

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

Alfred Kobsa

University of California, Irvine, CA, 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

TU Dortmund University, Germany

Madhu Sudan

Microsoft Research, Cambridge, MA, USA

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Asunción Gómez-Pérez Yong Yu
Ying Ding (Eds.)

The Semantic Web

Fourth Asian Conference, ASWC 2009
Shanghai, China, December 6-9, 2009
Proceedings

Volume Editors

Asunción Gómez-Pérez
Universidad Politécnica de Madrid
Facultad de Informática
Dpto. de Inteligencia Artificial
Ontology Engineering Group
Campus de Montegancedo s/n
28660, Boadilla del Monte, Madrid,
E-mail: asun@fi.upm.es

Yong Yu
Shanghai Jiao Tong University
Data and Knowledge Management
Shanghai, 200030, China
E-mail: yyu@apex.sjtu.edu.cn

Ying Ding
Indiana University
School of Library and Information Science
1320 E. 10th St., LI 025
Bloomington, IN 47405, USA
E-mail: dingying@indiana.edu

Library of Congress Control Number: 2009939925

CR Subject Classification (1998): H.2.8, I.2.4, I.2.6, H.3.5, H.1, H.3.3, H.2

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

ISSN 0302-9743
ISBN-10 3-642-10870-9 Springer Berlin Heidelberg New York
ISBN-13 978-3-642-10870-9 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.com

© Springer-Verlag Berlin Heidelberg 2009
Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 12814473 06/3180 5 4 3 2 1 0

Preface

The Annual Asian Semantic Web Conference is one of the largest regional events in Asia with focused topics related to the Semantic Web. With the decade-round endeavor of Semantic Web believers, researchers and practitioners, the Semantic Web has made remarkable progress recently. It has raised significant attention from US and UK governments, as well as the European Commission who are willing to deploy Semantic Web technologies to enhance the transparency of eGovernment. The Linked Open Data initiative is on its way to convert the current document Web into a data Web and to further enabling various data and service mashups. The fast adoption of Semantic Web technologies in medical and life sciences has created impressive showcases to the world. All these efforts are a crucial step toward enabling the take-off and the success of the Semantic Web.

The First Asian Semantic Web Conference was successfully held in China in 2006. With the following editions in Korea in 2007 and Thailand in 2008, it fostered a regional forum for connecting researchers and triggering innovations. This year, the 4th Asian Semantic Web Conference was held in Shanghai, China. We received 63 submissions from Asia, Europe, and North America, and 25 papers were accepted (the acceptance rate is around 40%). Each submission was reviewed by at least three members of the Program Committee. The Chairs moderated the discussion of conflict reviews or invited external reviewers to reach the final decisions. These submissions cover a broad range of topics including, query languages and optimization, rule and logics, scalable reasoning, semantic content generation, database and semantics, Semantic Web services, eSemantics (e.g., e-Business, e-Science, e-Learning, e-Culture, e-Health), social Web and semantics, semantic graph mining, security for Semantic Web, ontology modeling, ontology management, to name a few.

We, on behalf of the conference Program Committee, are grateful to numerous individuals for their continuous contribution and support. We are especially thankful to Linyun Fu from Shanghai Jiao Tong University and Shanshan Chen from Indiana University for their diligent work to facilitate the organization of this conference.

October, 2009

Asun Gómez-Pérez
Yong Yu
Ying Ding

Organization

Conference Chairs

James A. Hendler	Rensselaer Polytechnic Institute, USA
Ruqian Lu	Chinese Academy of Sciences, China

Program Committee Chairs

Asunción Gómez Pérez	Universidad Politecnica de Madrid, Spain
Yong Yu	Shanghai Jiao Tong University, China
Ying Ding	Indiana University, USA

Workshop Chair

Hong-Gee Kim	Seoul National University, Korea
--------------	----------------------------------

Tutorial Chair

Jie Bao	Rensselaer Polytechnic Institute, USA
---------	---------------------------------------

Poster and Demo Chair

Raúl García-Castro	Universidad Politécnica de Madrid, Spain
--------------------	--

Local Organizing Chairs

Xuanjing Huang	Fudan University, China
Xiangyang Xue	Fudan University, China

Program Committee Members

Guadalupe Aguado-de-Cea	Universidad Politecnica de Madrid, Spain
Harith Alani	Knowledge Media Institute, Open University, UK
Yuan An	Drexel University, USA
Grigoris Antoniou	FORTH-ICS, Greece
Lora Aroyo	Vrije Universiteit Amsterdam, The Netherlands
Budak Arpinar	University of Georgia, USA
Walter Binder	University of Lugano, Switzerland
Paolo Bouquet	University of Trento, Italy
Dan Brickley	FOAF project

Paul Buitelaar	DERI - National University of Ireland, Galway, Ireland
Christoph Bussler	Merced Systems, Inc., USA
Liliana Cabral	Knowledge Media Institute, The Open University, UK
Mingmin Chi	Fudan University, China
Oscar Corcho	Universidad Politecnica de Madrid, Spain
Isabel Cruz	University of Illinois at Chicago, USA
Philippe Cudre-Mauroux	MIT, USA
Bernardo Cuenca Grau	University of Oxford, UK
Mathieu d'Aquin	Knowledge Media Institute, The Open University, UK
Thierry Declerck	DFKI GmbH, Language Technology Lab, Germany
Paola Di Maio	University of Strathclyde, UK
Ian Dickinson	HP Labs, Bristol, UK
Stefan Dietze	Knowledge Media Institute, Open University, UK
Rubing Duan	University of Southern California, USA
Martin Dzbor	Knowledge Media Institute, The Open University, UK
Fabien Gandon	INRIA, France
Raúl García-Castro	Universidad Politécnica de Madrid, Spain
Claudio Gutierrez	Universidad de Chile, Chile
Volker Haarslev	Concordia University, Canada
Axel Hahn	University of Oldenburg, Germany
Harry Halpin	University of Edinburgh, UK
Dingyi Han	Shanghai Jiao Tong University, China
Siegfried Handschuh	DERI - National University of Ireland, Galway, Ireland
Martin Hepp	Universität der Bundeswehr München, Germany
Stijn Heymans	Vienna University of Technology, Austria
Andreas Hotho	University of Kassel, Germany
Zhisheng Huang	Vrije University Amsterdam, The Netherlands
Eero Hyvönen	Helsinki University of Technology (TKK), Finland
Giovambattista Ianni	University of Calabria, Italy
Ryutaro Ichise	National Institute of Informatics, Japan
Elin K. Jacob	Indiana University Bloomington, USA
Jason Jung	Yeungnam University, Korea
Takahiro Kawamura	TOSHIBA Corporation, Japan
Yoshinobu Kitamura	I.S.I.R., Osaka University, Japan
Matthias Klusch	DFKI GmbH, Germany
Manolis Koubarakis	National and Kapodistrian University of Athens, Greece
Georgia Koutrika	Stanford University, USA
Kouji Kozaki	I.S.I.R., Osaka University, Japan
Ruben Lara	Telefonica R&D, Spain
Alain Léger	France Telecom R&D - Research, France
Juanzi Li	Department of Computer Science, Tsinghua University, China
Krissada Maleewong	Shinawatra University, Thailand
Mihhail Matskin	KTH, Sweden

Yutaka Matsuo	University of Tokyo, Japan
Diana Maynard	University of Sheffield, UK
Brian McBride	Hewlett Packard, UK
Dunja Mladenic	J.Stefan Institute, Slovenia
Wolfgang Nejdl	L3S and University of Hannover, Germany
Barry Norton	Knowledge Media Institute, The Open University, UK
Daniel Oberle	SAP, Germany
Leo Obrst	The MITRE Corporation, USA
Daniel Olmedilla	Telefonica R&D, Spain
Jeff Z. Pan	University of Aberdeen, UK
Massimo Paolucci	DoCoMo Euro labs
Terry Payne	University of Liverpool, UK
Carlos Pedrinaci	Knowledge Media Institute, The Open University, UK
Ruzica Piskac	Swiss Federal Institute of Technology (EPFL), Switzerland
Dimitris Plexousakis	Institute of Computer Science, FORTH, Greece
Guilin Qi	University of Karlsruhe, Germany
Yuzhong Qu	Southeast University, China
Ulrich Reimer	University of Applied Sciences St. Gallen, Switzerland
Marta Sabou	Knowledge Media Institute, The Open University, UK
Twittie Senivongse	Chulalongkorn University, Thailand
Michael Stollberg	SAP Research CEC Dresden, Germany
Umberto Straccia	ISTI-CNR, Italy
Heiner Stuckenschmidt	University of Mannheim, Germany
Rudi Studer	University of Karlsruhe, Germany
Mari Carmen Suárez-Figueroa	Universidad Politécnica de Madrid, Spain
Vojtech Svatek	University of Economics, Prague, Czech Republic
Jie Tang	Tsinghua University, China
Sergio Tessaris	Free University of Bozen - Bolzano, Italy
Robert Tolksdorf	Freie Universität Berlin, Germany
Ioan Toma	STI Innsbruck, Austria
Thanh Tran	AIFB, University Karlsruhe, Germany
Raphael Troncy	EURECOM, France
Victoria Uren	University of Sheffield, UK
Tomas Vitvar	University of Innsbruck, Austria
Holger Wache	University of Applied Science Northwestern Switzerland, Switzerland
Haofen Wang	Shanghai Jiao Tong University, China
Krzysztof Wecel	Poznan University of Economics, Poland
Takahira Yamaguchi	Keio University, Japan
Zhixiong Zhang	Library of Chinese Academy of Science, China
Hai Zhuge	Institute of Computing Technology, Chinese Academy of Sciences, China

Additional Reviewers

Chris van Aart	Angela Fogarolli	Jose Mora
Sebastian Blohm	Chiara Ghidini	Takeshi Morita
Juergen Bock	Rigel Gjomemo	José Ángel Ramos
Stefano Bortoli	Andreas Harth	Yuan Ren
Gianluca Correndo	Zhixing Huang	Merwyn Taylor
Martin Doerr	Qiu Ji	Alex Villazon
Jun Fang	Beate Krause	
Cristina Feier	Lina Lubyte	

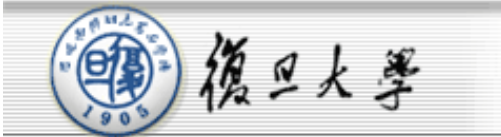
Posters and Demos Program Committee

Yuan An	Drexel University, USA
Walter Binder	University of Lugano, Switzerland
Paolo Bouquet	University of Trento, Italy
Mari Carmen Suarez-Figueroa	Universidad Politecnica de Madrid, Spain
Tom Heath	Talis
Philipp Kaerger	L3S Research Center, Germany
Michel Klein	Vrije University Amsterdam, The Netherlands
Kouji Kozaki	Osaka University, Japan
Reto Krummenacher	STI Innsbruck, Austria
Adrian Mocan	STI Innsbruck, Austria
Malgorzata Mochol	FU Berlin, Germany
Carlos Pedrinaci	The Open University, UK
Ruzica Piskac	EPFL, Switzerland
Chris Poppe	Ghent University, Belgium
Martin Szomszor	University of Southampton, UK
Denny Vrandečić	Universitaet Karlsruhe, Germany

Sponsors

The Google logo, featuring the word "Google" in its characteristic multi-colored font (blue, red, yellow, blue, green, red).

<http://research.google.com/>



<http://www.fudan.edu.cn/>



STI · INTERNATIONAL

<http://www.sti2.org/>

Table of Contents

Ontologies

Cross-Lingual Ontology Mapping – An Investigation of the Impact of Machine Translation	1
<i>Bo Fu, Rob Brennan, and Declan O’Sullivan</i>	
Modeling Common Real-Word Relations Using Triples Extracted from n-Grams	16
<i>Ruben Sipoš, Dunja Mladenić, Marko Grobelnik, and Janez Brank</i>	
Supporting the Development of Data Wrapping Ontologies	31
<i>Lina Lubyte and Sergio Tessaris</i>	
A Conceptual Model for a Web-Scale Entity Name System	46
<i>Paolo Bouquet, Themis Palpanas, Heiko Stoermer, and Massimiliano Vignolo</i>	
What Makes a Good Ontology? A Case-Study in Fine-Grained Knowledge Reuse	61
<i>Miriam Fernández, Chwhynny Overbeeke, Marta Sabou, and Enrico Motta</i>	
Repairing the Missing is-a Structure of Ontologies	76
<i>Patrick Lambrix, Qiang Liu, and He Tan</i>	
Entity Resolution in Texts Using Statistical Learning and Ontologies . . .	91
<i>Tadej Štajner and Dunja Mladenić</i>	
An Effective Similarity Propagation Method for Matching Ontologies without Sufficient or Regular Linguistic Information	105
<i>Peng Wang and Baowen Xu</i>	
Deciding Query Entailment for Fuzzy <i>SHLN</i> Ontologies	120
<i>Jingwei Cheng, Z.M. Ma, Fu Zhang, and Xing Wang</i>	

Semantic Web Application

Merging and Ranking Answers in the Semantic Web: The Wisdom of Crowds	135
<i>Vanessa Lopez, Andriy Nikolov, Miriam Fernandez, Marta Sabou, Victoria Uren, and Enrico Motta</i>	
LODE: Linking Open Descriptions of Events	153
<i>Ryan Shaw, Raphaël Troncy, and Lynda Hardman</i>	

A Semantic Wiki Based Light-Weight Web Application Model	168
<i>Jie Bao, Li Ding, Rui Huang, Paul R. Smart, Dave Braines, and Gareth Jones</i>	
Guidelines for the Specification and Design of Large-Scale Semantic Applications	184
<i>Óscar Muñoz-García and Raúl García-Castro</i>	
Semantic-Linguistic Feature Vectors for Search: Unsupervised Construction and Experimental Validation	199
<i>Stein L. Tomassen and Darijus Strasunskas</i>	
Semantic Web Services	
Utilising Task-Patterns in Organisational Process Knowledge Sharing	216
<i>Bo Hu, Ying Du, Liming Chen, Uwe V. Riss, and Hans-Friedrich Witschel</i>	
Reasoning about Partially Ordered Web Service Activities in PSL	231
<i>Michael Gruninger and Xing Tan</i>	
Two-Fold Service Matchmaking – Applying Ontology Mapping for Semantic Web Service Discovery	246
<i>Stefan Dietze, Neil Benn, John Domingue, Alex Conconi, and Fabio Cattaneo</i>	
An Approach to Analyzing Dynamic Trustworthy Service Composition	261
<i>Guisheng Fan, Huiqun Yu, Liqiong Chen, and Dongmei Liu</i>	
Semantic Web Technology	
Improving Folksonomies Using Formal Knowledge: A Case Study on Search	276
<i>Sofia Anagnostou, Marta Sabou, and Enrico Motta</i>	
Querying the Web of Data: A Formal Approach	291
<i>Paolo Bouquet, Chiara Ghidini, and Luciano Serafini</i>	
A Relevance-Directed Algorithm for Finding Justifications of DL Entailments	306
<i>Qiu Ji, Guilin Qi, and Peter Haase</i>	
Entropy-Based Metrics for Evaluating Schema Reuse	321
<i>Xixi Luo and Joshua Shinavier</i>	
Overcoming Schema Heterogeneity between Linked Semantic Repositories to Improve Coreference Resolution	332
<i>Andriy Nikolov, Victoria Uren, Enrico Motta, and Anne de Roeck</i>	

Social Semantic Rule Sharing and Querying in Wellness Communities	347
<i>Harold Boley, Taylor Michael Osmun, and Benjamin Larry Craig</i>	
Demo Papers	
Semantic Rules on Drug Discovery Data	362
<i>Sashikiran Challa, David Wild, Ying Ding, and Qian Zhu</i>	
RepOSE: An Environment for Repairing Missing Ontological Structure	365
<i>Patrick Lambrix, Qiang Liu, and He Tan</i>	
SHARE: A Semantic Web Query Engine for Bioinformatics	367
<i>Ben P. Vandervalk, E. Luke McCarthy, and Mark D. Wilkinson</i>	
IP-Explorer: A Semantic Web Based Intellectual Property Knowledge Base and Trading Platform.....	370
<i>Lei Zhang, Hugh Glaser, Hai-Tao Zheng, and Ian Millard</i>	
Author Index	375