



ADAPTIVE 2011

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

September 25-30, 2011
Rome, Italy

ADAPTIVE 2011 Editors

Jorge Fox, Institute of Information Science and Technology, CNR, Italy

Andreas Rausch, Technische Universität Clausthal, 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© (2011) 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@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

ADAPTIVE 1: ADAPTIVE APPLICATIONS

Facilitating Context-Awareness in Composite Mashup Applications	1
<i>S. Pietschmann, C. Radeck, K. Meißner</i>	
Input-Adaptive QMC-Kalman Filters For Track Fitting	9
<i>R. Esteves, M. McCool, C. Lemieux</i>	
An Adaptable Process Planning Tool: A Tool for Information, Communication, and Interaction in a Robot Cell.....	15
<i>F. Danielsson, L. Christiermin</i>	

ADAPTIVE 2: SELF-ADAPTATION APPLICATIONS

Fungi as Metaphors for Resource Management	20
<i>E. McAdam, R. Falconer, J. Bown, J. Crawford</i>	
Adapting to the Unknown With a few Simple Rules: The glideinWMS Experience.....	25
<i>I. Sfiligoi, B. Hass, F. Wurhwein, B. Holzman</i>	
A Case Study on Self-Sufficiency of Individual Robotic Modules in an Arena With Limited Energy Resources.....	29
<i>R. Humza, O. Scholz</i>	
Dependable and Usage-Aware Service Binding	36
<i>H. Klus, D. Niebuhr, A. Rausch</i>	

ADAPTIVE 3: ADAPTIVE MECHANISMS

The Role of Corticothalamic Feedback in the Response Mode Transition of Thalamus.....	46
<i>J. Cui, C. Shang</i>	
Adaptive Mobile Web Applications Through Fine-Grained Progressive Enhancement	51
<i>H. Desruelle, D. Blomme, F. Gielen</i>	
LTE Uplink Power Control and its Impact on System Performance.....	57
<i>E. Cirstea, S. Ciocchina</i>	
Temporal Mechanisms for Communications in Real-Time Networks	62
<i>P. Lorenz</i>	

ADAPTIVE 4: FUNDAMENTALS AND METRICS

A Formal Orchestration Model for Dynamically Adaptable Services with COWS	67
<i>J. Fox</i>	
Real-Time Transfer and Evaluation of Activity Recognition Capabilities in an Opportunistic System	73
<i>M. Kurz, G. Holzl, A. Ferscha, A. Calatroni, D. Roggen, G. Troster</i>	
Self-Adaptive Agents for Debugging Multi-Agent Simulations	79
<i>F. Klugl, C. Bernon</i>	
Mathematical Model for the Optimal Utilization Percentile in M/M/1 Systems: A Contribution about Knees in Performance Curves	85
<i>F. Gonzalez-Horta, R. Enriquez-Caldera, J. Ramirez-Cortes, J. Martinez-Carballedo, E. Buenfil-Alpuche</i>	
Author Index	