Observation-Based Plan Coordination in RoboCup Simulation Games	12
<i>Yunpeng Cai, Jiang Chen, Jinyi Yao, and Shi Li</i>	

LuckyStar II	22
<i>Ng Beng Kiat, Quek Yee Ming, Tay Boon Hock, Yuen Suen Yee, and Simon Koh</i>	

CS Freiburg 2001	26
<i>Thilo Weigel, Alexander Kleiner, Florian Diesch, Markus Dietl, Jens-Steffen Gutmann, Bernhard Nebel, Patrick Stiegeler, and Boris Szerbakowski</i>	

The UNSW RoboCup 2001 Sony Legged Robot League Team	39
<i>Spencer Chen, Martin Siu, Thomas Vogelgesang, Tak Fai Yik, Bernhard Hengst, Son Bao Pham, and Claude Sammut</i>	

YabAI: The First Rescue Simulation League Champion	49
<i>Takeshi Morimoto, Kenji Kono, and Ikuo Takeuchi</i>	

Challenge Award Finalists

A Control Method for Humanoid Biped Walking with Limited Torque	60
<i>Fuminori Yamasaki, Ken Endo, Minoru Asada, and Hiroaki Kitano</i>	

A Fast Vision System for Middle Size Robots in RoboCup	71
<i>M. Jamzad, B.S. Sadjad, V.S. Mirrokni, M. Kazemi, H. Chitsaz, A. Heydarnoori, M.T. Hajiaghahi, and E. Chiniforooshan</i>	

Designing an Omnidirectional Vision System for a Goalkeeper Robot	81
<i>Emanuele Menegatti, Francesco Nori, Enrico Pagello, Carlo Pellizzari, and Davide Spagnoli</i>	

RoboBase: An Extensible Framework Supporting Immediate Remote Access to Logfiles	92
<i>John A. Sear and Rupert W. Ford</i>	

Agent Based Approach in Disaster Rescue Simulation: From Test-Bed of Multiagent System to Practical Application	102
<i>Tomoichi Takahashi, Satoshi Tadokoro, Masayuki Ohta, and Nobuhiro Ito</i>	

Technical Papers

Full Papers

Planning and Executing Joint Navigation Tasks in Autonomous Robot Soccer	112
<i>Sebastian Buck, Michael Beetz, and Thorsten Schmitt</i>	
A Case Study of How Mobile Robot Competitions Promote Future Research	123
<i>Jennifer Casper, Mark Micire, Jeff Hyams, and Robin Murphy</i>	
CS Freiburg: Global View by Cooperative Sensing	133
<i>Markus Dietl, Jens-Steffen Gutmann, and Bernhard Nebel</i>	
Multi-sensor Navigation for Soccer Robots	144
<i>Carlos F. Marques and Pedro U. Lima</i>	
Visual Attention Control by Sensor Space Segmentation for a Small Quadruped Robot Based on Information Criterion	154
<i>Noriaki Mitsunaga and Minoru Asada</i>	
Language Design for Rescue Agents	164
<i>Itsuki Noda, Tomoichi Takahashi, Shuji Morita, Tetsuhiko Koto, and Satoshi Tadokoro</i>	
Specifying Rational Agents with Statecharts and Utility Functions	173
<i>Oliver Obst</i>	
COACH UNILANG – A Standard Language for Coaching a (Robo)Soccer Team	183
<i>Luis Paulo Reis and Nuno Lau</i>	
Cooperative Probabilistic State Estimation for Vision-Based Autonomous Soccer Robots	193
<i>Thorsten Schmitt, Robert Hanek, Sebastian Buck, and Michael Beetz</i>	
High-Speed Obstacle Avoidance and Self-Localization for Mobile Robots Based on Omni-directional Imaging of Floor Region	204
<i>Daisuke Sekimori, Tomoya Usui, Yasuhiro Masutani, and Fumio Miyazaki</i>	
Keepaway Soccer: A Machine Learning Testbed	214
<i>Peter Stone and Richard S. Sutton</i>	

Strategy Learning for a Team in Adversary Environments	224
<i>Yasutake Takahashi, Takashi Tamura, and Minoru Asada</i>	
Evolutionary Behavior Selection with Activation/Termination Constraints .	234
<i>Eiji Uchibe, Masakazu Yanase, and Minoru Asada</i>	

Poster Descriptions

Stereo Obstacle-Detection Method for a Hybrid Omni-directional/ Pin-Hole Stereo Vision System	244
<i>Giovanni Adorni, Luca Bolognini, Stefano Cagnoni, and Monica Mordonini</i>	
Self-Localisation Revisited	251
<i>Joscha Bach and Michael Gollin</i>	
Yue-Fei: Object Orientation and ID without Additional Markers	257
<i>Jacky Baltes</i>	
Efficient Image Processing for Increased Resolution and Color Correctness of CMOS Image Sensors	263
<i>Jacky Baltes</i>	
Comparison of Several Machine Learning Techniques in Pursuit-Evasion Games	269
<i>Jacky Baltes and Yongjoo Park</i>	
A Simple and Accurate Camera Calibration for the F180 RoboCup League	275
<i>Ryad Benosman, Jerome Douret, and Jean Devars</i>	
Implementing Computer Vision Algorithms in Hardware: An FPGA/VHDL-Based Vision System for a Mobile Robot	281
<i>Reinaldo A.C. Bianchi and Anna H. Reali-Costa</i>	
A Framework for Robust Sensing in Multi-agent Systems	287
<i>Andrea Bonarini, Matteo Matteucci, and Marcello Restelli</i>	
Fast Parametric Transitions for Smooth Quadrupedal Motion	293
<i>James Bruce, Scott Lenser, and Manuela Veloso</i>	
Biter: A Platform for the Teaching and Research of Multiagent Systems' Design Using Robocup	299
<i>Paul Buhler and José M. Vidal</i>	
ViperRoos: Developing a Low Cost Local Vision Team for the Small Size League	305
<i>Mark M. Chang, Brett Browning, and Gordon F. Wyeth</i>	

Design and Implementation of Cognitive Soccer Robots	312
<i>C. Castelpietra, A. Guidotti, L. Iocchi, D. Nardi, and R. Rosati</i>	
Genetic Programming for Robot Soccer	319
<i>Vic Ciesielski, Dylan Mawhinney, and Peter Wilson</i>	
“As Time Goes By” – Using Time Series Based Decision Tree Induction to Analyze the Behaviour of Opponent Players	325
<i>Christian Drücker, Sebastian Hübner, Ubbo Visser, and Hans-Georg Weland</i>	
KENSEI-chan: Design of a Humanoid for Running	331
<i>Kosei Demura, Nobuhiro Tachi, Tetsuya Maekawa, and Tamaki Ueno</i>	
Supervision of Robot Control	337
<i>Albert Figueras, Joan Colomer, Thor I. Fossen, and J. Lluís de la Rosa</i>	
Walkie-Talkie MIKE	343
<i>Ian Frank, Kumiko Tanaka-Ishii, Hitoshi Matsubara, and Eiichi Osawa</i>	
Quadruped Robot Navigation Considering the Observational Cost	350
<i>Takeshi Fukase, Masahiro Yokoi, Yuichi Kobayashi, Ryuichi Ueda, Hideo Yuasa, and Tamio Arai</i>	
Evolving Fuzzy Logic Controllers for Sony Legged Robots	356
<i>Dongbing Gu and Huosheng Hu</i>	
A Method for Incorporation of New Evidence to Improve World State Estimation	362
<i>Martin Haker, Andre Meyer, Daniel Polani, and Thomas Martinetz</i>	
Omnidirectional Locomotion for Quadruped Robots	368
<i>Bernhard Hengst, Darren Ibbotson, Son Bao Pham, and Claude Sammut</i>	
An Omnidirectional Vision System That Finds and Tracks Color Edges and Blobs	374
<i>Felix v. Hundelshausen, Sven Behnke, and Raúl Rojas</i>	
A Generalised Approach to Position Selection for Simulated Soccer Agents	380
<i>Matthew Hunter and Huosheng Hu</i>	
On the Motion Control of a Nonholonomic Soccer Playing Robot	387
<i>Giovanni Indiveri</i>	
Evaluation of the Performance of CS Freiburg 1999 and CS Freiburg 2000 .	393
<i>Guido Isekenmeier, Bernhard Nebel, and Thilo Weigel</i>	

Using the Electric Field Approach in the RoboCup Domain	399
<i>Stefan J. Johansson and Alessandro Saffiotti</i>	
A Two-Tiered Approach to Self-Localization	405
<i>Frank de Jong, Jurjen Caarls, Robert Bartelds, and Pieter P. Jonker</i>	
Miro – Middleware for Cooperative Robotics	411
<i>Gerhard Kraetzschmar, Hans Utz, Stefan Sablatnög, Stefan Enderle, and Günther Palm</i>	
Building User Models for RoboCup-Rescue Visualization	417
<i>Yoshitaka Kuwata and Atsushi Shinjoh</i>	
A Modular Hierarchical Behavior-Based Architecture	423
<i>Scott Lenser, James Bruce, and Manuela Veloso</i>	
Localization and Obstacles Detection Using Omni-directional Vertical Stereo Vision	429
<i>Takeshi Matsuoka, Manabu Araoka, Tsutomu Hasegawa, Akira Mohri, Motoji Yamamoto, Toshihiro Kiriki, Nobuhiro Ushimi, Takuya Sugimoto, Jun'ichi Inoue, and Yuuki Yamaguchi</i>	
Karlsruhe Brainstormers - A Reinforcement Learning Approach to Robotic Soccer	435
<i>A. Merke and M. Riedmiller</i>	
Interpretation of Spatio-temporal Relations in Real-Time and Dynamic Environments	441
<i>Andrea Miene and Ubbo Visser</i>	
Stochastic Gradient Descent Localisation in Quadruped Robots	447
<i>Son Bao Pham, Bernhard Hengst, Darren Ibbotson, and Claude Sammut</i>	
Recognizing Probabilistic Opponent Movement Models	453
<i>Patrick Riley and Manuela Veloso</i>	
Design and Implementation of a Soccer Robot with Modularized Control Circuits	459
<i>Kuo-Yang Tu</i>	
Cooperation-Based Behavior Design	465
<i>Hui Wang, Han Wang, Chunmiao Wang, and William Y.C. Soh</i>	
Multi-platform Soccer Robot Development System	471
<i>Hui Wang, Han Wang, Chunmiao Wang, and William Y.C. Soh</i>	

On-line Navigation of Mobile Robot Among Moving Obstacles Using
Ultrasonic Sensors 477
*Nobuhiro Ushimi, Motoji Yamamoto, Jyun'ichi Inoue,
Takuya Sugimoto, Manabu Araoka, Takeshi Matsuoka, Toshihiro Kiriki,
Yuuki Yamaguchi, Tsutomu Hasegawa, and Akira Mohri*

Team Descriptions

Simulation League

11monkeys3 Team Description 484
Keisuke Suzuki, Naotaka Tanaka, and Mio Yamamoto

3T Architecture for the SBCe Simulator Team 487
Eslam Nazemi, Mahmood Rahmani, and Bahman Radjabalipour

Architecture of TsinghuAeolus 491
Jinyi Yao, Jiang Chen, Yunpeng Cai, and Shi Li

ATTUnited-2001: Using Heterogeneous Players 495
Peter Stone

Behavior Combination and Swarm Programming 499
*Keen Browne, Jon McCune, Adam Trost, David Evans, and
David Brogan*

ChaMeleons-01 Team Description 503
*Paul Carpenter, Patrick Riley, Gal Kaminka, Manuela Veloso,
Ignacio Thayer, and Robert Wang*

Cyberoos'2001: "Deep Behaviour Projection" Agent Architecture 507
Mikhail Prokopenko, Peter Wang, and Thomas Howard

Essex Wizards 2001 Team Description 511
*Huosheng Hu, Kostas Kostiadis, Matthew Hunter, and
Nikolaos Kalymiotis*

FC Portugal 2001 Team Description: Flexible Teamwork and Configurable
Strategy 515
Nuno Lau and Luis Paulo Reis

Helli-Respina 2001 Team Description Paper 519
Bahador Nooraei B., Siavash Rahbar N., and Omid Aladini

Lazarus Team Description 522
Anthony Yuen

RoboLog Koblenz 2001 526
Jan Murray, Oliver Obst, and Frieder Stolzenburg

Team Description Mainz Rolling Brains 2001	531
<i>A. Arnold, F. Flentge, Ch. Schneider, G. Schwandtner, Th. Uthmann, and M. Wache</i>	
Team Description of NITStones2001	535
<i>Tetsuya Esaki, Taku Sakushima, Yoshiki Asai, and Nobuhiro Ito</i>	
Team YowAI-2001 Description	539
<i>Koji Nakayama and Ikuo Takeuchi</i>	
The Dirty Dozen Team and Coach Description	543
<i>Sean Buttinger, Marco Diedrich, Leo Hennig, Angelika Hoenemann, Philipp Huegelmeyer, Andreas Nie, Andres Pegam, Collin Rogowski, Claus Rollinger, Timo Steffens, and Wilfried Teiken</i>	
UQ CrocaRoos: An Initial Entry to the Simulation League	547
<i>Gordon Wyeth, Mark Venz, Helen Mayfield, Jun Akiyama, and Rex Heathwood</i>	
UvA Trilearn 2001 Team Description	551
<i>Remco de Boer, Jelle Kok, and Frans Groen</i>	
Zeng01 Team Description: Formation Decision Method Using Game Theory	555
<i>Takuya Morishita, Hiroki Shimora, Kouichirou Hiratsuka, Takenori Kubo, Kyoichi Hiroshima, Raiko Funakami, Junji Nishino, Tomohiro Odaka, and Hisakazu Ogura</i>	
Small-Size Robot (F180) League	
4 Stooges	559
<i>Jacky Baltes</i>	
5dpo Team Description	563
<i>Paulo Costa, Armando Sousa, Paulo Marques, Pedro Costa, Susana Gaio, and António Moreira</i>	
CM-Dragons'01 - Vision-Based Motion Tracking and Heterogenous Robots	567
<i>Brett Browning, Michael Bowling, James Bruce, Ravi Balasubramanian, and Manuela Veloso</i>	
FU-Fighters 2001 (Global Vision)	571
<i>Raúl Rojas, Sven Behnke, Achim Liers, and Lars Knipping</i>	
FU-Fighters Omni 2001 (Local Vision)	575
<i>Raúl Rojas, Felix von Hundelshausen, Sven Behnke, and Bernhard Frötschl</i>	

Owaribito – A Team Description	579
<i>Shinya Hibino, Yukiharu Kodama, Yasunori Nagasaka, Tomoichi Takahashi, Kazuhito Murakami, and Tadashi Naruse</i>	
RoboCup 2001 (F180) Team Description: RoboSix UPMC-CFA (France) ..	583
<i>Francis Bras, Ryad Benosman, André Anglade, Seko Latidine, Olivier Martino, Aude Lagardere, Alain Boun, Alain Testa, and Gilles Cordurié</i>	
Rogi Team Description	587
<i>J.Ll. de la Rosa, B. Innocenti, M. Montaner, A. Figueras, I. Muñoz, and J.A. Ramon</i>	
Roobots	591
<i>Jason Thomas, Kenichi Yoshimura, and Andrew Peel</i>	
Sharif CESR Small Size Robocup Team	595
<i>Mohammad Taghi Manzuri, Hamid Reza Chitsaz, Reza Ghorbani, Pooya Karimian, Alireza Mirazi, Mehran Motamed, Roozbeh Mottaghi, and Payam Sabzmejdani</i>	
The Team Description of the Team OMNI	599
<i>Daisuke Sekimori, Nobuhito Mori, Junichi Ieda, Wataru Matsui, Osamu Miyake, Tomoya Usui, Yukihiisa Tanaka, Dong Pyo Kim, Tetsuhiro Maeda, Hirokazu Sugimoto, Ryouhei Fujimoto, Masaya Enomoto, Yasuhiro Masutani, and Fumio Miyazaki</i>	
UQ RoboRoos: Achieving Power and Agility in a Small Size Robot	603
<i>Gordon Wyeth, David Ball, David Cusack, and Adrian Ratnapala</i>	
ViperRoos 2001	607
<i>Mark M. Chang and Gordon F. Wyeth</i>	

Middle-Size Robot (F2000) League

AGILO RoboCuppers 2001: Utility- and Plan-Based Action Selection Based on Probabilistically Estimated Game Situations	611
<i>Thorsten Schmitt, Sebastian Buck, and Michael Beetz</i>	
Artisti Veneti: An Heterogeneous Robot Team for the 2001 Middle-Size League	616
<i>E. Pagello, M. Bert, M. Barbon, E. Menegatti, C. Moroni, C. Pellizzari, D. Spagnoli, and S. Zaffalon</i>	
Basic Requirements for a Teamwork in Middle Size RoboCup	621
<i>M. Jamzad, H. Chitsaz, A. Foroughnassirai, R. Ghorbani, M. Kazemi, V.S. Mirrokni, and B.S. Sadjad</i>	

Clockwork Orange: The Dutch RoboSoccer Team	627
<i>Matthijs Spaan, Marco Wiering, Robert Bartelds, Raymond Donkervoort, Pieter Jonker, and Frans Groen</i>	
CMU Hammerheads 2001 Team Description	631
<i>Steve Stancliff, Ravi Balasubramanian, Tucker Balch, Rosemary Emery, Kevin Sikorski, and Ashley Stroupe</i>	
CoPS-Team Description	635
<i>R. Lafrenz, M. Becht, T. Buchheim, P. Burger, G. Hetzel, G. Kindermann, M. Schanz, M. Schulé, and P. Levi</i>	
Fun2Mas: The Milan Robocup Team	639
<i>Andrea Bonarini, Giovanni Invernizzi, Fabio Marchese, Matteo Matteucci, Marcello Restelli, and Domenico Sorrenti</i>	
Fusion	643
<i>Takeshi Matsuoka, Motoji Yamamoto, Nobuhiro Ushimi, Jyun'ichi Inoue, Takuya Sugimoto, Manabu Araoka, Toshihiro Kiriki, Yuuki Yamaguchi, Tsutomu Hasegawa, and Akira Mohri</i>	
GMD-Robots	648
<i>Ansgar Bredenfeld, Vlatko Becanovic, Thomas Christaller, Horst Günther, Giovanni Indiveri, Hans-Ulrich Kobiakla, Paul-Gerhard Plöger, and Peter Schöll</i>	
ISocRob 2001 Team Description	653
<i>Pedro Lima, Luis Custódio, Bruno Damas, Manuel Lopes, Carlos Marques, Luis Toscano, and Rodrigo Ventura</i>	
MINHO Robot Football Team for 2001	657
<i>Fernando Ribeiro, Carlos Machado, Sérgio Sampaio, and Bruno Martins</i>	
Osaka University "Trackies 2001"	661
<i>Yasutake Takahashi, Shoichi Ikenoue, Shujiro Inui, Kouichi Hikita, Yutaka Katoh, and Minoru Asada</i>	
ROBOSIX UPMC-CFA : RoboCup Team Description	665
<i>Ryad Benosman, Francis Bras, Frederic Bach, Simon Boulay, Emmanuelle Cahn, Sylvain Come, Gilles Cordurié, Jarlegan Marie Annick, Lapied Loic, Cyrille Potereau, Franck Richard, Samedi Sath, Xavier Vasseur, and Pascal Vincent</i>	
S.P.Q.R. Wheeled Team	669
<i>Luca Iocchi, Daniele Baldassari, Flavio Cappelli, Alessandro Farinelli, Giorgio Grisetti, Floris Maathuis, and Daniele Nardi</i>	

Team Description Eigen	673
<i>Kazuo Yoshida, Ryoichi Tsuzaki, Junichi Kougo, Takaaki Okabe, Nobuyuki Kurihara, Daiki Sakai, Ryotaku Hayashi, and Hikari Fujii</i>	
The Ulm Sparrows 2001	677
<i>Hans Utz, Gerd Mayer, Dominik Maschke, Alexander Neubeck, Peter Schaeffer, Philipp Baer, Ingmar Baetge, Jan Fischer, Roland Holzer, Markus Lauer, Alexander Reisser, Florian Sterk, Günther Palm, and Gerhard Kraetzschmar</i>	
Sony Legged Robot League	
ASURA: Kyushu United Team in the Four Legged Robot League	681
<i>Kentaro Oda, Takeshi Ohashi, Shuichi Kouno, Kunio Gohara, Toyohiro Hayashi, Takeshi Kato, Yuki Katsumi, and Toshiyuki Ishimura</i>	
BabyTigers 2001: Osaka Legged Robot Team	685
<i>Noriaki Mitsunaga, Yukie Nagai, Tomohiro Ishida, Taku Izumi, and Minoru Asada</i>	
Cerberus 2001 Team Description	689
<i>H. Levent Akın, Andon Topalov, and Okyay Kaynak</i>	
CM-Pack'01: Fast Legged Robot Walking, Robust Localization, and Team Behaviors	693
<i>William Uther, Scott Lenser, James Bruce, Martin Hock, and Manuela Veloso</i>	
Essex Rovers 2001 Team Description	697
<i>Huosheng Hu, Dongbing Gu, Dragos Golubovic, Bo Li, and Zhengyu Liu</i>	
French LRP Team's Description	701
<i>Vincent Hugel, Olivier Stasse, Patrick Bonnin, and Pierre Blazevic</i>	
GermanTeam 2001	705
<i>Ronnie Brunn, Uwe Döffert, Matthias Jüngel, Tim Laue, Martin Löttsch, Sebastian Petters, Max Risler, Thomas Röfer, Kai Spiess, and Andreas Sztzybryc</i>	
McGill Reddogs	709
<i>Daniel Sud, Francois Cayouette, Gu Jin Hua, and Jeremy Cooperstock</i>	
RoboMutts++	713
<i>Kate Clarke, Stephen Dempster, Ian Falcao, Bronwen Jones, Daniel Rudolph, Alan Blair, Chris McCarthy, Dariusz Walter, and Nick Barnes</i>	

S.P.Q.R. Legged Team	717
<i>D. Nardi, V. Bonifaci, C. Castelpietra, U. Di Iorio, A. Guidotti, L. Iocchi, M. Salerno, and F. Zonfrilli</i>	
Team Description: UW Huskies-01	721
<i>D. Azari, J.K. Burns, K. Deshmukh, D. Fox, D. Grimes, C.T. Kwok, R. Pitkanen, A.P. Shon, and P. Tressel</i>	
Team Sweden	725
<i>A. Saffiotti, A. Björklund, S. Johansson, and Z. Wasik</i>	
The Team Description of ARAIBO	730
<i>Tamio Arai, Takeshi Fukase, Ryuichi Ueda, Yuichi Kobayashi, and Takanobu Kawabe</i>	
The University of Pennsylvania RoboCup Legged Soccer Team	734
<i>Sachin Chitta, William Sacks, Jim Ostrowski, Aveek Das, and P.K. Mishra</i>	
Wright Eagle 2001 - Sony Legged Robot Team	739
<i>Xiang Li, Zefeng Zhang, Lei Jiang, and Xiaoping Chen</i>	
Rescue Simulation League	
A Design of Agents for the Disaster Simulator on RoboCup-Rescue	743
<i>Taku Sakushima, Tetsuya Esaki, Yoshiki Asai, Nobuhiro Ito, and Koichi Wada</i>	
An Approach to Multi-agent Communication Used in RobocupRescue	747
<i>Jafar Habibi, Ali Nouri, and Mazda Ahmadi</i>	
Task Allocation in the RoboCup Rescue Simulation Domain:	
A Short Note	751
<i>Ranjit Nair, Takayuki Ito, Milind Tambe, and Stacy Marsella</i>	
Team Description for RMIT-on-Fire: Robocup Rescue Simulation	
Team 2001	755
<i>Lin Padgham, John Thangarajah, David Poutakidis, and Chandaka Fernando</i>	
Author Index	759

<http://www.springer.com/978-3-540-43912-7>

RoboCup 2001: Robot Soccer World Cup V
Birk, A.; Coradeschi, S.; Tadokoro, S. (Eds.)
2002, XX, 768 p., Softcover
ISBN: 978-3-540-43912-7