# **International Journal on**

# **Advances in Intelligent Systems**





2016 vol. 9 nr. 3&4

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© (4238) by International Academy, Research, and Industry Association (IARIA) Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (423:)

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: 845-758-2633 Email: curran@proceedings.com Web: www.proceedings.com

# CONTENTS

### pages: 233 - 243

**Online Social Networking Software as Ad-Hoc Project Management Software in Capstone Project Courses** Brian Thoms, California State University, Channel Islands, USA Evren Eryilmaz, Bloomsburg University, USA

# pages: 244 - 254

### **Transport Reduction in a Production Grid**

Leo van Moergestel, HU Utrecht University of Applied Sciences, the Netherlands Erik Puik, HU Utrecht University of Applied Sciences, the Netherlands Daniel Telgen, HU Utrecht University of Applied Sciences, the Netherlands John-Jules Meyer, Utrecht University, the Netherlands

### pages: 255 - 264

A Simple Data Cube Representation for Efficient Computing and Updating Viet Phan-Luong, Aix-Marseille Université, Laboratoire d'Informatique Fondamentale de Marseille LIF - UMR CNRS 7279, France

### pages: 265 - 274

# An Approach to Analyzing the Retirement Satisfaction among Men and Women Based on Artificial Neural Networks and Decision Trees

Ehsan Ardjmand, Frostburg State University, USA Gary Weckman, Ohio University, USA Diana Schwerha, Ohio University, USA Andrew Snow, Ohio University, USA

pages: 275 - 286

# Automotive User Experience Design Patterns: An Approach and Pattern Examples

Alexander G. Mirnig, Christian Doppler Laboratory for "Contextual Interfaces", Center for Human-Computer Interaction, University of Salzburg, Austria

Tim Kaiser, Christian Doppler Laboratory for "Contextual Interfaces", Center for Human-Computer Interaction, University of Salzburg, Austria

Artur Lupp, Christian Doppler Laboratory for "Contextual Interfaces", Center for Human-Computer Interaction, University of Salzburg, Austria

Nicole Perterer, Christian Doppler Laboratory for "Contextual Interfaces", Center for Human-Computer Interaction, University of Salzburg, Austria

Alexander Meschtscherjakov, Christian Doppler Laboratory for "Contextual Interfaces", Center for Human-Computer Interaction, University of Salzburg, Austria

Thomas Grah, Christian Doppler Laboratory for "Contextual Interfaces", Center for Human-Computer Interaction, University of Salzburg, Austria

Manfred Tscheligi, Christian Doppler Laboratory for "Contextual Interfaces", Center for Human-Computer Interaction, University of Salzburg, Austria

# pages: 287 - 297

**Components for a SOA with ESB, BPM, and BRM - Decision Framework and architectural Details** Andreas Hausotter, University of Applied Sciences and Arts Hannover - Faculty IV - Business and Computer Science, Deutschland Arne Koschel, University of Applied Sciences and Arts Hannover - Faculty IV - Business and Computer Science,

Arne Koschel, University of Applied Sciences and Arts Hannover - Faculty IV - Business and Compu Deutschland Malte Zuch, University of Applied Sciences and Arts Hannover - Faculty IV - Business and Computer Science, Deutschland Johannes Busch, University of Applied Sciences and Arts Hannover - Faculty IV - Business and Computer Science

Johannes Busch, University of Applied Sciences and Arts Hannover - Faculty IV - Business and Computer Science, Deutschland

Juri Seewald, University of Applied Sciences and Arts Hannover - Faculty IV - Business and Computer Science, Deutschland

# pages: 298 - 309

Using a Physics Engine in ACT-R to Aid Decision Making David Pentecost, University Of Tasmania, Australia Charlotte Sennersten, CSIRO Data 61, Australia Robert Ollington, University Of Tasmania, Australia Craig Lindley, CSIRO Data 61, Australia Byeong Kang, University Of Tasmania, Australia

#### pages: 310 - 328

Astrophysical-oriented Computational multi-Architectural Framework: Design and Implementation Dzmitry Razmyslovich, Institute for Computer Engineering (ZITI), University of Heidelberg, Germany Guillermo Marcus, NVIDIA Corporation, Germany

#### pages: 329 - 338

Adaptive Parameter-Dependent Output Feedback Controllers Synthesis Through LMI-Based Optimization Graziano Chesi, The University of Hong Kong, Hong Kong SAR

#### pages: 339 - 351

Using Neural Networks to Predict the Functionality of Reconfigurable Nano-material Networks Klaus Greff, IDSIA, USI-SUPSI, Switzerland Ruud M.J. Van Damme, University of Twente, Netherlands Jan Koutnik, IDSIA, USI-SUPSI, Switzerland Hajo Broersma, University of Twente, Netherlands Julia Mikhal, University of Twente, Netherlands Celestine P. Lawrence, University of Twente, Netherlands Wilfred G. Van der Wiel, University of Twente, Netherlands Jurgen Schmidhuber, IDSIA, USI-SUPSI, Switzerland

### pages: 352 - 362

Metacognitive Support of Mathematical Abstraction Processes: Why and How - A Basic Reasoning Hans M. Dietz, Institute of Mathematics, University of Paderborn, Germany

#### pages: 363 - 376

On the Integration of Lifecycles and Processes for the Management of Structured and Unstructured Content: A Practical Perspective on Content Management Systems Integration Architecture Hans-Werner Schring, Namics, Germany

pages: 377 - 388 Mobile Text Messaging Quality Assessment Janusz Henryk Klink, Wroclaw University of Science and Technology, Poland

# pages: 389 - 400

# Taming the Complexity of Elasticity, Scalability and Transferability in Cloud Computing - Cloud-Native Applications for SMEs

Peter-Christian Quint, Lübeck University of Applied Sciences, CoSA Center of Excellence, Germany Nane Kratzke, Lübeck University of Applied Sciences, CoSA Center of Excellence, Germany

# pages: 401 - 416

# VASCO - Digging the Dead Man's Chest of Value Streams

René Berndt, Fraunhofer Austria Research GmbH, Austria Nelson Silva, Fraunhofer Austria Research GmbH, Austria Christian Caldera, Fraunhofer Austria Research GmbH, Austria Ulrich Krispel, Fraunhofer Austria Research GmbH, Austria Eva Eggeling, Fraunhofer Austria Research GmbH, Austria Alexander Sunk, Fraunhofer Austria Research GmbH, Austria Gerhard Reisinger, Fraunhofer Austria Research GmbH, Austria Wilfried Sihn, Fraunhofer Austria Research GmbH, Austria Dieter W. Fellner, GRIS, TU Darmstadt & Fraunhofer IGD, Germany

#### pages: 417 - 429

# SpMV Runtime Improvements with Program Optimization Techniques on Different Abstraction Levels

Rudolf Berrendorf, Bonn-Rhein-Sieg University, Germany Max Weierstall, Bonn-Rhein-Sieg University, Germany Florian Mannuss, Saudi Arabian Oil Company, Saudi Arabia

#### pages: 430 - 441

**Cost Considerations About Multi-Tenancy in Public Clouds** Uwe Hohenstein, Siemens AG, Germany Stefan Appel, Siemens AG, Germany

#### pages: 442 - 451

# A Study of Designing Service Model for Sightseeing Using BLE Beacons -To Provide Tourism Information of Traditional Cultural Sites -

Yuko Hiramatsu, Faculty of Economics Chuo University, Japan Fumihiro Sato, Faculty of Economics Chuo University, Japan Atsushi Ito, Graduate School of Engineering, Utsunomiya University, Japan Hiroyuki Hatano, Graduate School of Engineering, Utsunomiya University, Japan Mie Sato, Graduate School of Engineering, Utsunomiya University, Japan Yu Watanabe, Graduate School of Engineering, Utsunomiya University, Japan Akira Sasaki, GClue Inc., Japan

### pages: 452 - 461

Smartphone functions in photo-elicitation sessions for teachers' continuing professional development Antonio Bautista, Complutense University of Madrid, Spain Laura Rayón, University of Alcala, Spain Yolanda Muñoz, University of Alcala, Spain Ana María De las Heras, UDIMA, Spain

### pages: 462 - 471

Enhancing the WordNet Exploration and Visualization in Neo4J with a Tag Cloud Based Approach Enrico G. Caldarola, Department of Electrical Engineering and Information Technologies - University of Naples Federico II, Napoli, Italy Antonio Picariello, Department of Electrical Engineering and Information Technologies - University of Naples Federico II, Napoli, Italy Antonio M. Rinaldi, Department of Electrical Engineering and Information Technologies - University of Naples Federico II, Napoli, Italy Antonio M. Rinaldi, Department of Electrical Engineering and Information Technologies - University of Naples Federico II, Napoli, Italy Marco Sacco, Institute of Industrial Technologies and Automation - National Research Council, Milano, Italy

### pages: 472 - 484

# You Might Have Forgotten This Learning Content! How the Smart Learning Recommender Predicts Appropriate Learning Objects

Christopher Krauss, Fraunhofer FOKUS, Germany

Rakesh Chandru, DILAX Intelcom GmbH, Germany Agathe Merceron, Beuth Hochschule für technik Berlin, Germany Troung-Sinh An, Beuth Hochschule für technik Berlin, Germany Miggi Zwicklbauer, Fraunhofer FOKUS, Germany Stefan Arbanowski, Fraunhofer FOKUS, Germany

#### pages: 485 - 495

Integration of Knowledge Resources and Advanced Association Processing for Geosciences and Archaeology Claus-Peter Rückemann, Westfälische Wilhelms-Universität Münster and Leibniz Universität Hannover and HLRN, Germany

### pages: 496 - 506

**Old Habits as a Resource for Design: On Learning and Un-learning Bodily Knowledge** Tone Bratteteig, Department of Informatics, University of Oslo, Norway Guri Verne, Department of Informatics, University of Oslo, Norway

# pages: 507 - 513

Iterative Evaluation of a Driver Assistant Client in ICT-Systems in the Context of Urban Logistics and Electric Vehicles

Johan Buchholz, Friedrich Schiller University Jena, Germany Sebastian Apel, Friedrich Schiller University Jena, Germany Christian Stolcis, Friedrich Schiller University Jena, Germany Volkmar Schau, Friedrich Schiller University Jena, Germany

#### pages: 514 - 531

Knowledge Graph based Recommendation Techniques for Email Remarketing László Grad-Gyenge, TU Vienna, Austria Hannes Werthner, TU Vienna, Austria Peter Filzmoser, TU Vienna, Austria

pages: 532 - 541

# Supporting the Development and Management of Learning Experiences in Location-Based Mobile Games - The EVANDE project

Dimitris Makris, Technical University of Crete / Laboratory of Distributed Multimedia Information Systems and Applications (TUC/MUSIC), Greece Konstantinos Makris, Technical University of Crete / Laboratory of Distributed Multimedia Information Systems and Applications (TUC/MUSIC), Greece Polyxeni Arapi, Technical University of Crete / Laboratory of Distributed Multimedia Information Systems and Applications (TUC/MUSIC), Greece Stavros Christodoulakis, Technical University of Crete / Laboratory of Distributed Multimedia Information Systems and Applications (TUC/MUSIC), Greece Iasmi Stathi, University of Crete / Natural History Museum of Crete (NHMC), Greece Eleni Spiridaki, University of Crete / Natural History Museum of Crete (NHMC), Greece Charalampos Fassoulas, University of Crete / Natural History Museum of Crete (NHMC), Greece

pages: 542 - 553

**Computing Similarity between Users on Location-Based Social Networks** Soha Mohamed, Cardiff University, United Kingdom Alia Abdelmoty, Cardiff University, United Kingdom

pages: 554 - 564

**The KOOLO app - A case study of self-tracking, visualization, and organizing personal moods** Maja van der Velden, Dept. of Informatics, University of Oslo, Norway Margaret Machniak Sommervold, Dept. of Informatics, University of Oslo, Norway

# pages: 565 - 578

# Designing for Capacities Rather Than Disabilities - Investigating the relationship between psychomotor capacities and interaction opportunities

Suhas Govind Joshi, Department of Informatics, Faculty of Mathematics and Natural Sciences, University of Oslo, Norway

pages: 579 - 588

Smart Cities: Challenges and a Sensor-based Solution - A research design for sensor-based smart city projects

Lasse Berntzen, University College of Southeast Norway, Norway Marius Rhode-Johannessen, University College of Southeast Norway, Norway Adrian Florea, "Lucian Blaga" University of Sibiu, Romania

pages: 589 - 599

Proof-of-concept Evaluation of the Mobile and Personal Speech Assistant for the Recognition of Disordered Speech

Agnieszka Bętkowska Cavalcante, Gido Labs sp. z o.o., Poland Monika Grajzer, Gido Labs sp. z o.o., Polska

*pages: 600 - 614* **The implementation of ERP systems in Iranian manufacturing SMEs** Maryam Rezaeian, University of Gloucestershire, UK Martin Wynn, University of Gloucestershire, UK