ADAPTIVE 2012

The Fourth International Conference on Adaptive and Self-Adaptive Systems and Applications

July 22-27, 2012

Nice, France

ADAPTIVE 2012 Editors

Dana Petcu, West University of Timisoara, Romania

Elena Troubitsyna, Åbo Akademi University Finland

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© (2012) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2012)

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

ADAPTIVE 1: ADAPTIVE MECHANISMS

Personalized Multimedia Content Generation Using the QoE Metrics in Distance Learning Systems 1
Aleksandar Karadimce, Danco Davcev

Decentralized Probabilistic Auto-Scaling for Heterogeneous Systems 7
Bogdan Alexandru Caprarescu, Dana Petcu

Dynamic Adaptation of Opportunistic Sensor Configurations for Continuous and Accurate Activity Recognition 13
Marc Kurz, Gerold Holzl, Alois Ferscha

Adaptation Algorithm for Navigation Support in User Adaptive Enterprise Application 19
Inese Supulniece

ADAPTIVE 2: SELF-ADAPTATION

A QoS Optimization Model for Service Composition 24
Silvana De Gyves Avila, Karim Djemame

Self-Adaptive Framework for Modular and Self-Reconfigurable Robotic Systems 30
Eugen Meister, Alexander Gutenkunst

EC4MAS: A Multi-Agent Model With Endogenous Control for Combinatorial Optimization Problem Solving 38
Gael Clair, Frederic Armetta, Salima Hassas

Information Models for Managing Monitoring Adaptation Enforcement 44
Audrey Moui, Thierry Desprats, Emmanuel Lavinal, Michelle Sibilla

ADAPTIVE 3: ADAPTIVE APPLICATIONS I

Improvement of the Calibration Process for Class E_1 Weights Using an Adaptive Subdivision Method 51
Adriana Valcu

Leveraging the Ubiquitous Web as a Secure Context-aware Platform for Adaptive Applications 57
Heiko Desruelle, Frank Gielen, John Lyle

Adaptive Fractal-like Network Structure for Eficient Search of Targets at Unknown Positions 63
Yukio Hayashi

On the Adaptivity of Distributed Association Rule Mining Agents 69
Adewale Opeoluwa Ogunde, Olusegun Folorunso, Adesina Simon Sodiya

ADAPTIVE 4: ADAPTIVE APPLICATIONS II

Adaptive Control of a Biomethanation Process using Neural Networks 75
Dorin Sendrescu, Elena Bunciu

Adaptive Control for a De-pollution Bioprocess 80
Bunciu Elena, Sendrescu Dorin, Petre Emil

An Adaptive Multi-agent System for Ambient Assisted Living 85
Antonio Andriatrimoson, Nadia Abchiche-Mimouni, Etienne Colle, Simon Galerne

ADAPTIVE 5: FUNDAMENTALS AND DESIGN OF ADAPTIVE SYSTEMS

Using Role-Based Composition to Support Unanticipated, Dynamic Adaptation - Smart Application Grids 93
Christian Piechnick, Sebastian Richly, Sebastian Gotz, Claas Wilke, Uwe Aßmann

Adaptive Properties and Memory of a System of Interactive Agents: A Game Theoretic Approach 103
Roman Gorbunov, Emilia Barakova, Rene Ahn, Matthias Rauterberg

Towards Formal Specification of Autonomic Control Systems 109
Elena Troubitsyna
PROTEUS: A Language for Adaptation Plans 115
Antinisca Di Marco, Francesco Gallo, Franco Raimondi
Author Index