



ICAS 2015

The Eleventh International Conference on Autonomic and Autonomous Systems

May 24 - 29, 2015

Rome, Italy

ICAS 2015 Editors

Pascal Lorenz, University of Haute-Alsace, France

Claus-Peter Rückemann, Leibniz Universität Hannover / Westfälische Wilhelms-Universität Münster / North-German Supercomputing Alliance (HLRN), Germany

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© (4237) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (4237)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.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

TABLE OF CONTENTS

ICAS 1: THEORY AND PRACTICE OF AUTONOMOUS SYSTEMS

Support Vector Machine Learning in Multi-Robot Teams	1
<i>N. Naidoo, G. Bright</i>	
Intelligent Project Management and Automation Systems	7
<i>B. Ling, Y. Yang, D. Ndzi, M. Gao</i>	
Method for Parameter Adjustment for Automated Visual Inspection of Bottled Liquids	15
<i>I. Topalova</i>	
Estimation of Time to Contact from Blurred Images	20
<i>Y. Takanashi, K. Ito</i>	

ICAS 2: SELF-ADAPTABILITY AND SELF-MANAGEMENT OF CONTEXT-AWARE SYSTEMS

A Round-Trip Engineering Method for Activity Diagrams and Source Code	24
<i>K. Matsumoto, R. Uenishi, N. Mori</i>	
Platform for Autonomous Service Composition	30
<i>K. Baylov, D. Petrova-Antonova, A. Dimov</i>	
Balancing Centralised Control with Vehicle Autonomy in AGV Systems for Industrial Acceptance	37
<i>M. Bader, A. Richtsfeld, W. Holl</i>	
Model-Driven Architecture for Self-Adaptive Context-Aware Message Routing in Pervasive Environments	44
<i>N. Guizani, J. Fayn</i>	

ICAS 3: AUTONOMOUS COMPUTING

CObAPAS: Combinatorial Optimization based Approach for Autonomic Systems	51
<i>P. Prado, L. Nakamura, M. Santana, R. Santana, O. Cortes</i>	
Self-organized Architecture for Sharing Data Streams at Large Scale	57
<i>N. Hidalgo, E. Rosas</i>	
Autonomic Metaheuristic Optimization with Application to Run-time Software Adaptation	63
<i>J. Ewing, D. Menasce</i>	
Efficient Management of Cooling Systems in Green Datacenters	73
<i>I. Safieddine, N. Palma</i>	

ICAS 4: SYSTEM AUTOMATION

On the Adoption of Multi-Agent Systems for the Development of Industrial Control Networks: A Case Study	77
<i>H. Abbas, M. Amin, S. Shaheen</i>	
Application Design and Profiling of Stream Processing	86
<i>V. Gil-Costa, J. Lobos, M. Marin</i>	
Human Friendly Autonomous Robot using Dempster-Shafer Sensor Fusion and Velocity Potential Field Control	92
<i>D. Necsulescu, Y. Hu, J. Sasiadek</i>	

ICAS 5: CLOUD COMPUTING AND VIRTUALIZATION

Enhancing Data Security in Cloud Computing Using a Lightweight Cryptographic Algorithm	98
<i>S. Belguith, A. Jemai, R. Attia</i>	
Supporting the Neon and VFP Instruction Sets in an LLVM-based Binary Translator	104
<i>Y. Guo, W. Yang, J. Chen, J. Lee</i>	
Secure Information and Services Management in the Cloud	110
<i>M. Ogiela, L. Ogiela, U. Ogiela</i>	

Hybrid Autonomous Navigation System Using a Dynamic Fuzzy Cognitive Maps Evolution.....	114
<i>M. Mendonca, L. Arruda, I. Chrun, E. Silva</i>	

ICAS 6: ALGORITHMS AND THEORY FOR CONTROL AND COMPUTATION

Effective Interaction in Asynchronous Multi-Agent Environments for Supply Scheduling in Real-Time.....	120
<i>A. Tsarev, P. Skobelev, D. Ochkov</i>	
On The Topological Entropy of Continuous-Time Polytopic Systems	126
<i>G. Chesi</i>	
Task-Space Torque Controller Based on Time-Delay Control.....	128
<i>S. Hur, J. Jo, Y. Oh</i>	
Context-Aware Authentication for the Internet of Things.....	134
<i>K. Habib, W. Leister</i>	
Author Index	