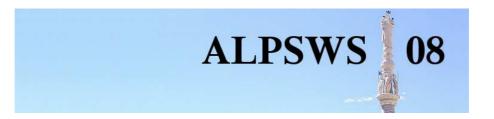
# International Conference on Logic Programming ICLP 2008

Udine, Italy 9-13 December 2008

ICLP 2008 Workshop

ALPSWS 2008: Applications of Logic Programming to the (Semantic) Web and Web Services

> 12 December 2008 Proceedings



Editors:

J. de Bruijn, S. Heymans, D. Pearce, A. Polleres, and E. Ruckhaus

© Copyright 2008 front matter by the editors; individual papers by the individual authors. Copying permitted for private and scientific purposes. Re-publication of material in this volume requires permission of the copyright owners.

### Preface

This volume contains the papers presented at the third international workshop on *Applications of Logic Programming to the (Semantic) Web and Web Services (ALPSWS2008)* held on the 12h of December 2008 in Udine, Italy, as part of the 24<sup>th</sup> International Conference on Logic Programming (ICLP 2008).

The advent of the Semantic Web promises machine readable semantics and a machine-processable next generation of the Web. The first step in this direction is the annotation of static data on the Web by machine processable information about knowledge and its structure by means of Ontologies. The next step in this direction is the annotation of dynamic applications and services invocable over the Web in order to facilitate automation of discovery, selection and composition of semantically described services and data sources on the Web by intelligent methods; this is called Semantic Web Services.

Many workshops and conferences have been dedicated to these promising areas, mostly covering generic topics. The ALPSWS workshop series has a slightly different goal. Rather that bringing together people from a wide variety of research fields with different understandings of the topic, we have tried to focus on the various application areas and approaches in this domain from the perspective of declarative logic programming (LP).

The workshop provides a snapshot of the state of the art of the applications of LP to the Semantic Web and to Semantic Web Services, with the following main objectives and benefits:

- Bring together people from different sub-disciplines of LP to focus on technological solutions and applications from LP to the problems of the Web.
- Promote further research in this interesting application field.

The 2008 edition of ALPSWS includes work on the topic of *integrating ontologies and rules*, but also integration with machine learning. Furthermore, we can see an interest in *integration with database technology*, a prerequisite for large-scale adoption of Semantic Web technology. Then, two important challenges in reasoning on the Web are addressed, namely combining open- and closed-world reasoning and *reasoning with large data sets*. Finally, there is an application of logic programming to service description and drug discovery.

November 2008

The Editors

## Workshop Organization

#### **Organizing Committee**

Jos de Bruijn Stijn Heymans Axel Polleres David Pearce Edna Ruckhaus

#### **Programme Committee**

Carlos Damasio Thomas Eiter Cristina Feier Gopal Gupta Claudio Gutierrez Giovambattista Ianni Uwe Keller Markus Kroetzsch Zoe Lacroix Gergely Lukácsy Wolfgang May Enrico Pontelli Hans Tompits Alejandro Vaisman Maria Esther Vidal Gerd Wagner

#### **Additional Reviewers**

Aidan Hogan Thomas Krennwallner Francesco Ricca Mantas Simkus

## Table of Contents

### Full Papers

Upgrading Databases to Ontologies Gisella Bennardo, Giovanni Grasso, Nicola Leone, and Francesco Ricca	1
A Sound and Complete Algorithm for Simple Conceptual Logic Programs Cristina Feier and Stijn Heymans	15
Combining Logic Programming with Description Logics and Machine Learning for the Semantic Web Francesca Alessandra Lisi	29
A Semantic Stateless Service Description Language	43
Large scale reasoning on the Semantic Web Balázs Kádár, Peter Szeredi and Gergely Lukácsy	57
Reasoning on the Web with Open and Closed Predicates Gerd Wagner, Adrian Giurca, Ion-Mircea Diaconescu, Grigoris Antoniou, Anastasia Analyti and Carlos Damasio	71
Short Paper	

A Preliminary Report on Answering Complex Queries related to Drug	
Discovery using Answer Set Programming	85
Olivier Bodenreider, Zeynep Coban, Mahir Doganay, Esra Erdem and Hilal	
Kosucu	