

# **2010 International Conference on Autonomous and Intelligent Systems**

**(AIS 2010)**

**Povoa de Varzim, Portugal  
21-23 June 2010**



**IEEE Catalog Number: CFP1094J-PRT**  
**ISBN: 978-1-4244-7104-1**

# TABLE OF CONTENTS

<b>A Decision Model of Stroke Patient Rehabilitation with Augmented Reality-based Games</b> .....	1
<i>A. Alamri, H. Kim, A. El Saddik</i>	
<b>A Dynamic Programming Approach for the Control of Autonomous Vehicles on Planar Motion</b> .....	7
<i>J. Da Silva, J. Sousa</i>	
<b>A Software Framework for Multi-Agent Control of Multiple Autonomous Underwater Vehicles for Underwater Mine Counter-Measures</b> .....	13
<i>H. Li, A. Popa, C. Thibault, M. Trentini, M. Seto</i>	
<b>A Testbed Platform for Assessing Human-Robot Verbal Interaction</b> .....	19
<i>H. Bouraoui, A. Khamis, F. Karray</i>	
<b>Applying Anti-Flocking Model in Mobile Surveillance Systems</b> .....	25
<i>Y. Miao, A. Khamis, M. Kamel</i>	
<b>Automated Epileptic Seizure Onset Detection</b> .....	31
<i>A. Dorai, K. Ponnambalam</i>	
<b>Automated Planning of Tutorial Dialogues</b> .....	35
<i>A. Rahati, F. Kabanza</i>	
<b>Change Analysis for Gait Impairment Quantification in VSN-Based Smart Environments</b> .....	41
<i>A. Salaheldin, M. Elsayed, A. Asebai, N. El Gayar, M. Elhelw</i>	
<b>Cluster Based Wireless Sensor Network Routings Using Artificial Bee Colony Algorithm</b> .....	47
<i>D. Karaboga, S. Okdem, C. Ozturk</i>	
<b>Control Algorithms for Stable Range-of-Motion Behaviours of a Multi Degree-of-Freedom Robot</b> .....	52
<i>B. Beckman, M. Trentini, J. Pieper</i>	
<b>Cooperation in Distributed Surveillance</b> .....	58
<i>A. Benaskeur, A. Khamis, H. Irandoust</i>	
<b>Efficient Deployment Algorithms for Mobile Sensor Networks</b> .....	64
<i>S. Abdel Mageid, R. Ramadan</i>	
<b>Efficient Deployment of Connected Sensing Devices Using Circle Packing Algorithms</b> .....	70
<i>R. Ramadan, S. Ramadan</i>	
<b>Enabling a Dialog – A C2I Infrastructure for Unmanned Vehicles and Sensors</b> .....	76
<i>P. Dias, J. Pinto, R. Gonçalves, J. Sousa</i>	
<b>Environment Mapping Using Fuzzy Quadtree for the Guidance and Control of Autonomous Mobile Robots</b> .....	82
<i>Cedric Cocaud, Amor Jnifene</i>	
<b>Evaluating Approaches to Adaptive Landscape Visualization Construction</b> .....	88
<i>R. Collier, M. Wineberg</i>	
<b>Fuzzy Controller for Three Phases Induction Motor Drives</b> .....	94
<i>A. Eltamaly, A. Alolah, B. Badr</i>	
<b>Handwriting Automatic Classification: Application to Ancient Greek Inscriptions</b> .....	100
<i>C. Papaodysseus, P. Rousopoulos, M. Panagopoulos, D. Arabadjis, F. Panopoulou</i>	
<b>Hierarchical Agent-based Command and Control System for Autonomous Underwater Vehicles</b> .....	106
<i>T. Teck, M. Chitre, P. Vadakkepat</i>	
<b>Hybrid Derivative-free Extended Kalman Filter for USBL/INS Tightly-coupled Integration in Underwater Vehicles</b> .....	112
<i>Joao Sousa</i>	
<b>Indoor Robot Navigation Through Intelligent Processing of RFID Signal Measurements</b> .....	118
<i>M. Suruz Miah, W. Gueaieb</i>	
<b>Learning Inverse Dynamics for Redundant Manipulator Control</b> .....	124
<i>J. Sun De La Cruz, D. Kulic, W. Owen</i>	
<b>Methods for Acceleration of Learning Process of Reinforcement Learning Neuro-Fuzzy Hierarchical Politree Model</b> .....	130
<i>Fábio Martins, Karla Figueiredo, Marley Vellasco</i>	
<b>Modeling Control Situations in Power System Operations</b> .....	136
<i>A. Saleem, M. Lind, S. Singh</i>	
<b>Nonlinear State Estimation Using Interval Computation in PMSM State Observer Simulation</b> .....	142
<i>F. Martins, K. Figueiredo, M. Vellasco</i>	
<b>Optic Disc and Fovea Detection via Multi-scale Matched Filters and a Vessels’ Directional Matched Filter</b> .....	147
<i>Bob Zhang, Fakhreddine Karray</i>	

<b>Path Planning for Cooperative Underwater Range-only Navigation Using a Single Beacon</b> .....	152
<i>M. Chitre</i>	
<b>Predicting the Time to Localized Muscle Fatigue Using ANN and Evolved sEMG Feature</b> .....	158
<i>M. Al-Mulla, F. Sepulveda</i>	
<b>Reallocations in Teams of UAVs Using Dynamic Programming and Mixed Initiative Interactions</b> .....	164
<i>E. Pereira, J. Sousa</i>	
<b>Refractive Error Detection via Group Sparse Representation</b> .....	170
<i>B. Zhang, F. Karray, Q. Li, J. Wang, J. You</i>	
<b>Segmentation of Fingerprint Image by Using Polarimetric Feature</b> .....	175
<i>C. Chen, D. Zhang, L. Zhang</i>	
<b>Sensorless Control for Synchronous Motors</b> .....	179
<i>V. Libor, Z. Pavel</i>	
<b>Smart Level Sensor Based on Thermal Resistance Measurement with Self Calibration</b> .....	184
<i>L. Umar</i>	
<b>Survey on Team Tracking Techniques Applied to Sports</b> .....	189
<i>C. Santiago, A. Sousa, L. Reis, M. Estriga, M. Lames</i>	
<b>Systems Combination In Large Vocabulary Continuous Speech Recognition</b> .....	195
<i>K. Abida, F. Karray</i>	
<b>Thermal Localization</b> .....	201
<i>R. Bencatel</i>	
<b>Towards Generalized Performance Metrics for Human-Robot Interaction</b> .....	207
<i>J. Abou Saleh, F. Karray</i>	
<b>Tracking Control of Autonomous Vehicles with Slippage</b> .....	213
<i>H. Li, M. Trentini</i>	
<b>Using a Randomized Path Planner to Generate 3D Task Demonstrations of Robot Operations</b> .....	219
<i>K. Belghith, F. Kabanza, L. Hartman</i>	

**Author Index**