INTRODUCTION TO THE TECHNICAL COMMUNICATIONS OF THE
26TH INTERNATIONAL CONFERENCE ON LOGIC PROGRAMMING

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The Logic Programming (LP) community, through the Association for Logic Programming (ALP) and its Executive Committee, decided to introduce for 2010 important changes in the way the main yearly results in LP and related areas are published. Whereas such results have appeared to date in standalone volumes of proceedings of the yearly International Conferences on Logic Programming (ICLP), and this method—fully in the tradition of Computer Science (CS)—has served the community well, it was felt that an effort needed to be made to achieve a higher level of compatibility with the publishing mechanisms of other fields outside CS.

In order to achieve this goal without giving up the traditional CS conference format a different model has been adopted starting in 2010 in which the yearly ICLP call for submissions takes the form of a joint call for a) full papers to be considered for publication in a special issue of the journal, and b) shorter technical communications to be considered for publication in a separate, standalone volume, with both kinds of papers being presented by their authors at the conference. Together, the journal special issue and the volume of short technical communications constitute the proceedings of ICLP.

The journal proceedings of the 26th International Conference on Logic Programming are the first of a series of yearly special issues of Theory and Practice of Logic Programming (TPLP) putting this new model into practice. It contains the papers accepted from those submitted as full papers (i.e., for TPLP) in the joint ICLP call for 2010. The collection of technical communications for 2010 in hand appears in turn as Volume 7 of the Leibniz International Proceedings in Informatics (LIPIcs) series, published online through the Dagstuhl Research Online Publication Server (DROPS). Both sets of papers were presented by their authors at this 26th ICLP.

Papers describing original, previously unpublished research and not simultaneously submitted for publication elsewhere were solicited in all areas of logic programming including but not restricted to: Theory (Semantic Foundations, Formalisms, Non-monotonic Reasoning, Knowledge Representation), Implementation (Compilation, Memory Management, Virtual Machines, Parallelism), Environments (Program Analysis, Transformation, Validation, Verification, Debugging, Profiling, Testing), Language Issues (Concurrency, Objects, Coordination, Mobility, Higher Order, Types, Modes, Assertions, Programming Techniques), Related Paradigms (Abductive Logic Programming, Inductive Logic Programming, Constraint Logic Programming, Answer-Set Programming), and Applications (Databases, Data Integration and Federation, Software Engineering, Natural Language Processing, Web and Semantic Web, Agents, Artificial Intelligence, Bioinformatics).
Special categories were application papers (where the emphasis was on their impact on the application domain) and system and tool papers (where the emphasis was on the novelty, practicality, usability and general availability of the systems and tools described). In the technical communications the emphasis was on describing recent developments, new projects, and other materials not yet ready for publication as full papers. The length limit for full papers was set at 15 pages plus bibliography for full papers (approximately in line with the length of TPLP technical notes) and for technical communications at 10 pages total.

In response to the call for papers 104 abstracts were received, 81 of which remained finally as complete submissions. Of those, 69 were full papers submitted to the TPLP special issue track (21 of them applications or systems papers). The program chairs acting as guest editors organized the refereeing process with the help of the program committee and numerous external reviewers. Each paper was reviewed by at least three anonymous referees which provided full written evaluations. Competition was high and after the first round of refereeing only 25 full papers remained. Of these, 16 went through a full second round of refereeing with written referee reports. Finally, all 25 papers went through a final, copy-editing round. In the end the special issue contains 17 technical papers, 6 application papers, and 2 systems and tools papers. During the first phase of reviewing the papers submitted to the technical communications track were also reviewed by at least three anonymous referees providing full written evaluations. Also, a number of full paper submissions were moved during the reviewing process to the technical communications track. Finally, 22 papers were accepted as technical communications.

The list of the 25 accepted full papers, appearing in the special issue of TPLP, follows:

**Regular Papers**

Automated Termination Analysis for Logic Programs with Cut

*Peter Schneider-Kamp, Jürgen Giesl, Thomas Stroeder, Alexander Serebrenik, René Thiemann*

Transformations of Logic Programs on Infinite Lists

*Alberto Pettorossi, Maurizio Proietti, Valerio Senni*

Swapping Evaluation: A Memory-Scalable Solution for Answer-On-Demand Tabling

*Pablo Chico de Guzmán, Manuel Carro Liñares, David S. Warren*

Threads and Or-Parallelism Unified

*Vítor Santos Costa, Inês Castro Dutra, Ricardo Rocha*

CHR(PRISM)-based Probabilistic Logic Learning

*Jon Sneyers, Wannes Meert, Joost Vennekens, Yoshitaka Kameya, Taisuke Sato*

Inference with Constrained Hidden Markov Models in PRISM

*Henning Christiansen, Christian Theil Have, Ole Torp Lassen, Matthieu Petit*

A Translational Approach to Constraint Answer Set Solving

*Christian Drescher, Toby Walsh*

A Decidable Subclass of Finitary Programs

*Sabrina Baselice, Piero Bonatti*
Disjunctive ASP with Functions: Decidable Queries and Effective Computation  
**Mario Alviano, Wolfgang Faber, Nicola Leone**

Catching the Ouroboros: On Debugging Non-ground Answer-Set Programs  
**Johannes Oetsch, Jörg Puehrer, Hans Tompits**

Loop Formulas for Description Logic Programs  
**Yisong Wang, Jia-Huai You, Li-Yan Yuan, Yi-Dong Shen**

Towards Closed World Reasoning in Dynamic Open Worlds  
**Martin Slota, João Leite**

A Program-Level Approach to Revising Logic Programs under Answer Set Semantics  
**James Delgrande**

FO(FD): Extending classical logic with rule-based fixpoint definitions  
**Ping Hou, Broes De Cat, Marc Denecker**

A Complete and Terminating Execution Model for Constraint Handling Rules  
**Hariolf Betz, Frank Raiser, Thom Frühwirth**

Decidability Properties for Fragments of CHR  
**Maurizio Gabbrielli, Jacopo Mauro, Maria Chiara Meo, Jon Sneyers**

A Declarative Semantics for CLP with Qualification and Proximity  
**Mario Rodríguez-Añalejo, Carlos A. Romero-Díaz**

**Application Papers and Systems and Tools Papers**

Logic-Based Decision Support for Strategic Environmental Assessment  
**Marco Gavanelli, Fabrizio Riguzzi, Michela Milano, Paolo Cagnoli**

Test Case Generation for Object-Oriented Imperative Languages in CLP  
**Miguel Gómez-Zamalloa, Elvira Albert, Germán Puebla**

Logic Programming for Finding Models in the Logics of Knowledge and its Applications: A Case Study  
**Chitta Baral, Gregory Gelfond, Enrico Pontelli, Tran Son**

Applying Prolog to Develop Distributed Systems  
**Nuno P. Lopes, Juan Navarro Perez, Andrey Rybalchenko, Atul Singh**

CLP-based Protein Fragment Assembly  
**Alessandro Dal Palù, Agostino Dovier, Federico Fogolari, Enrico Pontelli**

Formalization of Psychological Knowledge in Answer Set Programming and its Application  
**Marcello Balduccini, Sara Girotto**

Testing and Debugging Techniques for Answer Set Solver Development  
**Roben Brummayer, Matti Järvisalo**

The System Kato: Detecting Cases of Plagiarism for Answer-Set Programs  
**Johannes Oetsch, Jörg Puehrer, Martin Schwengerer, Hans Tompits**
We would like to thank very specially the members of the Program Committee and the external referees for their enthusiasm, hard work, and promptness, despite the higher load of the two rounds of refereeing plus the copy editing phase. The PC members were: María Alpuente, Pedro Cabalar, Manuel Carro, Luc De Raedt, Marina De Vos, James Delgrande, Marc Denecker, Agostino Dovier, Esra Erdem, Wolfgang Faber, Thom Fruehwirth, Maurizio Gabbrielli, John Gallagher, Samir Genaim, Haifeng Guo, Joxan Jaffar, Tomi Janhunen, Michael Leuschel, Alan Mycroft, Gopalan Nadathur, Lee Naish, Enrico Pontelli, Vitor Santos Costa, Tom Schrijvers, Tran Cao Son, Peter J. Stuckey, Terrance Swift, Peter Szeverdi, Frank Valencia, Wim Vanhoof, Kewen Wang, Stefan Woltran, and Neng-Fa Zhou.

We would also like to thank David Basin, Francois Fages, Deepak Kapur, and Molham Aref for their invited talks and those that helped organize ICLP: Veronica Dahl (General Chair and Workshops Chair), Marcello Balduccini and Alessandro Dal Palù (Doctoral Consortium), and Tom Schrijvers (Prolog Programming Contest). ICLP'10 was held as part of the 2010 Federated Logic Conference, hosted by the School of Informatics at the U. of Edinburgh, Scotland. Support by the conference sponsors –EPSRC, NSF, Microsoft Research, Association for Symbolic Logic, Google, HP, Intel– is also gratefully acknowledged. We are also grateful to Andrei Voronkov for creating the EasyChair system.

Finally, we would like to thank very specially Ilkka Niemelä, editor in chief of Theory and Practice of Logic Programming, David Tranah, from Cambridge University Press, Marc Herbstritt, from LIPIcs, Leibniz Center for Informatics, all the members of the ALP Executive Committee, and the ALP community in general for having believed in and allowed us to put into practice this approach which we believe provides compatibility with the publishing mechanisms of other fields outside CS, without giving up the format and excitement of our conferences.

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Program Committee Chairs