Introduction to the special issue on the 25th annual GULP conference

WOLFGANG FABER and NICOLA LEONE

Department of Mathematics,
University of Calabria, Cosenza, Italy
(e-mail: `{faber,leone}@mat.unical.it`*)*

This special issue of TPLP commemorates the 25th edition of the annual conference organized by GULP (Gruppo Ricercatori e Utenti Logic Programming), the Italian group of researchers and users of logic programming. The first event in this series was held at Genoa in 1986, one year after the foundation of the user group, continuing annually ever since. In 1994, the conference joined forces with the Spanish conference PRODE (on Declarative Programming), and in 1996 with the Portuguese APPIA (on Artificial Intelligence). This collaboration continued until 2003. Starting from 2004, the event became known as CILC (Convegno Italiano di Logica Computazionale, Italian Conference on Computational Logic), thereby broadening its topics to general computational logic, while becoming a national Italian event again. Being one of the oldest and largest national events of its kind, over the years the conference has been an important networking opportunity and catalyst for persons with different backgrounds, coming from theory and practice, and from research and industry, for exchanging their visions, achievements, and challenges in logic programming. For a more detailed historical account on GULP and its annual conferences, we refer to Rossi (2010).

The 25th conference, CILC 2010, took place from July 7 to 9, 2011 at the University of Calabria, Italy. Apart from 21 regular reviewed contributions (Faber and Leone 2010), the event featured invited talks by Gerhard Friedrich and Gerhard Brewka, a tutorial by Axel Polleres, and a presentation of the book "25 Years of Logic Programming in Italy" (Dovier and Pontelli 2010). The best-rated contributions which are most relevant to the topics of TPLP were invited for this special issue and underwent a thorough reviewing process. The accepted six articles in this issue provide a good overview of the activity and the diversity of the Italian Logic Programming community.

Dovier, Formisano, and Pontelli's work "Autonomous Agents Coordination: Action Languages Meet CLP($\mathscr{FD}$) and Linda" deals with multi-agent systems based on action languages and distributed Constraint Logic Programming. It provides a definition of an action language framework for multi-agent systems, which allows for distributed planning and consistent global execution. They also describe a prototype implementation using Constraint Logic Programming and Linda.

Fioravanti, Pettorossi, Proietti, and Senni's article "Generalization Strategies for the Verification of Infinite State Systems" is on automated verification using

Constraint Logic Programming. It illustrates how to specialize Constraint Logic Programming representations of infinite state systems, and develops generalization strategies to use in this process and provides an experimental evaluation of these techniques.

Giordano, Martelli, and Theseider Dupré's contribution "Reasoning About Actions with Temporal Answer Sets" studies Answer Set Programming (ASP) in combination with Dynamic Linear Time Temporal Logic. In particular, it defines a temporal extension of ASP, and provides a reduction of temporal ASP to standard ASP by employing a bounded model checking technique.

Manna, Ricca, and Terracina's article "Consistent Query Answering via ASP from Different Perspectives: Theory and Practice" deals with consistent query answering in Data Integration using ASP. It unifies several semantics for consistent query answering using an ASP representation, proposes several optimization techniques, describes an implementation using DLV^{DB}, which is evaluated experimentally.

Perri, Ricca, and Sirianni's work "Parallel Instantiation of ASP Programs: Techniques and Experiments" elaborates on ASP systems. In particular, techniques for parallel instantiation of programs are presented, focussing on parallelism for symmetric multiprocessing. It also provides an experimental evaluation of the resulting implementation.

Riguzzi and Swift's contribution "Well-Definedness and Efficient Inference for Probabilistic Logic Programming Under the Distribution Semantics" deals with probabilistic logic programming. It contains a definition of a large class of programs for which the distribution semantics is well-defined and provides a new algorithm for the computation of probabilities for queries. An implementation using XSB is described, which is evaluated experimentally.

Concluding, the editors of this special issue would like to thank the referees for their valuable work, and Ilkka Niemelä, the editor-in-chief of TPLP, for making this issue possible.

References

DOVIER, A. AND PONTELLI, E., Eds. 2010. *A 25-Year Perspective on Logic Programming: Achievements of the Italian Association for Logic Programming, GULP*. Lecture Notes in Computer Science, vol. 6125. Springer, Berlin.

FABER, W. AND LEONE, N., Eds. 2010. *Proceedings of the 25th Italian Conference on Computational Logic*. Number 598. CEUR-WS. CEUR-WS.org, ISSN 1613-0073, http://ceur-ws.org/Vol-598/

ROSSI, G. 2010. Logic programming in Italy: A historical perspective. In *A 25-Year Perspective on Logic Programming: Achievements of the Italian Association for Logic Programming, GULP*, A. Dovier and E. Pontelli, Eds. Lecture Notes in Computer Science, vol. 6125. Springer, Berlin, 1–14.