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# Logic-Based Program Synthesis and Transformation

30th International Symposium, LOPSTR 2020  
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## Preface

This volume contains a selection of the papers presented at LOPSTR 2020, the 30th International Symposium on Logic-Based Program Synthesis and Transformation, held 7–9 September 2020.

The aim of the LOPSTR series is to stimulate and promote international research and collaboration on logic-based program development. Topics of interest cover all aspects of logic-based program development (including in domain-specific languages), all stages of the software life cycle, and issues of both programming-in-the-small and programming-in-the-large, including: synthesis; transformation; specialisation; composition; optimisation; specification; analysis and verification; testing and certification; program and model manipulation; inversion; machine learning for program development; transformational techniques in SE; applications and tools.

LOPSTR 2020 was part of the Bologna Federated Conference on Programming Languages (together with PPDP, WFLP and Microservices), which was organised as a virtual conference. Previous editions of LOPSTR were held in Porto, Namur, Edinburgh, Siena, Canterbury, Madrid, Leuven, Odense, Hagenberg, Coimbra, Valencia, Lyngby, Venice, London, Verona, Uppsala, Madrid, Paphos, London, Venice, Manchester, Leuven, Stockholm, Arnhem, Pisa, Louvain-la-Neuve, Manchester and Frankfurt.

LOPSTR has a reputation for being a lively, friendly forum that allows the presentation and discussion of both finished work and work in progress. Formal proceedings are produced only after the event so that authors can incorporate the feedback from the conference presentation and discussion. This year, 31 papers were submitted from 20 different countries. Seventeen papers were selected for presentation at LOPSTR 2020. In addition the programme included invited talks by Philipp Rümmer (Uppsala University, Sweden), Ekaterina Komendantskaya (Heriot-Watt University, UK), joint speaker with PPDP 2020, and José Meseguer (University of Illinois at Urbana-Champaign, USA), BOPL keynote speaker. The Program Committee accepted one full paper for immediate inclusion in the formal proceedings, and 14 additional papers presented at the symposium were accepted after a revision and another round of reviewing. Each submission was reviewed by at least 3 program committee members or external referees. In addition to the 15 accepted papers, this volume includes two papers contributed by invited speakers:

- Symbolic Computation in Maude: Some Tapas, by José Meseguer
- Reasoning in the Theory of Heap: Satisfiability and Interpolation, by Zafer Esen and Philipp Rümmer

Thanks to Springer's sponsorship, two awards were available this year. After discussion within the program committee, the awards were given to the following papers:

- Resourceful Program Synthesis from Graded Linear Types, by Jack Hughes and Dominic Orchard;

- Generating Functions for Probabilistic Programs, by Lutz Klinkenberg, Kevin Batz, Benjamin Lucien Kaminski, Joost-Pieter Katoen, Joshua Moerman and Tobias Winkler.

I would like to thank all those who contributed to LOPSTR 2020, particularly the invited speakers, authors, program committee members and external reviewers. I am very grateful to the Local Organization Committee in Bologna, chaired by Maurizio Gabbrielli, for providing a great virtual environment for BOPL, and to the Steering Committee, chaired by Alberto Pettorossi, for their support. It was a pleasure to work with the program chairs of the events colocated with LOPSTR 2020 in BOPL. We are grateful to Springer for sponsoring the LOPSTR 2020 awards and to EasyChair for providing support to deal with the submission and reviewing process.

December 2020

Maribel Fernández

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