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Introduction to the 27th International Conference on Logic Programming Special Issue

JOHN GALLAGHER

Roskilde University, Denmark and IMDEA Software Institute, Madrid, Spain
(*e-mail:* jpg@ruc.dk)

MICHAEL GELFOND

Texas Tech University, USA
(*e-mail:* michael.gelfond@ttu.edu)

Following the initiative in 2010 taken by the Association for Logic Programming and Cambridge University Press, the full papers accepted for the International Conference on Logic Programming again appear as a special issue of Theory and Practice of Logic Programming (TPLP)—the *27th International Conference on Logic Programming Special Issue*. Papers describing original, previously unpublished research and not simultaneously submitted for publication elsewhere were solicited in all areas of logic programming including but not restricted to: Theory: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. Applications: Databases, Data Integration and Federation, Software Engineering, Natural Language Processing, Web and Semantic Web, Agents, Artificial Intelligence, Bioinformatics.

There were four broad categories for submissions: (1) technical papers for describing technically sound, innovative ideas that can advance the state of the art of logic programming; (2) application papers, where the emphasis is on their impact on the application domain; (3) system and tool papers, where the emphasis is on the novelty, practicality, usability and general availability of the systems and tools described; and (4) technical communications, aimed at describing recent developments, new projects, and other materials that are not ready for main publication as standard 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. The papers appearing in this issue are classified as "TPLP rapid publications".

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In response to the call for papers we received 67 submissions. Of those, 64 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.[1] Each paper was reviewed by at least three anonymous referees who provided full written evaluations. After the first round of refereeing 43 full papers remained. Of these, 23 went through a full second round of refereeing with written referee reports. Finally, all 43 papers went through a final, copy-editing round. In the end the special issue contains 19 technical papers, 3 application papers, and 1 systems and tools paper. 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, 23 papers were accepted as technical communications. They appear as Volume 10(?) of the Leibniz International Proceedings in Informatics (LIPIcs) series, published on line through the Dagstuhl Research Online Publication Server (DROPS).

A listing of papers published in LIPIcs appears at the end of the special issue. Together, the journal special issue and the LIPIcs volume of short technical communications constitute the *proceedings* of ICLP11.

The list of the 23 accepted full papers appearing in this special issue follows:

Regular Papers

Complex Optimization in Answer Set Programming
Martin Gebser, Roland Kaminski and Torsten Schaub

On the Correctness of Pull-Tabbing
Sergio Antoy

(Co-)Inductive Semantics for Constraint Handling Rules
Rémy Haemmerlé

The Magic of Logical Inference in Probabilistic Programming
Bernd Gutmann, Ingo Thon, Angelika Kimmig, Maurice Bruynooghe and Luc De Raedt

RedAlert: Determinacy Inference for Prolog
Jael Kriener and Andy King

On Combining Linear-Based Strategies for Tabled Evaluation of Logic Programs
Ricardo Rocha and Miguel Areias

[1] The LIPIcs volume contains a complete list of referees.

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Estimating the overlap between dependent computations for automatic parallelization
Paul Bone, Zoltan Somogyi and Peter Schachte

Transition Systems for Model Generators—A Unifying Approach
Yuliya Lierler and Miroslaw Truszczynski

Efficient Instance Retrieval of Subgoals for Subsumptive Tabled Evaluation of Logic Programs
Flavio Cruz and Ricardo Rocha

Non-termination Analysis of Logic Programs with integer arithmetics
Dean Voets and Daniel De Schreye

A Structured Alternative to Prolog with Simple Compositional Semantics
António Porto

The PITA System: Tabling and Answer Subsumption for Reasoning under Uncertainty
Fabrizio Riguzzi and Terrance Swift

Normative Design using Inductive Learning
Domenico Corapi, Alessandra Russo, Marina De Vos, Julian Padget and Ken Satoh

Abstract Diagnosis of Timed Concurrent Constraint programs
Marco Comini, Laura Titolo and Alicia Villanueva

Parallel Backtracking with Answer Memoing for Independent And-Parallelism
Pablo Chico De Guzmán, Amadeo Casas, Manuel Carro and Manuel Hermenegildo

SAT-Based Termination Analysis Using Monotonicity Constraints over the Integers
Amir M. Ben-Amram, Michael Codish, Carsten Fuhs, Jürgen Giesl and Igor Gonopolskiy

Observational equivalences for Linear Logic CC languages
Rémy Haemmerlé

Splitting and Updating Hybrid Knowledge Bases
Martin Slota, Joao Leite and Terrance Swift

Actual causation in CP-logic
Joost Vennekens

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Application Papers and Systems and Tools Papers

Automatic Network Reconstruction using ASP
Max Ostrowski, Torsten Schaub, Markus Durzinsky, Wolfgang Marwan and Annegret Wagler

Optimal Placement of Valves in a Water Distribution Network with CLP(FD)
Massimiliano Cattafi, Marco Gavanelli, Maddalena Nonato, Stefano Alvisi and Marco Franchini

Constraint-Based Deadlock Checking of High-Level Specifications
Michael Leuschel and Stefan Hallerstede

ALPprolog—A New Logic Programming Method for Dynamic Domains
Conrad Drescher and Michael Thielscher

In conclusion, we would like to thank 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:

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Finally, we would like to express our thanks and great appreciation to 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, and all the members of the ALP Executive Committee for their continued support for this initiative, which provides a new model of computer science publishing that is already being adopted by other computing research communities.

John Gallagher and Michael Gelfond
Program Committee Chairs and Guest Editors

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