

2010 IEEE International Conference on Information Reuse and Integration

(IRI 2010)

**Las Vegas, Nevada, USA
4 – 6 August 2010**



IEEE Catalog Number: CFP10IRI-PRT
ISBN: 978-1-4244-8097-5

Table of Contents

A1: Automation, Integration and Reuse across Various Apps

A Message-Based Interoperability Framework with Application to Astrophysics 1

László István Etesi^{1,2}, André Csillaghy³ and Lin-Ching Chang¹

¹*The Catholic University of America, USA*

²*Space Flight Center, USA*

³*University of Applied Sciences, Switzerland*

Effective API Navigation and Reuse 7

Awny Alnusair¹, Tian Zhao¹ and Eric Bodden²

¹*University of Wisconsin-Milwaukee, USA*

²*Technische Universität Darmstadt, Germany*

Empirical Evaluation of Active Sampling for CRF-Based Analysis of Pages 13

Manabu Ohta¹, Ryohei Inoue¹ and Atsuhiko Takasu²

¹*Okayama University, Japan*

²*National Institute of Informatics, Japan*

Workflow Management of Simulation based Computation Processes in Transportation Domain 19

Qunzhi Zhou and Viktor Prasanna

University of Southern California, USA

A2: Data Mining and Knowledge Discovery I

Improving Query Suggestion by Utilizing User Intent 25

Shuo-En Tsai, Chia-Yu Tsai, Shih-Wei Tu and Yi-Shin Chen

National Tsing Hua University, Taiwan

Evaluating the Impact of Data Quality on Sampling 31

Jason Van Hulse, Taghi M. Khoshgoftaar and Amri Napolitano

Florida Atlantic University, USA

Heuristic based Approach to Clustering and its Time Critical Applications 37

Alan Chia-Lung Chen¹, Shang Gao¹, Reda Alhajj^{1,2}, Panagiotis Karampelas³

¹*University of Calgary, Canada*

²*Global University, Lebanon*

³*Hellenic American University, Greece*

A Comparative Study of Filter-Based Feature Ranking Techniques 43

Huanjing Wang¹, Taghi M. Khoshgoftaar² and Kehan Gao³

¹*Western Kentucky University, USA*

²*Florida Atlantic University, USA*

³*Eastern Connecticut State University, USA*

B1: Information Assurance I

- Active Learning with Neural Networks for Intrusion Detection** 49
Naeem Seliya¹ and Taghi M. Khoshgoftaar²
¹*University of Michigan – Dearborn, USA*
²*Florida Atlantic University, USA*
- Dynamic Multicast Height Balance Key Agreements for Secure Multicast Communication in Ad Hoc Networks** 55
Hua-Yi Lin¹, Tzu-Chiang Chiang², Che-Yu Yang¹ and Jia-Lin Chang³
¹*China University of Technology, Taiwan*
²*Tunghai University, Taiwan*
³*Hsing Kuo University of Management, Taiwan*
- Secure Information Exchange** 59
Thouraya Bouabana-Tebibel, Sara Mehar and Rym Nesrine Guibadj
National High School of Computer Science, Algeria
- Model based Detection of Implied Scenarios in Multi Agent Systems** 63
Mohammad Moshirpour, Abdolmajid Mousavi and Behrouz H. Far
University of Calgary, Canada

B2: Data Mining and Knowledge Discovery II

- k-NN Based LS-SVM Framework for Long-Term Time Series Prediction** 69
Zifang Huang and Mei-Ling Shyu
University of Miami, USA
- Aggregating Music Recommendation Web APIs by Artist** 75
Brandeis Marshall
Purdue University, USA
- A Novel Feature Selection Technique for Highly Imbalanced Data** 80
Taghi M. Khoshgoftaar¹, Kehan Gao² and Jason Van Hulse¹
¹*Florida Atlantic University, USA*
²*Eastern Connecticut State University, USA*
- Class Compactness for Data Clustering** 86
Yuqing Song
Institute of Computing Technology, Chinese Academy of Sciences, China

C1: Biomedical and Healthcare Systems

- Automatic Detection of Anomalies in Blood Glucose using a Machine Learning Approach** 92
Ying Zhu
University of Ontario Institute of Technology, Canada
- A Supervised Machine Learning Approach of Extracting Coexpression Relationship among Genes from Literature** 98
Richa Tiwari, Chengcui Zhang and Thamar Solorio
The University of Alabama at Birmingham, USA

Linked Data based Semantic Similarity and Data Mining	104
Hao Sheng, Huajun Chen, Tong Yu and Yelei Feng <i>College of Computer Science, Zhejiang University, China</i>	

A Nettee for Pattern Matching with Flexible Wildcard Constraints	109
Youxi Wu ^{1,2} , Xindong Wu ^{3,2} , Fan Min ⁴ and Yan Li ¹ ¹ <i>Hebei University of Technology, China</i> ² <i>University of Vermont, USA</i> ³ <i>Hefei University of Technology, China</i> ⁴ <i>University of Electronic Science and Technology of China, China</i>	

C2: Semantic Web and Emerging Applications

Searching for Individual Entities: A Query Analysis	115
Barbara Bazzanella ¹ , Heiko Stoermer ² and Paolo Bouquet ¹ ¹ <i>University of Trento, Italy</i> ² <i>Fondazione Bruno Kessler, Italy</i>	

Light-Weight Semantics and Bayesian Classification: A Hybrid Technique for Dynamic Web Service Discovery	121
Omair Shafiq ¹ , Reda Alhajj ^{1,2} , Jon G. Rokne ¹ and Ioan Toma ³ ¹ <i>University of Calgary, Canada</i> ² <i>Global University, Lebanon</i> ³ <i>Semantic Technology Institute, Austria</i>	

eCultura, a Semantically-Enriched Web-Based Approach to Manage Cultural Contents	126
Carlos M. Cornejo, Iván Ruiz-Rube and Juan Manuel Dodero <i>University of Cádiz, Spain</i>	

A Framework based Approach for Unified Detection of Aspect Weaving Problems	132
Kun Tian, Kendra Cooper and Kang Zhang <i>University of Texas at Dallas, USA</i>	

D1: Information Assurance II

Inconsistencies in Information Security and Digital Forensics	141
Du Zhang <i>California State University, USA</i>	

BaRMS: A Bayesian Reputation Management Approach for P2P Systems	147
Xuelian Long and James Joshi <i>University of Pittsburgh, USA</i>	

On the Composition of Access Control Management in Multidomain Environment	153
Walid Tfaili, Abdelghani Chibani and Yacine Amirat <i>University Paris Est, LISSI Lab, Creteil, France</i>	

Resistant Image Watermarking in the Phases of the Complex Hadamard Transform Coefficients	159
Roumen Kountchev ¹ , Stuart Rubin ² , Mariofanna Milanova ³ , Vladimir Todorov ⁴ and Roumiana Kountcheva ⁴	

¹*Technical University of Sofia, Bulgaria*

²*Space and Naval Warfare Systems Center, USA*

³*University of Arkansas, Little Rock, USA*

⁴*T&K Engineering Co., Bulgaria*

D2: Multimedia Systems

Direction Clustering for Characterizing Movement Patterns	165
Wenjun Zhou ¹ , Hui Xiong ¹ , Yong Ge ¹ , Jannite Yu ² , Hasan Ozdemir ² and K.C. Lee ²	
¹ <i>Rutgers University, USA</i>	
² <i>Panasonic System Solutions Development Center, USA</i>	

Integration of Global and Local Information in Videos for Key Frame Extraction	171
Dianting Liu ¹ , Mei-Ling Shyu ¹ , Chao Chen ¹ and Shu-Ching Chen ²	
¹ <i>University of Miami, USA</i>	
² <i>Florida International University, USA</i>	

Object Tracking by Chiaroscuro Patterns	177
Yuqing Song	
<i>Institute of Computing Technology, Chinese Academy of Sciences, China</i>	

A Three-Dimensional Geographic and Storm Surge Data Integration System for Evacuation Planning	181
Jairo Pava, Fausto Fleites, Fang Ruan, Kasturi Chatterjee, Shu-Ching Chen and Keqi Zhang	
<i>Florida International University, USA</i>	

E1: Data Integration / Human-Machine Information Systems

User Centered Design of Context Aware Cell Phones in Human-Centric Systems	189
Ashish Godbole ¹ and Seung-Yun Kim ²	
¹ <i>Independent Researcher, USA</i>	
² <i>Shepherd University, USA</i>	

An Integrated Evaluation Model of user Satisfaction with Social Media Services	195
Chorng-Shyong Ong and Min-Yuh Day	
<i>National Taiwan University, Taiwan</i>	

Geometric and Thematic Integration of Spatial Data into Maps	201
Mark McKenney	
<i>Texas State University, USA</i>	

A Fuzzy Ontology-Based Semantic Data Integration System	207
Cristiane A. Yaguinuma, Gustavo F. Afonso, Vinícius Ferraz, Sérgio Borges and Marilde T.P. Santos	
<i>Federal University of São Carlos, Brazil</i>	

E2: Service Oriented Architecture / Web Services

- A Gateway-Based Framework for Finding and Accessing Mobile Web Services** 213
Qusay H. Mahmoud and Thanh Ngo
University of Guelph, Canada
- A Service-Based Approach for Next-Generation Product Lifecycle Management** 219
Stefan Silcher, Jorge Minguez, Thorsten Scheibler and Bernhard Mitschang
Universität Stuttgart, Germany
- Estimating Difference of Web Services** 225
Qianhui Liang¹ and Stuart H. Rubin²
¹*Singapore Management University, Singapore*
²*SPAWAR Systems Center, USA*
- An Adaptive Middleware Framework for Scientific Computing at Extreme Scales** 232
Arzu Gosney, Christopher Oehmen, Adam Wynne and Justin Almquist
Pacific Northwest National Laboratory, USA

F1: AI and Decision Support Systems

- MUS-Based Generation of Arguments and Counter-Arguments** 239
Philippe Besnard¹, Éric Grégoire², Cédric Piette² and Badran Raddaoui²
¹*IRIT-CNRS, Université de Toulouse, France*
²*Université Lille-Nord de France, Artois, France*
- A Case-Based Data Warehousing Courseware** 245
Manashree Kulkarni, Meiliu Lu and Du Zhang
California State University at Sacramento, USA
- AMTEA: Tool for Creating and Exploiting Annotations in the Context of Economic Intelligence (Competitive Intelligence)** 249
Olusoji B. Okunoye¹, Amos David¹ and Charles Uwadia²
¹*Equipe SITE-LORIA, France*
²*University of Lagos, Nigeria*
- Optimal Replacement Policy with Age-Based Inspection Scheme for Condition-Based Maintenance** 253
Hamid Reza Golmakani and Fahimeh Fattahipour
Tafresh University, Iran

F2: Component based Design

- Component Search and Reuse: An Ontology-Based Approach** 258
Awny Alnusair and Tian Zhao
University of Wisconsin-Milwaukee, USA
- A Stochastic Time Series Generator with Adaptive Software Architecture** 262
Ognjen Sobajic¹, Nesa Ilich², Mahmood Moussavi¹ and Behrouz Far¹
¹*University of Calgary, Canada*
²*Optimal Solutions, Ltd., Canada*

A Requirements Engineering Process for Software Product Lines	266
Danuza Neiva ² , Fernando Cesar de Almeida ² , Eduardo Santana de Almeida ^{1,2} and Silvio Lemos Meira ^{2,3}	
¹ <i>Federal University of Bahia, Brazil</i>	
² <i>Reuse in Software Engineering, Brazil</i>	
³ <i>Federal University of Pernambuco, Brazil</i>	

Ontology based Knowledge Modeling and Reuse Approach in Product Redesign	270
Xijuan Liu ^{1,2} , David Rosen ² and Zhonghai Yu ¹	
¹ <i>Shanghai Dianji University, China</i>	
² <i>Georgia Institute of Technology, USA</i>	

G1: Soft Computing/Knowledge Discovery, Acquisition and Management

Identification of Monotone Measures using Genetic Algorithms	274
Bo Guo	
<i>University of Nebraska-Omaha, USA</i>	

The Power of Genetic Algorithm in Automated Assessment of School Readiness	280
Iyad Suleiman ¹ , Tamer Salman ² , Shang Gao ³ , Faruk Polat ⁴ , Maha Arslan ⁵ , Reda Alhadjj ^{3,6} and Mick Ridley ¹	
¹ <i>University of Bradford, United Kingdom</i>	
² <i>Technion, Haifa</i>	
³ <i>University of Calgary, Canada</i>	
⁴ <i>Middle East Technical University, Turkey</i>	
⁵ <i>Haifa University, Haifa</i>	
⁶ <i>Global University, Lebanon</i>	

Visual Information Retrieval from 2D Shapes by Bipolar Matching	286
Yuqing Song	
<i>Institute of Computing Technology, Chinese Academy of Sciences, China</i>	

Knowledge-Based Feedback of IPS² Use Information	292
Günter Seliger ¹ , René Gegusch ¹ , Michael Abramovici ² and Manuel Neubach ²	
¹ <i>Technische Universität Berlin, Germany</i>	
² <i>University of Bochum, Germany</i>	

G2: Fuzzy/Neural Systems

Adaptive Fuzzy Control of a Class of Nonlinear Time-Delay Systems with Input Nonlinearity	298
Shabnam Pourdehi, Dena Karimipour, Navid Noroozi and Fereidoon Shabaninia	
<i>Shiraz University, Iran</i>	

Multiple Fuzzy Neural Networks Modeling on Sparse Data based on a Nonparametric Regression Technique	304
Cruz Vega Israel and Wen Yu Liu	
<i>CINVESTAV IPN, DCA, Mexico</i>	

Fuzzy Composite Concepts based on Human Reasoning	308
Christian Wagner and Hani Hagraš	
<i>University of Essex, United Kingdom</i>	

Neural Modeling with Automatic Structure Selection	314
Xiaoou Li and Wen Yu <i>CINVESTAV-IPN, Mexico</i>	
A Fuzzy XML Database System: Data Storage and Query Processing	318
Ying Jin and Sangeetha Veerappan <i>California State University, Sacramento, USA</i>	
Fuzzy Sliding Mode Control Algorithm and Extended Kalman Filter for Nonlinear Chemical Reactors	322
Ehsan Moshksar, Faridoon Shabaninia and Navid Noroozi <i>Shiraz University, Iran</i>	

H1: Information Reuse

Methodology to Associate the Product Design and Project Management Processes in a Common Platform	326
Citlalih Gutiérrez Estrada, Sergio Díaz Zagal, Eréndira Rendón Lara, Celso Hernández Tenorio and Rafael Cruz Reyes <i>Instituto Tecnológico de Toluca, Mexico</i>	
An Experimental Investigation of Reusable Requirements Retrieval	330
Anas Mahmoud and Nan Niu <i>Mississippi State University, USA</i>	
Entity Re-Use in a Large News Corpus	336
Angela Fogaroli ¹ , Heiko Stoermer ² and Barbara Bazzanella ¹ ¹ <i>University of Trento, Italy</i> ¹ <i>Fondazione Bruno Kessler, Italy</i>	
Progress Towards a NASA Earth Science Reuse Enablement System (RES)	340
James J. Marshall ¹ , Robert R. Downs ² and Chris A. Mattmann ^{3,4} ¹ <i>INNOVIM / NASA Goddard Space Flight Center, USA</i> ² <i>Columbia University, USA</i> ³ <i>Jet Propulsion Laboratory, California Institute of Technology, USA</i> ⁴ <i>University of Southern California, USA</i>	
Combining Feature Modeling and Object Oriented Concepts to Manage the Software Variability	344
Victor T. Sarinho and Antônio L. Apolinário <i>DEXA/DTEC – Universidade Estadual de Feira de Santana, Brazil</i>	

H2: Data Mining and Heuristic Optimization

Determining Result Quality for Vertical Result Merging	350
Brandeis Marshall <i>Purdue University, USA</i>	
A Chinese Fuzzy Autocompletion Approach	355
Yelei Feng, Huajun Chen and Hao Sheng <i>Zhejiang University, China</i>	

Hybrid Ant Colony Optimization for Intensification and Diversification	359
Masaya Yoshikawa and Shimohigashi Yoshiaki <i>Meijo University, Japan</i>	
Tag Grid: Supporting Collaborative and Fuzzy Multidimensional Queries of Tagged Datasets	364
Ken Q. Pu and Russell Cheung <i>University of Ontario Institute of Technology, Canada</i>	
Sentence Level Fact based Search Engine: News Fact Finder	368
Cristina Ribeiro, Ricardo Salmon, Swathi Amarala and Christina Hamada <i>University of Waterloo, Canada</i>	
 Poster	
Toward an Integrated System for Command and Control Net-Centric Web Services and Sustainment: Application to Homeland Security	374
Kevin Adams, Sandi F. Lehan, Marion G. Ceruti, Stuart H. Rubin and Jeff Waters <i>Space and Naval Warfare Systems Center Pacific, USA</i>	
An Information Model for Managing Domain Knowledge via Faceted Taxonomies	378
Hung-Ju Chu and Randy Y.C. Chow <i>University of Florida, USA</i>	
A Context-Aware Proactive Source Code Search and Retrieval Tool	380
Eduardo Cruz Reis Santos ³ , Fernando Cesar de Almeida ^{2,3} , Eduardo Santana de Almeida ^{2,3} and Silvio Romero de Lemos Meira ^{1,3} ¹ <i>Federal University of Pernambuco, Brazil</i> ² <i>Federal University of Bahia, Brazil</i> ³ <i>Reuse in Software Engineering, Brazil</i>	
Building to Grid (B2G) at the California Smart Grid Center	382
Russ Tatro, Suresh Vadhva, Puneet Kaur, Niral Shahpatel, Jeremy Dixon and Karim Alzanoon <i>California State University, Sacramento, USA</i>	
Re-Use of Existing System Protection Concerns and Interconnection Rules for integration of Future Distributed Generation	388
M.Y. Vaziri, S. Vadhva, C.J. Hoffman and K.K. Yagnik <i>California State University, Sacramento, USA</i>	
Solar Energy in a Volume and Efficiency in Solar Power Generation	394
M. Yahyavi, M. Vaziri and S. Vadhva <i>California State University, Sacramento, USA</i>	
Towards an Approach for Enterprise Application Integration based on Specialized Services and Business Objects	400
Zakaria Maamar ¹ , Youcef Baghdadi ² , Wathiq Mansoor ³ ¹ <i>Zayed University, UAE</i> ² <i>Sultan Qaboos University, Oman</i> ³ <i>American University in Dubai, UAE</i>	

A Level Set based Method of License Plate Localization	403
Yuqing Song <i>Institute of Computing Technology, Chinese Academy of Sciences, China</i>	
A Virtual Distributed Computing System based on Multi-Steps Task Allocation	405
Satoshi Takahashi ¹ and Tokuro Matsuo ² ¹ <i>University of Tsukuba, Japan</i> ² <i>Yamagata University, Japan</i>	
Cost Forecast of Sheet Metal Parts using 3D CAD-Models in SME	407
Patrick Gugel and Holger Schrödl <i>University of Augsburg, Germany</i>	
Method of Identifying a Type 2 Membership Function and Application to Decision-Making Problems	409
Yoshiki Uemura <i>Mie University, Japan</i>	

Cwj qt "Kf gz