Computer Science Logic 2018

CSL 2018, September 4–8, 2018, Birmingham, United Kingdom

Edited by

Dan R. Ghica

Achim Jung

LIPIcs – Vol. 119 – CSL 2018 www.dagstuhl.de/lipics

Editors

Dan R. Ghica
School of Computer Science
University of Birmingham
D.R.Ghica@cs.bham.ac.uk

Achim Jung
School of Computer Science
University of Birmingham
A.Jung@cs.bham.ac.uk

ACM Classification 2012
General and reference → General conference proceedings, Theory of computation, Software and its engineering → Formal language definitions, Software and its engineering → Formal software verification

ISBN 978-3-95977-088-0

Published online and open access by
Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing, Saarbrücken/Wadern, Germany. Online available at http://www.dagstuhl.de/dagpub/978-3-95977-088-0.

Publication date
August, 2018

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at http://dnb.d-nb.de.

License
This work is licensed under a Creative Commons Attribution 3.0 Unported license (CC-BY 3.0): http://creativecommons.org/licenses/by/3.0/legalcode.
In brief, this license authorises each and everybody to share (to copy, distribute and transmit) the work under the following conditions, without impairing or restricting the authors' moral rights:
- Attribution: The work must be attributed to its authors.

The copyright is retained by the corresponding authors.

Digital Object Identifier: 10.4230/LIPIcs.CSL.2018.0

Contents

Preface
Dan R. Ghica and Achim Jung 0:ix–0:x

The Ackermann Award 2018
Dexter Kozen and Thomas Schwentick 1:1–1:5

Regular Papers

Relating Structure and Power: Comonadic Semantics for Computational Resources
Samson Abramsky and Nihil Shah 2:1–2:17

Climbing up the Elementary Complexity Classes with Theories of Automatic Structures
Faried Abu Zaid, Dietrich Kuske, and Peter Lindner 3:1–3:16

High-Level Signatures and Initial Semantics
Benedikt Ahrens, André Hirschowitz, Ambroise Lafont, and Marco Maggesi 4:1–4:22

The True Concurrency of Herbrand's Theorem
Aurore Alcolei, Pierre Clairambault, Martin Hyland, and Glynn Winskel 5:1–5:22

Cartesian Cubical Computational Type Theory: Constructive Reasoning with Paths and Equalities
Carlo Angiuli, Kuen-Bang Hou (Favonia), and Robert Harper 6:1–6:17

Definable Inapproximability: New Challenges for Duplicator
Albert Atserias and Anuj Dawar 7:1–7:21

Safety, Absoluteness, and Computability
Arnon Avron, Shahar Lev, and Nissan Levi 8:1–8:17

Combining Linear Logic and Size Types for Implicit Complexity
Patrick Baillot and Alexis Ghyselen 9:1–9:21

Beyond Admissibility: Dominance Between Chains of Strategies
Nicolas Basset, Ismaël Jecker, Arno Pauly, Jean-François Raskin, and Marie Van den Bogaard 10:1–10:22

Rule Algebras for Adhesive Categories
Nicolas Behr and Paweł Sobociński 11:1–11:21

Submodular Functions and Valued Constraint Satisfaction Problems over Infinite Domains
Manuel Bodirsky, Marcello Mamino, and Caterina Viola 12:1–12:22

Graphical Conjunctive Queries
Filippo Bonchi, Jens Seeber, and Paweł Sobociński 13:1–13:23

Approximating Probabilistic Automata by Regular Languages
Rohit Chadha, A. Prasad Sistla, and Mahesh Viswanathan 14:1–14:23

27th EACSL Annual Conference on Computer Science Logic.
Editors: Dan R. Ghica and Achim Jung
Leibniz International Proceedings in Informatics
LIPICS Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany

An Application of Parallel Cut Elimination in Unit-Free Multiplicative Linear Logic to the Taylor Expansion of Proof Nets
Jules Chouquet and Lionel Vaux Auclair 15:1–15:17

Fully Abstract Models of the Probabilistic λ-calculus
Pierre Clairambault and Hugo Paquet 16:1–16:17

Uniform Inductive Reasoning in Transitive Closure Logic via Infinite Descent
Liron Cohen and Reuben N. S. Rowe 17:1–17:16

A Recursion-Theoretic Characterisation of the Positive Polynomial-Time Functions
Anupam Das and Isabel Oitavem 18:1–18:17

Non-Wellfounded Proof Theory For (Kleene+Action)(Algebras+Lattices)
Anupam Das and Damien Pous 19:1–19:18

Symmetric Circuits for Rank Logic
Anuj Dawar and Gregory Wilsenach 20:1–20:16

Beyond Polarity: Towards a Multi-Discipline Intermediate Language with Sharing
Paul Downen and Zena M. Ariola 21:1–21:23

Expressivity Within Second-Order Transitive-Closure Logic
Flavio Ferrarotti, Jan Van den Bussche, and Jonni Virtema 22:1–22:18

Quantifying Bounds in Strategy Logic
Nathanaël Fijalkow, Bastien Maubert, Aniello Murano, and Sasha Rubin 23:1–23:23

A Fully Abstract Game Semantics for Countable Nondeterminism
W. John Gowers and James D. Laird 24:1–24:18

Dependency Concepts up to Equivalence
Erich Grädel and Matthias Hoelzel 25:1–25:21

Finite Bisimulations for Dynamical Systems with Overlapping Trajectories
Béatrice Bérard, Patricia Bouyer, and Vincent Jugé 26:1–26:17

A Contextual Reconstruction of Monadic Reflection
Toru Kawata 27:1–27:14

An Algebraic Decision Procedure for Two-Variable Logic with a Between Relation
Andreas Krebs, Kamal Lodaya, Paritosh K. Pandya, and Howard Straubing 28:1–28:17

Basic Operational Preorders for Algebraic Effects in General, and for Combined Probability and Nondeterminism in Particular
Aliaume Lopez and Alex Simpson 29:1–29:17

Canonical Models and the Complexity of Modal Team Logic
Martin Lück 30:1–30:23

A Decidable Fragment of Second Order Logic With Applications to Synthesis
P. Madhusudan, Umang Mathur, Shambwaditya Saha, and Mahesh Viswanathan . 31:1–31:19

Quantitative Foundations for Resource Theories
Dan Marsden and Maaike Zwart 32:1–32:17

On Compositionality of Dinatural Transformations
Guy McCusker and Alessio Santamaria 33:1–33:22

Synthesizing Optimally Resilient Controllers
Daniel Neider, Alexander Weinert, and Martin Zimmermann 34:1–34:17

Local Validity for Circular Proofs in Linear Logic with Fixed Points
Rémi Nollet, Alexis Saurin, and Christine Tasson 35:1–35:23

Parity Games with Weights
Sven Schewe, Alexander Weinert, and Martin Zimmermann 36:1–36:17

MacNeille Completion and Buchholz' Omega Rule for Parameter-Free Second Order Logics
Kazushige Terui 37:1–37:19