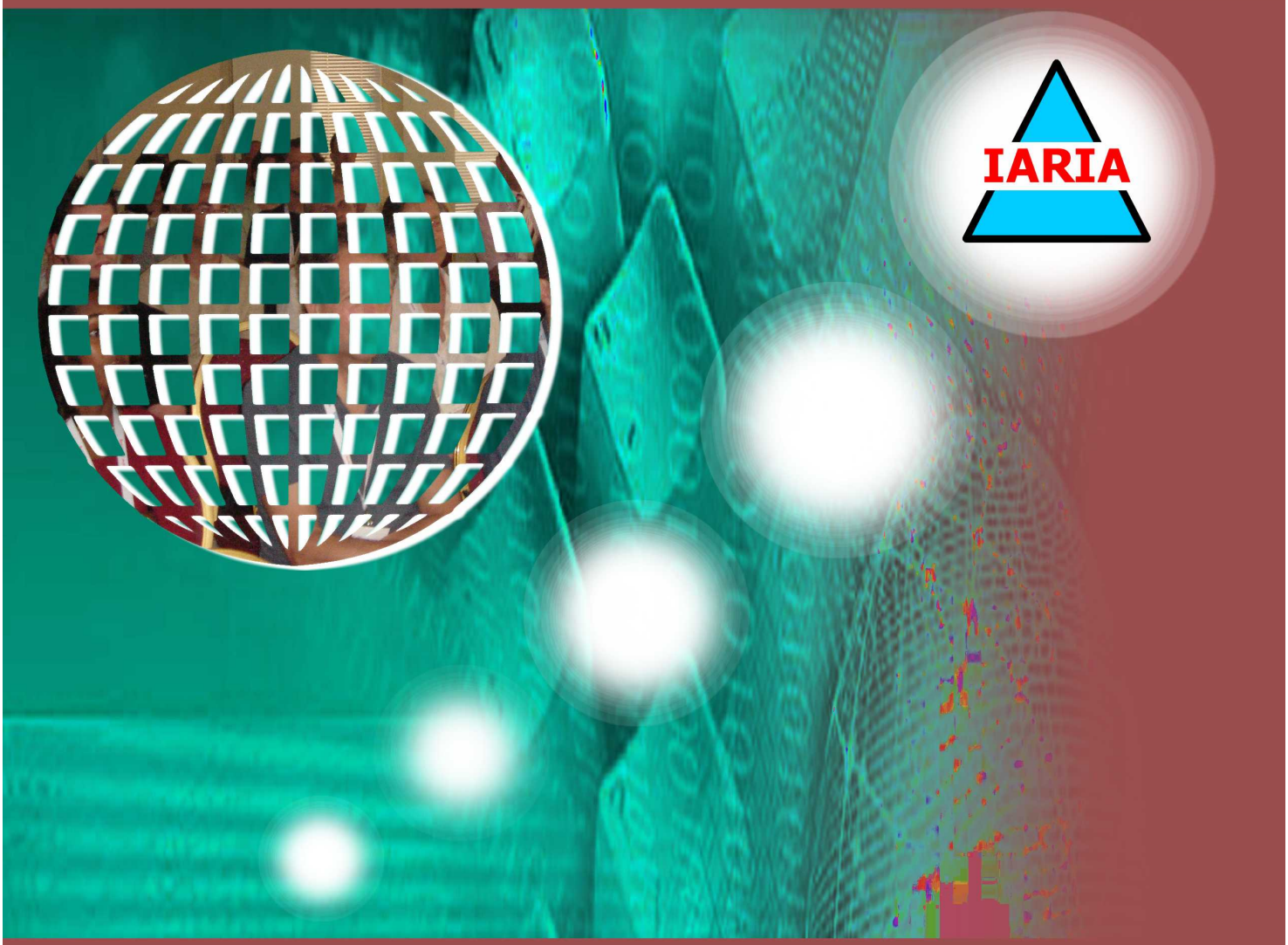
International Journal on Advances in Software



2013 vol. 6 nr. 1&2

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@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

International Journal on Advances in Software
Volume 6, Numbers 1 & 2, 2013

CONTENTS

pages: 1 - 13
An Empirical Evaluation of Simplified Function Point Measurement Processes
Luigi Lavazza, Università degli Studi dell'Insubria, Italy
Geng Liu, Università degli Studi dell'Insubria, Italy

pages: 14 - 24
Basic Building Blocks for Column-Stores
Andreas Schmidt, Karlsruhe Institut of Technology/Karlsruhe University of Applied Sciences, Germany
Daniel Kimmig, Karlsruhe Institut of Technology, Germany
Reimar Hofmann, Karlsruhe University of Applied Sciences, Germany

pages: 25 - 44
Theoretical and Practical Implications of User Interface Patterns Applied for the Development of Graphical User Interfaces
Stefan Wendler, Ilmenau University of Technology, Germany
Danny Ammon, Ilmenau University of Technology, Germany
Teodora Kikova, Ilmenau University of Technology, Germany
Ilka Philippow, Ilmenau University of Technology, Germany
Detlef Streitferdt, Ilmenau University of Technology, Germany

pages: 45 - 55
Message-Passing Interface for Java Applications: Practical Aspects of Leveraging High Performance Computing to Speed and Scale Up the Semantic Web
Alexey Cheptsov, High Performance Computing Center Stuttgart, Germany
Bastian Koller, High Performance Computing Center Stuttgart, Germany

pages: 56 - 68
A QoS-Aware BPEL Framework for Service Selection and Composition Using QoS Properties
Chiaen Lin, University of North Texas, USA
Krishna Kavi, University of North Texas, USA

pages: 69 - 79
Supporting Test Code Generation with an Easy to Understand Business Rule Language
Christian Bacherler, Software Technology Research Lab, DeMontfort University, Leicester, UK
Ben Moszkowski, Software Technology Research Lab, DeMontfort University, Leicester, UK
Christian Facchi, Institute of Applied Research, Ingolstadt University of Applied Sciences, Ingolstadt, Germany

pages: 80 - 91
Design and Classification of Mutation Operators for Abstract State Machines
Jameleddine Hassine, KFUPM, KSA

pages: 92 - 103
Transformational Implementation of Business Processes in SOA

Krzysztof Sacha, Warsaw University of Technology, Poland
Andrzej Ratkowski, Warsaw University of Technology, Poland

pages: 104 - 118
Automated Tailoring of Application Lifecycle Management Systems to Existing Development Processes
Matthias Biehl, Royal Institute of Technology, Sweden
Jad El-khoury, Royal Institute of Technology, Sweden
Martin Törngren, Royal Institute of Technology, Sweden

pages: 119 - 130
Towards an Approach for Analysing the Strategic Alignment of Software Requirements using Quantified Goal Graphs
Richard Ellis-Braithwaite, Loughborough University, United Kingdom
Russell Lock, Loughborough University, United Kingdom
Ray Dawson, Loughborough University, United Kingdom
Badr Haque, Rolls-Royce Plc., United Kingdom

pages: 131 - 141
Towards the Standardization of Industrial Scientific and Engineering Workflows with QVT Transformations
Corina Abdelahad, Universidad Nacional de San Luis, Argentina
Daniel Riesco, Universidad Nacional de San Luis, Argentina
Alessandro Carrara, ESTECO SPA, Italy
Carlo Comin, ESTECO SPA, Italy
Carlos Kavka, ESTECO SPA, Italy

pages: 142 - 154
GUI Failures of In-Vehicle Infotainment: Analysis, Classification, Challenges, and Capabilities
Daniel Mauser, Daimler AG, Germany
Alexander Klaus, Fraunhofer IESE, Germany
Konstantin Holl, Fraunhofer IESE, Germany
Ran Zhang, Robert Bosch GmbH, Germany

pages: 155 - 169
Linear Constraints and Guarded Predicates as a Modeling Language for Discrete Time Hybrid Systems
Federico Mari, Sapienza University of Rome, Italy
Igor Melatti, Sapienza University of Rome, Italy
Ivano Salvo, Sapienza University of Rome, Italy
Enrico Tronci, Sapienza University of Rome, Italy

pages: 170 - 180
Derivation of Web Service Implementation Artifacts from Service Designs Based on SoaML
Michael Gebhart, Gebhart Quality Analysis (QA) 82, Germany
Jaouad Bouras, ISB AG, Germany

pages: 181 - 195
Incorporating Design Knowledge into the Software Development Process using Normalized Systems Theory
Peter De Bruyn, University of Antwerp, Belgium
Philip Huysmans, University of Antwerp, Belgium

Gilles Oorts, University of Antwerp, Belgium
Dieter Van Nuffel, University of Antwerp, Belgium
Herwig Mannaert, University of Antwerp, Belgium
Jan Verelst, University of Antwerp, Belgium
Arco Oost, Normalized Systems eXpanders factory, Belgium

pages: 196 - 212

Enhancing the Performance of J2EE Applications through Entity Consolidation Design Patterns

Reinhard Klemm, Avaya Labs Research, USA

pages: 213 - 224

Automated Software Engineering Process Assessment: Supporting Diverse Models using an Ontology

Gregor Grambow, Computer Science Dept., Aalen University, Germany
Roy Oberhauser, Computer Science Dept., Aalen University, Germany
Manfred Reichert, Institute for Databases and Information Systems, Ulm University, Germany