4276

Lecture Notes in Computer Science

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

University of Dortmund, Germany

Madhu Sudan

Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Moshe Y. Vardi

Rice University, Houston, TX, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Robert Meersman Zahir Tari et al. (Eds.)

On the Move to Meaningful Internet Systems 2006: CoopIS, DOA, GADA, and ODBASE

OTM Confederated International Conferences CoopIS, DOA, GADA, and ODBASE 2006 Montpellier, France, October 29 – November 3, 2006 Proceedings, Part II



Volume Editors

Robert Meersman Vrije Universiteit Brussel (VUB), STARLab Bldg G/10, Pleinlaan 2, 1050 Brussels, Belgium

E-mail: meersman@vub.ac.be

Zahir Tari

RMIT University, School of Computer Science and Information Technology Bld 10.10, 376-392 Swanston Street, VIC 3001, Melbourne, Australia

E-mail: zahirt@cs.rmit.edu.au

Library of Congress Control Number: 2006934986

CR Subject Classification (1998): H.2, H.3, H.4, C.2, H.5, I.2, D.2.12, K.4

LNCS Sublibrary: SL 3 – Information Systems and Application, incl. Internet/Web and HCI

ISSN 0302-9743

ISBN-10 3-540-48274-1 Springer Berlin Heidelberg New York ISBN-13 978-3-540-48274-1 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

springer.com

© Springer-Verlag Berlin Heidelberg 2006 Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India Printed on acid-free paper SPIN: 11914952 06/3142 5 4 3 2 1 0

Volume Editors

Robert Meersman Zahir Tari

CoopIS

Mike Papazoglou Louiqa Raschid Rainer Ruggaber

DOA

Judith Bishop Kurt Geihs

GADA

Pilar Herrero María S. Pérez Domenico Talia Albert Zomaya

ODBASE

Maurizio Lenzerini Erich Neuhold V.S. Subrahmanian

OTM 2006 General Co-chairs' Message

Dear OnTheMove Participant or Reader of these Proceedings,

The General Chairs of OnTheMove 2006, Montpellier, France, are happy to observe that the conference series that was started in Irvine, California in 2002 and subsequently held in Catania, Sicily in 2003 and in Cyprus in 2004 and 2005 clearly continues to attract a growing representative selection of today's world-wide research on the scientific concepts underlying distributed, heterogeneous and autonomous yet meaningfully collaborative computing, with the Internet and the WWW as its prime epitomes.

Indeed, as such large, complex and networked intelligent information systems become the focus and norm for computing, it is clear that there is an acute and increasing need to address and discuss in an integrated forum the implied software and system issues as well as methodological, theoretical and application issues. As we all know, e-mail, the Internet, and even video conferences are not sufficient for effective and efficient scientific exchange. This is why the OnTheMove (OTM) Federated Conferences series has been created to cover the increasingly wide yet closely connected range of fundamental technologies such as data and Web semantics, distributed objects, Web services, databases, information systems, workflow, cooperation, ubiquity, interoperability, mobility, grid and high-performance. On The Move aspires to be a primary scientific meeting place where all aspects of the development of Internet- and Intranet-based systems in organizations and for e-business are discussed in a scientifically motivated way. This fifth 2006 edition of the OTM Federated Conferences event therefore again provided an opportunity for researchers and practitioners to understand and publish these developments within their individual as well as within their broader contexts.

The backbone of OTM was originally formed by the co-location of three related, complementary and successful main conference series: DOA (Distributed Objects and Applications, since 1999), covering the relevant infrastructure-enabling technologies, ODBASE (Ontologies, DataBases and Applications of SEmantics, since 2002) covering Web semantics, XML databases and ontologies, CoopIS (Cooperative Information Systems, since 1993) covering the application of these technologies in an enterprise context through, for example, workflow systems and knowledge management. For the 2006 edition, these were strengthened by a fourth conference, GADA (Grid computing, high-performAnce and Distributed Applications, a successful workshop at OTM since 2004), covering the large-scale integration of heterogeneous computing systems and data resources with the aim of providing a global computing space. Each of these four conferences encourages researchers to treat their respective topics within a framework that incorporates jointly (a) theory , (b) conceptual design and development, and (c) applications, in particular case studies and industrial solutions.

Following and expanding the model created in 2003, we again solicited and selected quality workshop proposals to complement the more "archival" nature of the main conferences with research results in a number of selected and more "avant garde" areas related to the general topic of distributed computing. For instance, the so-called Semantic Web has given rise to several novel research areas combining linguistics, information systems technology, and artificial intelligence, such as the modeling of (legal) regulatory systems and the ubiquitous nature of their usage. We were glad to see that several earlier successful workshops (notably WOSE, MIOS-INTEROP, AweSOMe, CAMS, SWWS, SeBGIS, ORM) re-appeared in 2006 with a second, third or sometimes fourth edition, and that not less than seven new workshops could be hosted and successfully organized by their respective proposers: IS (International Workshop on Information Security), COMINF (International Workshop on Community Informatics), KSinBIT (International Workshop on Knowledge Systems in Bioinformatics), MONET (International Workshop on MObile and NEtworking Technologies for social applications), OnToContent (Ontology content and evaluation in Enterprise), PerSys (International Workshop on Pervasive Systems), and RDDS (International Workshop on Reliability in Decentralized Distributed Systems). We know that as before, their audiences will mutually productively mingle with those of the main conferences, as is already visible from the overlap in authors! The OTM organizers are especially grateful for the leadership and competence of Pilar Herrero in managing this complex process into a success for the second year in a row.

A special mention for 2006 is again due for the third and enlarged edition of the highly attractive OnTheMove Academy (formerly called Doctoral Consortium Workshop). Its 2006 Chairs, Antonia Albani, Gábor Nagypál and Johannes Maria Zaha, three young and active researchers, further refined the original set-up and interactive formula to bring PhD students together: they call them to submit their research proposals for selection; the resulting submissions and their approaches are presented by the students in front of a wider audience at the conference, where they are then independently and extensively analyzed and discussed in public by a panel of senior professors. This year these were Johann Eder, Maria Orlowska, and of course Jan Dietz, the Dean of the OnTheMove Academy, who provided guidance, support and help for the team. The successful students are also awarded free access to all other parts of the OTM program, and only pay a minimal fee for the Doctoral Symposium itself (in fact their attendance is largely sponsored by the other participants!). The OTM organizers expect to further expand the OnTheMove Academy in future editions of the conferences and so draw an audience of young researchers into the OTM forum.

All four main conferences and the associated workshops share the distributed aspects of modern computing systems, and the resulting application-pull created by the Internet and the so-called Semantic Web. For DOA 2006, the primary emphasis was on the distributed object infrastructure; for ODBASE 2006, it became the knowledge bases and methods required for enabling the use of formal semantics; for CoopIS 2006, the topic was the interaction of such

technologies and methods with management issues, such as occur in networked organizations, and for GADA 2006, the topic was the scalable integration of heterogeneous computing systems and data resources with the aim of providing a global computing space. These subject areas naturally overlap and many submissions in fact also treat an envisaged mutual impact among them. As for the earlier editions, the organizers wanted to stimulate this cross-pollination by a shared program of famous keynote speakers: this year we were proud to announce Roberto Cencioni (European Commission), Alois Ferscha (Johannes Kepler Universität), Daniel S. Katz (Louisiana State University and Jet Propulsion Laboratory), Frank Leymann (University of Stuttgart), and Marie-Christine Rousset (University of Grenoble)! We also encouraged multiple event attendance by providing all authors, also those of workshop papers, with free access or discounts to one other conference or workshop of their choice.

We received a total of 361 submissions for the four main conferences and an impressive 493 (compared to the 268 in 2005 and 170 in 2004!) submissions for the workshops. Not only may we indeed again claim success in attracting an increasingly representative volume of scientific papers, but such a harvest of course allows the Program Committees to compose a higher quality cross-section of current research in the areas covered by OTM. In fact, in spite of the larger number of submissions, the Program Chairs of each of the three main conferences decided to accept only approximately the same number of papers for presentation and publication as in 2003, 2004 and 2005 (i.e., average one paper out of four submitted, not counting posters). For the workshops, the acceptance rate varies but was much stricter than before, about one in two to three, to less than one quarter for the IS (Information Security) international workshop. Also for this reason, we separated the proceedings into two books with their own titles, with the main proceedings in two volumes, and we are grateful to Springer for their suggestions and collaboration in producing these books and CDROMs. The reviewing process by the respective Program Committees as usual was performed very professionally and each paper in the main conferences was reviewed by at least three referees, with arbitrated e-mail discussions in the case of strongly diverging evaluations. It may be worthwhile to emphasize that it is an explicit OnTheMove policy that all conference Program Committees and Chairs make their selections completely autonomously from the OTM organization itself. Continuing a costly but nice tradition, the OnTheMove Federated Event organizers decided again to make all proceedings available to all participants of conferences and workshops, independently of one's registration to a specific conference or workshop. Each participant also received a CDROM with the full combined proceedings (conferences + workshops).

The General Chairs are once more especially grateful to all the many people directly or indirectly involved in the setup of these federated conferences who contributed to making it a success. Few people realize what a large number of people have to be involved, and what a huge amount of work, and sometimes risk, the organization of an event like OTM entails. Apart from the persons in the roles mentioned above, we therefore in particular wish to thank our 12 main conference

PC Co-chairs (GADA 2006: Pilar Herrero, María S. Pérez, Domenico Talia, Albert Zomaya; DOA 2006: Judith Bishop, Kurt Geihs; ODBASE 2006: Maurizio Lenzerini, Erich Neuhold, V.S. Subrahmanian; CoopIS 2006: Mike Papazoglou, Louiqa Raschid, Rainer Ruggaber) and our 36 workshop PC Co-chairs (Antonia Albani, George Buchanan, Roy Campbell, Werner Ceusters, Elizabeth Chang, Ernesto Damiani, Jan L.G. Dietz, Pascal Felber, Fernando Ferri, Mario Freire, Daniel Grosu, Michael Gurstein, Maja Hadzic, Pilar Herrero, Terry Halpin, Annika Hinze, Skevos Evripidou, Mustafa Jarrar, Arek Kasprzyk, Gonzalo Méndez, Aldo de Moor, Bart De Moor, Yves Moreau, Claude Ostyn, Andreas Persidis, Maurizio Rafanelli, Marta Sabou, Vitor Santos, Simao Melo de Sousa, Katia Sycara, Arianna D'Ulizia, Eiko Yoneki, Esteban Zimányi).

All, together with their many PC members, did a superb and professional job in selecting the best papers from the large harvest of submissions.

We also heartily thank Zohra Bellahsene of LIRMM in Montpellier for the considerable efforts in arranging the venue at their campus and coordinating the substantial and varied local facilities needed for a multi-conference event such as ours. And we must all also be grateful to Mohand-Said Hacid of the University of Lyon for researching and securing the sponsoring arrangements, to Gonzalo Méndez, our excellent Publicity Chair, to our extremely competent and experienced Conference Secretariat and technical support staff Daniel Meersman, Ana-Cecilia Martinez Barbosa, and Jan Demey, and last but not least to our hyperactive Publications Chair and loyal collaborator of many years, Kwong Yuen Lai, this year bravely assisted by Peter Dimopoulos.

The General Chairs gratefully acknowledge the academic freedom, logistic support and facilities they enjoy from their respective institutions, Vrije Universiteit Brussel (VUB) and RMIT University, Melbourne, without which such an enterprise would not be feasible.

We do hope that the results of this federated scientific enterprise contribute to your research and your place in the scientific network... We look forward to seeing you again at next year's edition!

August 2006

Robert Meersman, Vrije Universiteit Brussel, Belgium Zahir Tari, RMIT University, Australia (General Co-chairs, OnTheMove 2006)

Organization Committee

The OTM (On The Move) 2006 Federated Conferences, which involve CoopIS (Cooperative Information Systems), DOA (distributed Objects and Applications), GADA (Grid computing, high-performAnce and Distributed Applications), and ODBASE (Ontologies, Databases and Applications of Semantics), are proudly supported by CNRS (Centre National de la Researche Scientifique, France), the City of Montpellier (France), Ecole Polytechnique Universitaire de Montepellier, Université de Montpellier II (UM2), Laboratoire d'Informatique de Robotique et de Microélectronique de Montpellier (LIRMM), RMIT University (School of Computer Science and Information Technology), and Vrije Universiteit Brussel (Department of Computer Science).

Executive Committee

OTM 2006 General Co-chairs: Robert Meersman (Vrije Universiteit Brussel,

Belgium) and Zahir Tari (RMIT University,

Australia).

GADA 2006 PC Co-chairs: Pilar Herrero (Universidad Politécnica de

Madrid, Spain), María S. Pérez (Universidad Politécnica de Madrid, Spain), Domenico Talia (Universitá della Calabria, Italy), and Albert Zomaya (The University of Sydney, Australia).

CoopIS 2006 PC Co-chairs: Mike Papazoglou (Tilburg University, Nether-

lands), Louiqa Raschid (University of Maryland, USA), and Rainer Ruggaber (SAP Re-

search Center, Germany).

DOA 2006 PC Co-chairs: Judith Bishop (University of Pretoria, South

Africa) and Kurt Geihs (University of Kassel,

Germany).

ODBASE 2006 PC Co-chairs: Maurizio Lenzerini (Universitá di Roma "La

Sapienza," Italy), Erich Neuhold (Darmstadt University of Technology, Germany), and V.S. Subrahmanian (University of Maryland College

Park, USA).

Publication Co-chairs: Kwong Yuen Lai (RMIT University, Australia)

and Peter Dimopoulos (RMIT University, Aus-

tralia).

Organizing Chair: Zohra Bellahsene (LIRMM CNRS/University

of Montpellier II, France).

Publicity Chair: Mohand-Said Hacid (Université Claude

Bernard Lyon I, France).

Secretariat: Ana-Cecilia Martinez Barbosa, Jan Demey, and

Daniel Meersman.

CoopIS 2006 Program Committee

Marco Aiello Manolis Koubarakis Alistair Barros Bernd Krämer

Boualem Benatallah Winfried Lamersdorf Salima Benbernou Steven Laufmann

Arne Berre Qing Li

Elisa Bertino Tiziana Margaria
Klemens Böhm Marta Mattoso
Alex Borgida Massimo Mecella
Luc Bouganim Nikolay Mehandjiev
Stephane Bressan Brahim Medjahed
Laura Bright Michele Missikoff
Fabio Casati Michael zur Muehlen

Mariano Cilia Jörg Müller
Vincenzo D'Andrea David Munro
Umesh Dayal Wolfgang Nejdl
Alex Delis Cesare Pautasso
Marlon Dumas Mourad Ouzzani
Schahram Dustdar Manfred Reichert
Johann Eder Stefanie Rinderle

Klaus Fischer Uwe Riss
Avigdor Gal Timos Sellis
Fausto Giunchiglia Anthony Tomasic
Paul Grefen Farouk Toumani
Mohand-Said Hacid Patrick Valduriez

Manfred Hauswirth
Wil van der Aalst
Willem-Jan van den Heuvel
Maria Esther Vidal

Martin Hepp Mathias Weske Carsten Holtmann Jian Yang

Nenad Ivezic Vladimir Zadorozhny Paul Johannesson

GADA 2006 Program Committee

Akshai Aggarwal Antonio Garcia Dopico Alan Sussman Artur Andrzejak Alastair Hampshire Azzedine Boukerche Alberto Sanchez Beniamino Di Martino

Alvaro A.A. Fernandes Bhanu Prasad Angelos Bilas Bing Bing Zhou Carmela Comito
Carole Goble
Costin Badica
Dana Petcu
Daniel S. Katz
David Walker
Domenico Laforenza
Eduardo Huedo

Elghazali Talbi Enrique Soler Fatos Xhafa Felix Garcia Francisco Luna

Franciszek Seredynski Gregorio Martinez Hamid Sarbazi-Azad Heinz Stockinger Ignacio M. Llorente Jack Dongarra Jan Humble Jemal Abawajy Jesús Carretero Jinjun Chen Jon Maclaren

Kostas Karasavvas Kurt Stockinger Laurence T. Yang

Juan A. Botá Blava

Jose L. Bosque

Jose M. Peña

Manish Parashar Manuel Salvadores Marcin Paprzycki Maía Eugenia de Pool

Maria Ganzha Mario Cannataro Marios Dikaiakos Mark Baker Mirela Notare

Mohamed Ould-Khaoua Neil P. Chue Hong Omer F. Rana Panaviotis Periorellis

Pascal Bouvry
Rainer Unland
Rajkumar Buyya
Reagan Moore
Rizos Sakellariou
Rosa M. Badia
Ruben S. Montero
Santi Caballé Llobet

Sattar B. Sadkhan Almaliky

Savitri Bevinakoppa Stefan Egglestone Thierry Priol Toni Cortes Valdimir Getov Víctor Robles

ODBASE 2006 Program Committee

Sibel Adali
Maristella Agosti
Bill Andersen
Juergen Angele
Franz Baader
Sonia Bergamaschi
Alex Borgida
Christoph Bussler

Marco Antonio Casanova

Silvana Castano Tiziana Catarci Giuseppe De Giacomo Stefan Decker Rainer Eckstein Johann Eder

Mohand Said Hacid

Jeff Heflin Jim Hendler Edward Hung

Arantza Illarramendi Vipul Kashyap Larry Kerschberg

Ross King Roger

XIV Organization

Harumi Kuno
Georg Lausen
Michele Missikoff
John Mylopoulos
Wolfgang Nejdl
Christine Parent
Thomas Risse
Heiko Schuldt

Peter Schwarz
Peter Spyns
York Sure
Sergio Tessaris
David Toman
Guido Vetere
Chris Welty

DOA 2006 Program Committee

Cristiana Amza
Matthias Anlauff
Mark Baker
Guruduth Banavar
Gordon Blair
Harold Carr
Geoff Coulson

Francisco "Paco" Curbera

Frank Eliassen
Tomoya Enokido
Patrick Eugster
Pascal Felber
Jeff Gray
Stefan Gruner
Mohand-Said Hacid

Franz Hauck

Naohiro Hayashibara Hui-Huang Hsu Mehdi Jazayeri Eric Jul Bettina Kemme Fabio Kon

Joe Loyall Peter Loehr Frank Manola Keith Moore Francois Pacull Simon Patarin Peter Pietzuch Joao Pereira Arno Puder Rajendra Raj

Andry Rakotonirainy Luis Rodrigues Isabelle Rouvellou Rick Schantz Heinz-W. Schmidt Douglas Schmidt Richard Soley Michael Stal

Jean-Bernard Stefani

Stefan Tai Hong Va Leong Steve Vinoski Norbert Voelker Andrew Watson Torben Weis Doug Wells Michael Zapf

OTM Conferences 2006 Additional Reviewers

Carola Aiello Reza Akbarinia Nicolas Anciaux Samuil Angelov Fulvio D'Antonio Philipp Baer Gabriele Barchiesi Carlo Bellettini

Domenico Beneventano

Jesus Bermudez

Devis Bianchini Markus Kalb Steffen Bleul Marijke Keet Ralph Bobrik Kyong Hoon Kim Silvia Bonomi Mirko Knoll Abdelhamid Bouchachia Natallia Kokash Jose de Ribamar Braga Irvna Kozlova Christian Kunze Vanessa Braganholo Lars Braubach Steffen Lamparter Gert Brettlecker Christoph Langguth Marek Lehmann Andrea Cali Domenico Lembo Ken Cavanaugh Emmanuel Coquery Elvis Leung Felix J. Garcia Clemente Mario Lezoche Fabio Coutinho Baoping Lin Georges DaCosta An Liu Antonio De Nicola Hai Liu

Fabien Demarchi Andrei Lopatenko Henry Detmold Carsten Lutz Christoph Dorn Linh Thao Ly Viktor S. Wold Eide Jurgen Mangler Hazem Elmeleegy Vidal Martins Mohamed Y. ElTabakh Pietro Mazzoleni Massimo Mecella. Michael Erdmann Rik Eshuis Michele Melchiori Katrina Falkner Eduardo Mena Alfio Ferrara Marco Mesiti Ilya Figotin Tommie Meyer Anna Formica Hugo Miranda Nadine Froehlich Jose Mocito Jochen Fromm Thorsten Moeller Mati Golani Stefano Montanelli Gangadharan Gr Cristian Madrigal Mora

Tim Grant Francesco Moscato
Francesco Guerra Anan Mrey
Pablo Guerrero Dominic Müller

Yuanbo Guo Sharath Babu Musunoori Peter Haase Meenakshi Nagarajan Hakim Hacid Dirk Nagara

Hakim Hacid Dirk Neumann
Christian Hahn Johann Oberleitner
Bjorn-Oliver Hartmann Nunzia Osimi
Martin Henkel Zhengxiang Pan
Eelco Herder Paolo Perlasca

Edward Ho Illia Petrov
Thomas Hornung Horst Pichler
Sergio Ilarri Christian Platzer

XVI Organization

Antonella Poggi Alexander Pokahr Konstantin Pussep

Abir Qasem

Michael von Riegen Francisco Reverbel Haggai Roitman Kurt Rohloff Dumitru Roman

Florian Rosenberg Nicolaas Ruberg

Kai Sachs

Martin Saternus Monica Scannapieco

Daniel Schall Sergio Serra Kai Simon

Esteban Lean Soto Stefano Spaccapietra Michael Springmann

Iain Stalker

Nenad Stojanovic Umberto Straccia Gerd Stumme Francesco Taglino Robert Tairas Wesley Terpstra Eran Toch

Anni-Yasmin Turhan

Martin Vasko

Salvatore Venticinque Maurizio Vincini Johanna Voelker Jochem Vonk Denny Vrandecic Andrzej Walczak Ting Wang Thomas Weise Thomas Weishupl Christian von der Weth

Karl Wiggisser

Hui Wu Jianming Ye Sonja Zaplata Weiliang Zhao Uwe Zdun Ingo Zinnikus

Table of Contents – Part II

Grid Computing, High Performance and Distributed Applications (GADA) 2006 International Conference

GADA 2006 International Conference (Grid Computing,

High-Performance and Distributed Applications) PC Co-chairs' Message	1117
Keynote	
Data-Oriented Distributed Computing for Science: Reality and Possibilities	1119
From Intelligent Content to Actionable Knowledge: Research Directions and Opportunities Under the EU's Framework Programme 7, 2007-2013	1125
Resource Selection and Management	
Resource Selection and Application Execution in a Grid: A Migration Experience from GT2 to GT4	1132
A Comparative Analysis Between EGEE and Grid Way Workload Management Systems	1143
Grid and HPC Dynamic Load Balancing with Lattice Boltzmann Models	1152
P2P-Based Systems	
Trust Enforcement in Peer-to-Peer Massive Multi-player Online Games	1163

A P2P-Based System to Perform Coordinated Inspections in Nuclear	1101
Power Plants	1181
Grid File Transfer	
Grid File Transfer During Deployment, Execution, and Retrieval Françoise Baude, Denis Caromel, Mario Leyton, Romain Quilici	1191
A Parallel Data Storage Interface to GridFTP	1203
Parallel Applications	
Parallelization of a Discrete Radiosity Method Using Scene Division Rita Zrour, Fabien Feschet, Rémy Malgouyres	1213
A Mixed MPI-Thread Approach for Parallel Page Ranking Computation	1223
Scheduling in Grid Environments	
A Decentralized Strategy for Genetic Scheduling in Heterogeneous Environments	1234
Solving Scheduling Problems in Grid Resource Management Using an Evolutionary Algorithm	1252
Integrating Trust into Grid Economic Model Scheduling Algorithm Chunling Zhu, Xiaoyong Tang, Kenli Li, Xiao Han, Xilu Zhu, Xuesheng Qi	1263
Autonomous and Autonomic Computing	
QoS-Driven Web Services Selection in Autonomic Grid Environments Danilo Ardagna, Gabriele Giunta, Nunzio Ingraffia, Raffaela Mirandola, Barbara Pernici	1273

Table of Contents – Part II	XIX
Autonomous Layer for Data Integration in a Virtual Repository	1290
Grid Infrastructures for Data Analysis	
An Instrumentation Infrastructure for Grid Workflow Applications Bartosz Balis, Hong-Linh Truong, Marian Bubak, Thomas Fahringer, Krzysztof Guzy, Kuba Rozkwitalski	1305
A Dynamic Communication Contention Awareness List Scheduling Algorithm for Arbitrary Heterogeneous System	1315
Access Control and Security	
Distributed Provision and Management of Security Services in Globus Toolkit 4	1325
A Fine-Grained and X.509-Based Access Control System for Globus Hristo Koshutanski, Fabio Martinelli, Paolo Mori, Luca Borz, Anna Vaccarelli	1336
Programming Aspects for Developing Scientific Grid Components	
Dynamic Reconfiguration of Scientific Components Using Aspect Oriented Programming: A Case Study	1351
MGS: An API for Developing Mobile Grid Services	1361
Databases and Data Grids	
Using Classification Techniques to Improve Replica Selection in Data Grid	1376
11 ao 3 ao, 3 ao 11 ao 109, 22 ao 22 ao, 25 ao 21 ao 14 a	

Searching Moving Objects in a Spatio-temporal Distributed Database Servers System	1388
Mauricio Marín, Andrea Rodríguez, Tonio Fincke, Carlos Román	1000
Distributed Applications	
A Generic Deployment Framework for Grid Computing and Distributed Applications	1402
CBIR on Grids	1412
Evaluation	
Performance Evaluation of Group Communication Architectures in Large Scale Systems Using MPI	1422
Distributed Objects and Applications (DOA) 2006 International Conference	
DOA 2006 International Conference (Distributed Objects and Applications) PC Co-chairs' Message	1433
Keynote	
Everyobjects in the Pervasive Computing Landscape	1434
Services	
Using Selective Acknowledgements to Reduce the Memory Footprint of Replicated Services	1435
Modularization of Distributed Web Services Using Aspects with Explicit Distribution (AWED)	1449
ANIS: A Negotiated Integration of Services in Distributed	140=
Environments	1467

Communications

Towards a Generic Group Communication Service	1485
Optimizing Pub/Sub Systems by Advertisement Pruning	1503
A Specification-to-Deployment Architecture for Overlay Networks Stefan Behnel, Alejandro Buchmann, Paul Grace, Barry Porter, Geoff Coulson	1522
Searching Techniques	
Distributed Lookup in Structured Peer-to-Peer Ad-Hoc Networks	1541
A Document-Centric Component Framework for Document Distributions	1555
Shepherdable Indexes and Persistent Search Services for Mobile Users	1576
Types and Notations	
Distributed Abstract Data Types	1594
Aligning UML 2.0 State Machines and Temporal Logic for the Efficient Execution of Services	1613
Developing Mobile Ambients Using an Aspect-Oriented Software Architectural Model	1633
Adaptivity	
Component QoS Contract Negotiation in Multiple Containers	1650

RIMoCoW, a Reconciliation Infrastructure for CORBA Component-Based Applications in Mobile Environments	1668
A Component-Based Planning Framework for Adaptive Systems	1686
Middleware	
A Case for Event-Driven Distributed Objects	1705
MoCoA: Customisable Middleware for Context-Aware Mobile Applications	1722
A Framework for Adaptive Mobile Objects in Heterogeneous Environments	1739
Distribution Support	
A Novel Object Pool Service for Distributed Systems	1757
A Java Framework for Building and Integrating Runtime Module Systems	1772
Transparent and Dynamic Code Offloading for Java Applications Nicolas Geoffray, Gaël Thomas, Bertil Folliot	1790
Self-organisation	
Self-organizing and Self-stabilizing Role Assignment in Sensor/Actuator Networks	1807

Table of Contents – Part II	XXIII
Towards Self-organizing Distribution Structures for Streaming Media	1825
Bulls-Eye – A Resource Provisioning Service for Enterprise Distributed Real-Time and Embedded Systems	1843
Author Index	1863

Table of Contents – Part I

Cooperative Information Systems (CoopIS) 2006 International Conference

CoopIS 2006 International Conference (International Conference on Cooperative Information Systems) PC Co-chairs' Message	1
Keynote	
Workflow-Based Coordination and Cooperation in a Service World	2
Distributed Information Systems I	
Distributed Triggers for Peer Data Management	17
Satisfaction-Based Query Load Balancing	36
Efficient Dynamic Operator Placement in a Locally Distributed Continuous Query System	54
Distributed Information Systems II	
Views for Simplifying Access to Heterogeneous XML Data	72
SASMINT System for Database Interoperability in Collaborative Networks	91
Querying E-Catalogs Using Content Summaries	109

Workflow Modelling

WorkflowNet2BPEL4WS: A Tool for Translating Unstructured Workflow Processes to Readable BPEL	127
Let's Dance: A Language for Service Behavior Modeling	145
Dependability and Flexibility Centered Approach for Composite Web Services Modeling	163
Aspect-Oriented Workflow Languages	183
Workflow Management and Discovery	
A Portable Approach to Exception Handling in Workflow Management Systems	201
Methods for Enabling Recovery Actions in Ws-BPEL Stefano Modafferi, Eugenio Conforti	219
BPEL Processes Matchmaking for Service Discovery Juan Carlos Corrales, Daniela Grigori, Mokrane Bouzeghoub	237
Evaluation of Technical Measures for Workflow Similarity Based on a Pilot Study	255
Dynamic and Adaptable Workflows	
Evolution of Process Choreographies in DYCHOR	273
Worklets: A Service-Oriented Implementation of Dynamic Flexibility in Workflows	291
Wil M.P. van der Aalst	

462

Paulo Manoel Mafra, Rafael R. Obelheiro

José Eduardo M.S. Brandão, Joni da Silva Fraga,

P2P Systems

An Adaptive Probabilistic Replication Method for Unstructured P2P Networks	480
Dimitrios Tsoumakos, Nick Roussopoulos	
Towards Truthful Feedback in P2P Data Structures	498
Efficient Peer-to-Peer Belief Propagation	516
Collaborative Systems Design and Development	
Designing Cooperative IS: Exploring and Evaluating Alternatives Volha Bryl, Paolo Giorgini, John Mylopoulos	533
Natural MDA: Controlled Natural Language for Action Specifications on Model Driven Development	551
Managing Distributed Collaboration in a Peer-to-Peer Network	569
Collaborative Systems Development	
Developing Collaborative Applications Using Sliverware	587
A Framework for Building Collaboration Tools by Leveraging Industrial Components	605
Evaluation of a Conceptual Model-Based Method for Discovery of Dependency Links	625
Cooperative IS Applications	
Advanced Recommendation Models for Mobile Tourist Information	643

Table of Contents – Lart I Az	ΛΙΛ
Keeping Track of the Semantic Web: Personalized Event Notification Annika Hinze, Reuben Evans	661
A Gestures and Freehand Writing Interaction Based Electronic Meeting Support System with Handhelds	679
Ontologies, Databases and Applications of Semantics (ODBASE) 2006 International Conference	
ODBASE 2006 International Conference (Ontologies, DataBases, and Applications of Semantics) PC Co-chairs' Message	697
Keynote	
SomeWhere: A Scalable Peer-to-Peer Infrastructure for Querying Distributed Ontologies	698
Foundations	
Querying Ontology Based Database Using OntoQL (An Ontology Query Language)	704
Description Logic Reasoning with Syntactic Updates	722
From Folksologies to Ontologies: How the Twain Meet	738
Transactional Behavior of a Workflow Instance	756
Metadata	
An Open Architecture for Ontology-Enabled Content Management Systems: A Case Study in Managing Learning Objects	772
Ontology Supported Automatic Generation of High-Quality Semantic Metadata	791

Brokering Multisource Data with Quality Constraints	807
Design	
Enhancing the Business Analysis Function with Semantics	818
Ontology Engineering: A Reality Check	836
Conceptual Design for Domain and Task Specific Ontology-Based Linguistic Resources	855
Ontology Mappings	
Model-Driven Tool Interoperability: An Application in Bug Tracking Marcos Didonet Del Fabro, Jean Bézivin, Patrick Valduriez	863
Reducing the Cost of Validating Mapping Compositions by Exploiting Semantic Relationships	882
Using Fuzzy Conceptual Graphs to Map Ontologies	891
Formalism-Independent Specification of Ontology Mappings – A Metamodeling Approach	901
Information Integration	
Virtual Integration of Existing Web Databases for the Genotypic Selection of Cereal Cultivars	909
SMOP: A Semantic Web and Service Driven Information Gathering Environment for Mobile Platforms	927
Özgür Gümüs, Geylani Kardas, Oguz Dikenelli, Riza Cenk Erdur, Ata Önal	•

Peter Schwarz, Yu Deng, Julia E. Rice

Table of Contents – Part I

XXXI

XXXII Table of Contents – Part I

Towards an Inductive Methodology for Ontology Alignment Through Instance Negotiation	1058
Ignazio Palmisano, Luigi Iannone, Domenico Redavid, Giovanni Semeraro	1000
Combining Web-Based Searching with Latent Semantic Analysis to Discover Similarity Between Phrases	1075
A Web-Based Novel Term Similarity Framework for Ontology Learning	1092
Author Index	1111