# International Journal on Advances in Intelligent Systems

















#### 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© (4235) by International Academy, Research, and Industry Association (IARIA) Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (4236)

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

#### **CONTENTS**

pages: 165 - 176

### Exact Logic Minimization and Multiplicative Complexity of Concrete Algebraic and Cryptographic

Nicolas Courtois, UCL, United Kingdom Theodosis Mourouzis, UCL, United Kingdom Daniel Hulme, UCL, United Kingdom

pages: 177 - 187

#### KLocator: An Ontology-Based Framework for Scenario-Driven Geographical Scope Resolution

Panos Alexopoulos, iSOCO S.A., Spain Carlos Ruiz, iSOCO S.A., Spain Boris Villazon-Terrazas, iSOCO S.A., Spain José-Manuél Gómez-Pérez, iSOCO S.A., Spain

pages: 188 - 198

#### Three Principles for the Design of Energy Feedback Visualizations

Robert S. Brewer, University of Hawaii at Manoa, USA Yongwen Xu, University of Hawaii at Manoa, USA George E. Lee, University of Hawaii at Manoa, USA Michelle Katchuck, University of Hawaii at Manoa, USA Carleton A. Moore, University of Hawaii at Manoa, USA Philip M. Johnson, University of Hawaii at Manoa, USA

pages: 199 - 212

#### Regular Polysemy in WordNet and Pattern based Approach

Abed Alhakim Freihat, Dept. of Information Engineering and Computer Science University of Trento,, Italy Fausto Giunchiglia, Dept. of Information Engineering and Computer Science University of Trento,, Italy Biswanath Dutta, Documentation Research and Training Centre Indian Statistical Institute (ISI), India

pages: 213 - 222

#### A Human Surface Prediction Model Based on Linear Anthropometry

Ameersing Luximon, The Hong Kong Polytechnic University, Hong Kong Yan Luximon, The Hong Kong Polytechnic University, Hong Kong Huang Chao, The Hong Kong Polytechnic University, Hong Kong

pages: 223 - 234

## Kinematic Description of Bimanual Performance in Unpredictable Virtual Environments: A Lifespan Study

Andrea H Mason, University of Wisconsin - Madison, USA Patrick J Grabowski, University of Wisconsin - La Crosse, USA Drew N Rutherford, University of Wisconsin - Madison, USA Andrew R Minkley, University of Wisconsin - Madison, USA pages: 235 - 255

#### High End Computing Using Advanced Archaeology and Geoscience Objects

Claus-Peter Rückemann, Westfälische Wilhelms-Universität Münster (WWU) and Leibniz Universität Hannover and North-German Supercomputing Alliance (HLRN), Germany

pages: 256 - 265

#### Using Semantic Web Technologies to Follow the Evolution of Entities in Time and Space

Benjamin Harbelot, Laboratoire Le2i, UMR-6302 CNRS, Departement Informatique, University of Burgundy, France Helbert Arenas, Laboratoire Le2i, UMR-6302 CNRS, Departement Informatique, University of Burgundy, France Christophe Cruz, Laboratoire Le2i, UMR-6302 CNRS, Departement Informatique, University of Burgundy, France

pages: 266 - 278

## Designing for 3D User Experience in Tablet Context Design and Early Phase User Evaluation of Four 3D GUIs

Minna Pakanen, Department of Information Processing Science, University of Oulu, Finland Leena Arhippainen, Center for Internet Excellence, Finland Seamus Hickey, Department of Information Processing Science, University of Oulu, Finland

pages: 279 - 288

#### **Constructing Autonomous Systems: Major Development Phases**

Nikola Serbedzija, Fraunhofer FOKUS, Germany Annabelle Klarl, LMU Munich, Germany Philip Mayer, LMU Munich, Germany

pages: 289 - 299

## Interactive Rigid-Body Dynamics and Deformable Surface Simulations with Co-Located Maglev Haptic and 3D Graphic Display

Peter Berkelman, University of Hawaii at Manoa, USA Sebastian Bozlee, University of Portland, USA Muneaki Miyasaka, University of Washington, USA

pages: 300 - 317

## Autonomous Load Balancing of Data Stream Processing and Mobile Communications in Scalable Data Distribution Systems

Rafael Oliveira Vasconcelos, Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Brazil Markus Endler, Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Brazil Berto Gomes, Federal University of Maranhão (UFMA), Brazil Francisco Silva, Federal University of Maranhão (UFMA), Brazil

pages: 318 - 328

## Comparison of Simultaneous Measurement of Lens Accommodation and Convergence in Stereoscopic Target with Sine Curve Movement

Takehito Kojima, Graduate School of Information Science Nagoya University, Japan Tomoki Shiomi, Tokushima Labour Standards Inspection Office, Japan Kazuki Yoshikawa, Graduate School of Information Science Nagoya University, Japan Masaru Miyao, Graduate School of Information Science Nagoya University, Japan

pages: 329 - 341

**Automobile Driving Interface Using Gesture Operations for Disabled People** 

Yoshitoshi Murata, Iwate Prefectural University, Japan Kazuhiro Yoshida, Iwate Prefectural University, Japan

pages: 342 - 355

#### **Business Process Modelling for Measuring Quality**

Farideh Heidari, Delft University of Technology, The Netherlands Pericles Loucopoulos, University of Manchester, The United Kingdom Frances Brazier, Delft University of Technology, The Netherlands

pages: 356 - 366

## Machine Learning Methods Applied on Long Term Data Analysis for Rain Detection in a Partial Discharge Sensor Network

Leandro H. S. Silva, Polytechnic School of Pernambuco - University of Pernambuco, Brazil Sérgio C. Oliveira, Polytechnic School of Pernambuco - University of Pernambuco, Brazil Eduardo Fontana, Department of Electronics and Systems - Federal University of Pernambuco, Brazil

pages: 367 - 375

## Implementation of a Map-Reduce based Context-Aware Recommendation Engine for Social Music Events

Wolfgang Beer, Software Competence Center Hagenberg GmbH, Austria Sandor Herramhof, Evntogram Labs GmbH, Austria Christian Derwein, Evntogram Labs GmbH, Austria

pages: 376 - 393

#### An Error Detection Strategy for Improving Web Accessibility for Older Adults

Alfred Taylor Sr., Iowa State University, USA Les Miller, Iowa State University, USA Sree Nilakanta, Iowa State University, USA Jeffry Sander, Iowa State University, USA Saayan Mitra, Iowa State University, USA Anurag Sharda, Iowa State University, USA Bachar Chama, Iowa State University, USA