



ICAS 2013

The Ninth International Conference on Autonomic and Autonomous Systems

March 24 - 29, 2013

Lisbon, Portugal

ICAS 2013 Editors

Nikola Serbedzija, Fraunhofer FOKUS, Germany

Petre Dini, Concordia University, Canada / China Space Agency Center, China

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© (2013) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2013)

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

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

petre@aria.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: AUTONOMIC COMPUTING

Enabling Ubiquitous Workplace Through Virtualization Technology	1
<i>Carlos Oliveira</i>	
Towards Autonomous Load Balancing for Mobile Data Stream Processing and Communication	
<i>Middleware Based on Data Distribution Service</i>	7
<i>Rafael Vasconcelos, Markus Endler, Berto Gomes, Francisco Silva</i>	
<i>QoS-Aware Component for Cloud Computing</i>	14
<i>Ines Ayadi, Noemie Simoni, Gladys Diaz</i>	
<i>Autonomous Systems: from Requirements to Modeling and Implementation.....</i>	21
<i>Nikola Serbedzija</i>	
<i>Comparison Between Self-Stabilizing Clustering Algorithms in Message-Passing Model.....</i>	27
<i>Mandicou Ba, Olivier Flauzac, Rafik Makhlofi, Florent Nolot, Ibrahima Niang</i>	

ICAS 2: CONTEXT-AWARENESS NETWORKS, SERVICES AND APPLICATIONS

Goal Processing and Semantic Matchmaking in Opportunistic Activity and Context Recognition Systems	33
<i>Gerold Hoelzl, Marc Kurz, Alois Ferscha</i>	
Smart Bin for Incompatible Waste Items	40
<i>Arnab Sinha, Paul Couderc</i>	
Middleware Supporting Net-Ready Applications for Enhancing Situational Awareness on Rotorcraft	46
<i>Gustavo L. B. Baptista, Markus Endler, Jose Viterbo, Thomas A. Dubois, Randall L. Johnson</i>	
A Methodology for Evaluating Complex Interactions between Multiple Autonomic Managers	53
<i>Thaddeus Eze, Richard Anthony, Chris Walshaw, Alan Soper</i>	
Organic Programming of Real-Time Operating Systems	57
<i>Lial Khaluf, Franz Josef Rammig</i>	

ICAS 3: THEORY FOR CONTROL AND COMPUTATION

Higher Order Sliding Mode Control of Robot Manipulator	61
<i>Awatif Guendouzi, Ahcene Boubakir, Mustapha Hamerlain</i>	
Numerical Model of Generalized Multi-Priority Queuing System	67
<i>Eimutis Valakevicius, Mindaugas Snipas</i>	
HiSPADA: Self-Organising Hierarchies for Large-Scale Multi-Agent Systems	71
<i>Jan-Philipp Steghöfer, Pascal Behrmann, Gerrit Anders, Florian Siefert, Wolfgang Reif</i>	
Methodology of Training and Support for Urban Search and Rescue With Robots	77
<i>Janusz Bedkowski, Karol Majek, Igor Ostrowski, Paweł Musiałek, Andrzej Masłowski, Artur Adamek, Antonio Coelho, Geert De Cubber</i>	

ICAS 4: THEORY AND PRACTICE OF AUTONOMOUS SYSTEMS

Development of Ontology Based Framework for Information Security Standardss	83
<i>Partha Saha, Ambuj Mahanti, Binay Bhushan Chakraborty, Avinash Navlani</i>	
Enabling Reuse of Robot Tasks and Capabilities by Business-Related Skills Grounded in Natural Language [PRESENTATION]	N/A
<i>Klas Nilsson, Elin Anna Topp, Jacek Malec, Il-Hong Suh</i>	
Autonomic Diffusive Load Balancing on Many-core Architecture using Simulated Annealing	90
<i>Hyunjik Song, Kiyoung Choi</i>	
Autonomic Ontologies for Governnamental Knowledge Base	96
<i>Stainam Nogueira Brando, Sérgio Assis Rodrigues, Tiago Silva, Luis Araujo, Jano Moreira De Souza</i>	
Author Index	