

International Conference on Automation, Robotics and Control Systems 2008

(ARCS-08)

**Orlando, Florida, USA
7-10 July 2008**

Editors:

**Dimitrios A. Karras
Er Meng Joo**

Kamal A.F. Moustafa

ISBN: 978-1-61567-714-6

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2008) by the International Society for Research in Science and Technology
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact the International Society for Research in Science and Technology
at the address below.

ISRST (public relations)
PO Box 2464
Tallahassee, FL 32316 - 2464
USA

isrst@isrst.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Contents

Software Analysis of Lynx 6 Robot Arm.....	1
Baki Koyuncu, Mehmet Serdar Güzel	
3-Dimensional Ellipse-Based Trajectory Generation Model for 4-Legged Robots.....	9
Nima Asadi, Seyed Hossein Kaffash Bokharaei, Saeed Bagheri Shouraki, Hamid Reza Vaezi Joze, Seyed Hossein Khasteh	
A New Fuzzy Based Approach For RoboCup Small Size Soccer Robots' Obstacle Avoidance.....	17
Shokoofeh Pourmehr, Mohammad Bagher Menhaj, Valiallah Monajjemi	
Design and Simulation of Robot Adaptive Servodrives.....	25
Leonid Sloutsky	
Control System Design and Simulation of Polypropylene CSTR Based on SIEMES PCS7.....	33
Mudejun, Liu Siwei, Shi Li, Ren Shua	
Impossibles & Autonomous 4-Legged Soccer Team on AIBO Platform.....	38
Hamid Reza Vaezi Joze, Nima Asadi, Seyed Hossein Kaffash Bokharaei, Navid Zolghadr, Seyed Hossein Khasteh	
Active Flatness Control of Thermally Disturbed Membranes Using an Adaptive Genetic Algorithm.....	45
Xiaoyun Wang, Wanping Zheng, Yan-Ru Hu	
Required Improvements and Possible Solutions for Urban Search And Rescue (USAR) Robots.....	53
Riaan Stopforth, Glen Bright	
Probabilistic Prediction of Student Affect from Hand Gestures.....	58
Abdul Rehman Abbasi, Matthew N. Dailey, Nitin V. Afzulpurkar, Takeaki Uno	
Task Assignment for Multiple Agents with Genetic Algorithms.....	64
Xiaojun Geng	
SAT-based Weighted Planning.....	70
Stefan Andrei, Peggy Doerschuk	
A 3D Manipulation Robot for Internet Use with Sensory Substitution.....	76
Jean-Paul Brice, Matthew Stein	

Reduced Order Adaptive Position/Force Controller for Closed-Chain robotic system.....	84
Sanaz Hosseini, Farhad Fani Saberi, Ali Fallah	
Parameterizable UPnP - Device level SOA with hot-config capabilities.....	89
Jürgen Kemper, Tobias Wegner, Peter Resch, Holger Linde, Peter Schramm, Benjamin Wilms, Sebastian Prost, Markus Walter	
A Walkthrough Programmed Industrial Mobile Robot for Poor Strip Cutting.....	97
KiSung You, HwangRyol Ryu, Chintae Choi	
Autonomous Mobile Robot Task Selection and Configuration Using Constraint Satisfaction.....	103
Richard S. Stansbury, Arvin Agah	
Multi-observer three-point tracking law with networked observers.....	110
Fethi Belkhouche, Fuming Wu, Runchang Lin, Tongdan Jin	
Cooperative Localization for Multiple Robots based on Constraint Propagation Technique.....	116
Kyoung-Hwan Jo, Jihong Lee, Jiyong Kim	
An Anytime Winner Determination Algorithm for Time-Extended Multi-Robot Task Allocation.....	123
Fang Tang, Spondon Saha	
Design and Implementation of an Intelligent Autonomous Robot System.....	131
Maan M. Shaker, Safaa S. Omran, Ali A. Abdullah	
Sampled Data Model Reference Control: Performance enhancements using Multimodel and Variable Structure Control.....	137
ELKHALIL Mansoura, LTAIEF Majda, NOURI Ahmed Said, BEN ABDENOUR Ridha, M'SAAD Mohammed	
A Visual Tool for Kinematics Analyses of Lynx-6 Robot Arms together with dynamic modeling of dc motors at robot joints.....	145
Baki Koyuncu, Mehmet Serdar Güzel	
A Combined Collision Cone and Fuzzy Based Obstacle Avoidance Algorithm for the Small Size Soccer Robots.....	151
M. Heydari Araghi, M. B. Menhaj	
A fault diagnosis and fault-tolerant control method of open-frame underwater vehicles for incipient thruster fault.....	159
Daqi Zhu, Qian Liu, Chuyao Chen	

Facial Expression Reproduction on Face Robot.....	167
Kenzo Kurihara, Daisuke Sugiyama, Kazuaki Masuda, Nobuyuki Nishiuchi	
Adaptive bandwidth allocation for average delay Guarantee by fuzzy logic Manuscripts.....	173
Mina.Shirali, Abolfazl.Haghigat toroghi	
Optimal System Order Reduction via Input/Output Data.....	178
Abdulaziz Sherif, Mohamed Sbeta	
Nature-Inspired Motion Planning for Omni-tread Type Snake Robot.....	183
Sang-Jin Oh, Doo-Gyu Kim, Jihong Lee, Hoon Choi	
Virtual Training Enhances User Performance.....	189
A.A. Faieza, S. Sulaiman, M.K.A. Ariffin, B.T.H.T. Baharuddin	
A Multirobot System Multithreaded Architecture for Motion Coordination.....	196
Fabio M. Marchese	
Networked Architecture for Distributed PC-based Robot Control Systems.....	204
Yannick Dadji, Jochen Maass, Harald Michalik, T. Möglich, N. Kohn, J. Uwe Varchmin	
Effective Path Planning Methods for Parking Autonomous Vehicles.....	212
N. A. Zikos, A. C. Kalpakas, S. K. Zaharos	
Nonlinear Control Based On Differential Geometry.....	219
Gildeberto S. Cardoso, Oswaldo Ludwig, Leizer Schnitman	
Real-Time Servo Control Architecture for Parallel Stabilization and Manipulation of Tele-Operated Robots.....	225
A. Amanatiadis, S.E. Papadakis	
Smart Discrete Sensor Array for Fault Diagnostics of DC Motors: A Rotating Machine Application.....	230
Z. Mahmood, N. Lehrasab, N S. Khattak	

AUTHOR INDEX