

Contents

Invited Paper

- Perception and Cognition: Two Foremost Ingredients toward Autonomous Intelligent Robots** 3
Kurosh Madani

Part I: Intelligent Control Systems and Optimization

- Robust Output Feedback Interpolation Based Control for Constrained Linear Systems** 21
Hoai-Nam Nguyen, Sorin Olaru, Per-Olof Gutman, Morten Hovd
- SVM Approximation of Value Function Contours in Target Hitting Problems** 37
Laetitia Chapel, Guillaume Deffuant

Part II: Robotics and Automation

- Dynamic Obstacle Avoidance with Simultaneous Translational and Rotational Motion Control for Autonomous Mobile Robot** 51
Masaki Takahashi, Takafumi Suzuki, Tetsuya Matsumura, Ayanori Yorozu
- An Economical Testbed for Cooperative Control and Sensing Strategies of Robotic Micro-vehicles** 65
David S. Hermina Martinez, Maximillian Gonzalez, Xinheng Huang, Benjamin Irvine, Chung H. Hsieh, Yuan R. Huang, Martin B. Short, Andrea L. Bertozzi
- Mobile Manipulators Motion Planning Based on Trajectory Tracking Control** 77
Razvan Solea, Daniela Cristina Cernega

Study and Development of the Rescue Robot to Accommodate Victims under Earthquake Disasters	89
<i>Taku Sahashi, Akira Sahshi, Hisashi Uchiyama, Ichiro Fukumoto</i>	
Digital Traveler Assistant	101
<i>Andreea Radu, Leon Rothkrantz, Mirko Novak</i>	
 Part III: Signal Processing, Sensors, Systems Modeling and Control	
Analysis of a Class of Infinite Dimensional Frames	117
<i>Cishen Zhang, Jingxin Zhang, Xiaofang Chen</i>	
Using Chernoff's Bounding Method for High-Performance Structural Break Detection and Forecast Error Reduction	129
<i>Dirk Pauli, Yann Lorion, Sebastian Feller, Benjamin Rupp, Ingo J. Timm</i>	
Analytical-Numerical Localization of Hidden Attractor in Electrical Chua's Circuit	149
<i>Nikolay Kuznetsov, Olga Kuznetsova, Gennady Leonov, Vladimir Vagaitsev</i>	
Flexible Discrete Time State Space Model for Canal Pools	159
<i>João Lemos Nabais, Miguel Ayala Botto</i>	
 Part IV: Industrial Engineering, Production and Management	
Virtual Sensors for Semiconductor Manufacturing: A Nonparametric Approach - Exploiting Information Theoretic Learning and Kernel Machines	175
<i>Andrea Schirru, Simone Pampuri, Cristina De Luca, Giuseppe De Nicolao</i>	
AutomationML as a Shared Model for Offline- and Realtime-Simulation of Production Plants and for Anomaly Detection	195
<i>Olaf Graeser, Barath Kumar, Oliver Niggemann, Natalia Moriz, Alexander Maier</i>	
An Open-Loop Approach for a Stochastic Production Planning Problem with Remanufacturing Process	211
<i>Oscar Salviano Silva Filho</i>	
Author Index	227