

# **ISCA 1st International Conference on Information Reuse and Integration 1999**

**Atlanta, Georgia, USA  
4-6 November 1999**

**Editors:**

**S. Rubin**

**ISBN: 978-1-61839-840-6**

**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© (1999) by the International Society for Computers and Their Applications  
All rights reserved. Reproduction in any form without the written consent of ISCA is prohibited.

Original ISBN: 1-880843-31-5 (Out of Print)  
Reprint ISBN: 978-1-61839-840-6

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact the International Society for Computers and Their Applications  
at the address below.

International Society for Computers and Their Applications  
975 Walnut Street, Suite 132  
Cary, NC 27511-4216

Phone: (919) 467-5559  
Fax: (919) 467-3430

isca@ipass.net

**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 SOCIETY FOR COMPUTERS AND THEIR APPLICATIONS

## 1<sup>st</sup> International Conference on Information Reuse and Integration

November 4 - 6, 1999  
Ramada Inn Downtown, Atlanta, Georgia, USA

### TECHNICAL PAPER INDEX

#### SESSION 1: INFORMATION REUSE

1. **Representation of High Level Models for Reuse**  
Soliman M. Algeri and Ian Finch (University of Liverpool, UK) ..... 1
2. **CB-PSE: A Component-Based Problem Solving Environment**  
Maozhen Li, Omer F. Rana and David W. Walker (Cardiff University, UK) ..... 7
3. **Heuristics for Reusable Built-In Test Features in Object-Oriented Programs**  
Michael E. Battig (Norwich University, USA) and Thomas Philip (Mississippi State University, USA) ..... 11
4. **Techniques for Designing Reusable Components**  
Kirby McInnis (Castek Software, Canada) ..... 15
5. **Randomization and Reuse for Expert Systems**  
Stuart H. Rubin and Roger Y. Lee (Central Michigan University, USA) ..... 19

#### SESSION 2: FUZZY AND NEURAL NETWORK SYSTEMS

1. **A Self-Organizing Fuzzy Sliding-Mode Controller for Experimental Dyeing Process Control Studies**  
Wei Huang, Warren Jasper and Gordon Lee (North Carolina State University, USA) ..... 24
2. **Modeling the Mean Search Time of a Target in the Image Data Set using Fuzzy and Neuro-Fuzzy Techniques**  
D. Kaur and Jeff Lovelace (University of Toledo, USA) ..... 28
3. **Automated Modelling of Case Retrieval Structures using Self-Organising Neural Networks**  
Francisco Azuaje, Werner Dubitzky, Norman Black, Kenny Adamson (University of Ulster at Jordanstown, UK) ..... 32
4. **Fuzzy Logic in Memory Arbiters of Multiprocessor Systems**  
Hassan Diab, H. S. Tabbara (American University of Beirut, Lebanon) and Waleed W. Smari (University of Dayton, USA) ..... 36

### **SESSION 3: KNOWLEDGE ENGINEERING I**

- 1. Theory and Practice of Enterprise JavaBean™ Portability**  
Santiago Comella-Dorda, Robert C. Seacord, John E. Robert (Carnegie Mellon University, USA) ..... 42
- 2. Reuse of the SATIN Ontology and the Language DEF-\* for the Dialogue**  
Marie-Helene Abel-Greboval (LaRIA, France) ..... 46
- 3. HP Java based Parallel Data Mining Framework**  
Omer Rana (University of Wales, UK) and Donald Fisk (BT Labs, UK) ..... 50

### **SESSION 4: KNOWLEDGE ENGINEERING II**

- 1. Understanding the Architectural Characteristics behind Middleware Choices**  
A. Kelkar and R. F. Gamble (University of Tulsa, USA) ..... 54
- 2. Using Domain Knowledge to Mine Useful Knowledge from Databases**  
M. Mehdi Owrang O. and Vincent Ribière (American University, USA) ..... 60
- 3. Efficient Semantic Knowledge Acquisition in the Syntactic Parsing**  
Sangho Yoon (Illinois Institute of Technology, USA) and Seungyong Kim (Chongju National College of Science & Technology, Korea) ..... 67
- 4. Classifying and Comparing Software Architecture Description Languages**  
Roger Y. Lee, Stuart H. Rubin and Young Choi (Central Michigan University, USA) ..... 71

### **SESSION 5: IMAGE AND SIGNAL PROCESSING**

- 1. A Model for Detecting Moving Objects**  
Awad H. Khalil (The American University in Cairo, Egypt) ..... 75
- 2. Multi-Sensor Fusion for Photonic Realization**  
S. N. Jayaram Murthy and Stuart Rubin (Central Michigan University, USA) ..... 79
- 3. Heuristic Search in Planning Sequences of Views for 3D Object Recognition**  
Stuart Rubin (Central Michigan University, USA) and Mariofanna Milanova (University of Porto, Portugal) ..... 83

### **SESSION 6: SOFTWARE ENGINEERING TOOLS**

- 1. Prototyping a Distributed Computing System on CORBA**  
Chong-wei Xu and Wesley Lee (Georgia Southern University, USA) ..... 87
- 2. Optimizing VLSI System Testing Using Stochastic Dynamic Programming**  
Jacob Sukhodolsky (Saint Louis University, USA) and Waleed W. Smari (University of Dayton, USA) ..... 91
- 3. Teaching the Hypothetico-Deductive Problem-Solving Method: The Extended PathoPhysiology Tutor**  
Ruth Huichih Chen, Martha W. Evens (Illinois Institute of Technology, USA) and Joel A. Michael (Rush Medical College, USA) ..... 96

## **SESSION 7: OBJECT-ORIENTED SYSTEMS I**

1. **Discovering Semantic Relationships Among Object Classes in Database Systems**  
Shu-Ching Chen (Florida International University, USA), Mei-Ling Shyu (Purdue University, USA) and  
Chi-Min Shu (National Yunlin University of Science and Technology, Taiwan) ..... 100
2. **Building Viewpoints in an Object-Based Representation System for Knowledge Discovery  
in Databases**  
Amaud Simon and Amedeo Napoli (LORIA-UMR, France) ..... 104
3. **Concept-Based Retrieval of Classes Using Access Behavior of Methods**  
Yukon Shen and Young Park (University of Windsor, Canada) ..... 109

## **SESSION 8: OBJECT-ORIENTED SYSTEMS II**

1. **Reusable Java Classes for Building ODBMS**  
Gongzhu Hu (Central Michigan University, USA) ..... 115
2. **Structured to Object-Oriented Mapping of Model Elements to Aid Artifact Reuse**  
Thomas Philip, Bradley Carter, Sandeep Roy (Mississippi State University, USA) ..... 119
3. **A Study of Destructive Objects**  
Clark B. Archer (Winthrop University, USA) and Michael C. Stinson (Central Michigan University, USA) ..... 123