Argumentation and Logic Programming (Revised Selected Papers of ArgLP 2015)

Preface

The First International Workshop on Argumentation and Logic Programming (ArgLP 2015) was co-located with the 31st International Conference on Logic Programming (ICLP 2015). It took place in Cork, Ireland on August 31, 2015.

Argumentation has been more and more an active research field in areas as Multi-Agent Systems, Knowledge Representation and Reasoning, Artificial Intelligence, Philosophy, Law, etc. From the computational point of view, logic programming has been influencing fundamental roots of argumentation. Indeed, since Dung formalized a family of argumentation inferences in terms of the so called argumentation semantics, he showed that these argumentation semantics have strong roots in logic-based theories.

The relationship between logic programming and argumentation has attracted increased attention in the last years. Studies range from translating one into the other and back, using argumentation to explain logic-programming models, and using logic-programming systems to implement argumentation-based languages (ASPARTIX, DIAMOND). Influences go both ways and we believe that both fields can benefit from learning about each other.

That year the presentation of the results of the First International Competition on Computational Models of Argumentation (ICCMA) was done at TAFA 2015 (co-located with IJCAI 2015). Since some of the most widely known argumentation solvers are based on logic programming methodologies, e.g. ASPARTIX, we expect that new argumentation solvers based on logic programming could appear. In this setting, ArgLP aimed to catch the attention of the logic programming community to increase the influence of logic programming in the new theoretical and practical developments of argumentation.

This special issue contains three papers centered around various issues relating to formal argumentation and logic programming. The first paper, *Relating Concrete Defeasible Reasoning Formalisms and Abstract Argumentation* by Michael Maher, establishes a relationship between Dung's abstract argumentation frameworks and ambiguity-blocking logics in the framework of Antoniou et al.

The second paper, *Representing Argumentation Frameworks in Answer Set Programming* by Chiaki Sakama and Tjitze Rienstra, provides novel transformations from Dung's abstract argumentation frameworks into answer set programs, where answer set solvers can be used to compute complete, stable, grounded and preferred labellings.

The third and final paper, *Abducible Semantics and Argumentation* by Mauricio Osorio, José Luis Carballido, and Claudia Zepeda, defines a logic-programming semantics based on the addition of abducible atoms to normal logic programs that have no stable models, and considers the argumentation extensions that result from it when using a translation from argumentation frameworks to normal logic programs.

The editors would like to thank all authors for their contributions and are also very grateful to the programme committee for their work during the review phase and for providing excellent feedback to the authors. Additionally, all reviewers of journal papers did an outstanding job in providing detailed and constructive feedback to journal paper authors.

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