Special Issue on the 30th Italian Conference on Computational Logic: CILC 2015

Preface

This special issue of Fundamenta Informaticae contains the revised, extended versions of selected papers presented at the Italian Conference on Computational Logic (Convegno Italiano di Logica Computazionale, CILC 2015) which was hosted by the University of Genoa, Italy, from July 1st to July 3rd, 2015.

The event was the thirtieth edition of the annual meeting of the Italian Association for Logic Programming (GULP, Gruppo Ricercatori e Utenti di Logic Programming). Since its first edition, which took place in Genoa in 1986, the annual conference organized by GULP is the main occasion of meeting and exchanging ideas and experiences among Italian researchers who work in the field of Computational Logic. During the years, this annual meeting extended its horizons from the specific field of traditional Logic Programming to more general declarative programming as well as to Artificial Intelligence and Deductive Databases. All these areas had a very significant growth over the last decades and nowadays they all play a crucial role in the fields of Information Processing, Data Science, and Computer Science.

The program of CILC 2015 included 30 technical papers accepted for long presentation. Paper selection was made by peer reviewing.

The technical presentations were of high quality and concerned several topics related to computational logic, including foundations and theoretical results, agents and multiagent systems, languages and programming, Description Logics and ontologies, practical experiences, case studies, applications, frameworks, and tools.

The conference program included also one invited talk:

"A Framework for Data, Knowledge, and Reasoning: Datalog$^\pm$", by Georg Gottlob (Information Systems Group at the Department of Computer Science, University of Oxford, UK).

Some of the papers presented at the conference were selected for this special issue and their authors were invited to submit an improved, extended version for publication. The papers that have been accepted went through a two-round careful review by qualified international referees, to whom we express our deep gratitude for their comments and criticism.

Here is a brief overview of the topics of the accepted papers.

Matteo Baldoni, Cristina Baroglio, Federico Capuzzimati, and Roberto Micalizio present the Ja-CaMo+ multiagent system framework, where agent interaction is achieved through commitment-based interaction protocols. Such protocols are realized as artifacts that maintain a social state and notify to the participating agents those events that are relevant to the interaction.

Federico Chesani, Marco Gavanelli, Evelina Lamma, Paola Mello, and Marco Montali address the problem of compliance verification, and review the LTL and SCIFF frameworks in the light of compliance evaluation, formally investigating the relationship between the two approaches.

Marco Gavanelli, Evelina Lamma, Fabrizio Riguzzi, Elena Bellodi, Riccardo Zese, and Giuseppe Cota show how abductive logic programming can be used to represent Datalog$^\pm$ ontologies, supporting query answering through an abductive proof procedure, and smoothly achieving the integration of ontologies and rule-based reasoning.

Laura Giordano, Valentina Gliozzi, and Nicola Olivetti explore the extension of the notion of rational closure to logics lacking the finite model property, considering the logic $\mathcal{SHIQ}$. They provide a semantic characterization of rational closure in $\mathcal{SHIQ}$ in terms of a preferential semantics, based on a finite rank characterization of minimal models.

Georg Gottlob, Andreas Pieris, and Mantas Šimkus investigate the impact of product databases on the expressive power and complexity of guarded existential rules, showing that the queries expressed via (frontier-)guarded rules gain in expressiveness, while those specified via weakly-(frontier-)guarded rules are not affected.

Francesca A. Lisi and Corrado Mencar provide a technique to extract and integrate fuzzy information granules from a populated OWL ontology, with the goal of representing imprecise knowledge within an OWL ontology. Fuzzy sets are used to represent and process such information granules corresponding to imprecise concepts.

Finally, Vadim Malvone, Aniello Murano, and Loredana Sorrentino study the problem of checking whether or not, in a two-player reachability game, a player has more than one winning strategy, investigating the question both under perfect and imperfect information about the moves performed by the players.

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