

Technical Communications of the 33rd International Conference on Logic Programming

ICLP 2017, August 28–September 1, 2017, Melbourne, Australia

Edited by

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■ Preface

This volume contains the Technical Communications of the 33rd International Conference on Logic Programming (ICLP 2017), held in Melbourne, Australia, from the 28th of August to the 1st of September, 2017. Since the first conference held in Marseille in 1982, ICLP has been the premier international event for presenting research in logic programming. Contributions to ICLP are sought in all areas of logic programming, including:

- *Theory* – Semantic Foundations, Formalisms, Nonmonotonic Reasoning, Knowledge Representation.
- *Implementation* – Compilation, Virtual Machines, Parallelism, Constraint Handling Rules, Tabling.
- *Environments* – Program Analysis, Transformation, Validation, Verification, Debugging, Profiling, Testing.
- *Language Issues* – Concurrency, Objects, Coordination, Mobility, Higher Order, Types, Modes, Assertions, Programming Techniques.
- *Related Paradigms* – Inductive and Co-inductive Logic Programming, Constraint Logic Programming, Answer-Set Programming, SAT-Checking.
- *Applications* – Databases, Big Data, Data Integration and Federation, Software Engineering, Natural Language Processing, Web and Semantic Web, Agents, Artificial Intelligence, Bioinformatics, and Education.

Three kinds of submissions were accepted:

- *Technical papers*, for technically sound, innovative ideas that can advance the state of logic programming.
- *Application papers*, that impact interesting application domains;
- *System and tool papers*, which emphasize novelty, practicality, usability, and availability of the systems and tools described.

This year, ICLP adopted the hybrid publication model used in all recent editions of the conference, with journal papers and Technical Communications (TCs), following a decision made in 2010 by the Association for Logic Programming. Papers of the highest quality were selected to be published as *rapid publications* in the journal of Theory and Practice of Logic Programming (TPLP), Cambridge University Press. The TCs comprise papers which the Program Committee judged of good quality but not yet of the standard required to be accepted and published in TPLP as well as dissertation project descriptions stemming from the Doctoral Program (DP) held with ICLP.

We received 55 full submissions for the main conference, the Program Committee recommended 13 to be accepted as TCs, of which 11 were materialized in this volume (2 were withdraw). The DP, with a separate Program Committee, received 4 submissions, all of which were accepted. All papers in this volume were presented in specific sessions of ICLP 2017. The best DP paper was given the opportunity to be presented in a slot of the main conference.

We are of course deeply indebted to both Program Committee members and external reviewers, as the conference would not have been possible without their dedicated, enthusiastic and outstanding work. The Program Committee members for ICLP and the DP were:

| | | |
|--------------------------|--------------------------|--------------------------|
| Mario Alviano | Gopal Gupta | Francesco Ricca |
| Marcello Balduccini | Amelia Harrison | Ricardo Rocha |
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We would also like to express our gratitude to the full ICLP 2017 organization committee, namely Maria Garcia de la Banda and Guido Tack, who acted as general chairs; Enrico Pontelli, who served as workshop chair; Tommaso Urli, who acted as publicity chair and designed the web pages; and, finally, Paul Fodor and Graeme Gange, who organized the programming contest.

Our gratitude must be extended to Torsten Schaub, who is serving in the role of President of the Association of Logic Programming (ALP), to all the members of the ALP Executive Committee and to Mirek Truszczyński, Editor-in-Chief of TPLP. Also, to the staff at Cambridge University Press, especially Richard Horley and Samira Ceccarelli, and to the

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Finally, we would like to thank our generous gold-tier sponsors – the Association for Logic Programming, the Association for Constraint Programming, the Monash University, the University of Melbourne, CSIRO Data61, COSYTEC and Satalia; our generous bronze-tier sponsors – Google; and our generous donors – the European Association for Artificial Intelligence, the International Journal of Artificial Intelligence, Springer, CompSustNet and Cosling.

Ricardo Rocha, Tran Cao Son, Christopher Mears, and Neda Saeedloei
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August 2017

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