

Computer Science Logic 2013

22nd Annual Conference of the EACSL
CSL'13, September 2–5, 2013, Torino, Italy

Edited by
Simona Ronchi Della Rocca



Editor

Simona Ronchi Della Rocca
Dipartimento di Informatica
Università di Torino
ronchi@di.unito.it

ACM Classification 1998

A.0 Conference Proceedings, F Theory of Computation, C.2.4 Distributed Systems,
D.2.4 Software/ Programs Verifications, D.3.1 Formal Definitions and Theory,
D.3.3 Languages Constructs and Features, I.2.4 Knowledge Representations Formalisms and Methods

ISBN 978-3-939897-60-6

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/978-3-939897-60-6>.

Publication date
September, 2013

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 authorizes 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.2013.i

ISBN 978-3-939897-60-6

<http://www.dagstuhl.de/lipics>

Contents

Editor's Preface	ix
Conference Organization	xi
External Reviewers	xiii

Report on the Ackermann Award 2013

The Ackermann Award 2013 <i>Anuj Dawar, Thomas A. Henzinger, and Damian Niwiński</i>	1
---	---

Abstracts of Invited Talks

<i>Res Publica: The Universal Model of Computation</i> <i>Nachum Dershowitz</i>	5
Three lightings of logic <i>Jean-Yves Girard</i>	11
From determinism, non-determinism and alternation to recursion schemes for P, NP and Pspace <i>Isabel Oitavem</i>	24
Means and Limits of Decision <i>Lidia Tendera</i>	28

Contributed Papers

On closure ordinals for the modal mu-calculus <i>Bahareh Afshari and Graham E. Leigh</i>	30
Realizability and Strong Normalization for a Curry-Howard Interpretation of HA + EM1 <i>Federico Aschieri, Stefano Berardi, and Giovanni Birolo</i>	45
Bounds for the quantifier depth in finite-variable logics: Alternation hierarchy <i>Christoph Berkholz, Andreas Krebs, and Oleg Verbitsky</i>	61
Unambiguity and uniformization problems on infinite trees <i>Marcin Bilkowski and Michał Skrzypczak</i>	81
A characterization of the Taylor expansion of λ -terms <i>Pierre Bouges, Fanny He, and Michele Pagani</i>	101
Team building in dependence <i>Julian Bradfield</i>	116
Saturation-Based Model Checking of Higher-Order Recursion Schemes <i>Christopher Broadbent and Naoki Kobayashi</i>	129

Computer Science Logic 2013 (CSL'13).

Editor: Simona Ronchi Della Rocca



LIPICS Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany

Descriptive complexity of approximate counting CSPs <i>Andrei Bulatov, Victor Dalmau, and Marc Thurley</i>	149
What is Decidable about Partially Observable Markov Decision Processes with omega-Regular Objectives <i>Krishnendu Chatterjee, Martin Chmelik, and Mathieu Tracol</i>	165
Infinite-state games with finitary conditions <i>Krishnendu Chatterjee and Nathanaël Fijalkow</i>	181
Annotation-Free Sequent Calculi for Full Intuitionistic Linear Logic <i>Ranald Clouston, Jeremy Dawson, Rajeev Goré, and Alwen Tiu</i>	197
Deciding the weak definability of Büchi definable tree languages <i>Thomas Colcombet, Denis Kuperberg, Christof Löding, and Michael Vanden Boom</i>	215
Innocent Game Semantics via Intersection Type Assignment Systems <i>Pietro Di Gianantonio and Marina Lenisa</i>	231
Cuts for circular proofs: semantics and cut-elimination <i>Jérôme Fortier and Luigi Santocanale</i>	248
Hierarchies in independence logic <i>Pietro Galliani, Miika Hannula, and Juha Kontinen</i>	263
Inclusion Logic and Fixed Point Logic <i>Pietro Galliani and Lauri Hella</i>	281
Theories for Subexponential-size Bounded-depth Frege Proofs <i>Kaveh Ghasemloo and Stephen A. Cook</i>	296
The Structure of Interaction <i>Stéphane Gimenez and Georg Moser</i>	316
The Fixed-Parameter Tractability of Model Checking Concurrent Systems <i>Stefan Göller</i>	332
One-variable first-order linear temporal logics with counting <i>Christopher Hampson and Agi Kurucz</i>	348
On the locality of arb-invariant first-order logic with modulo counting quantifiers <i>Frederik Harwath and Nicole Schweikardt</i>	363
When is Metric Temporal Logic Expressively Complete? <i>Paul Hunter</i>	380
Proving Strong Normalisation via Non-deterministic Translations into Klop's Extended λ -Calculus <i>Kentaro Kikuchi</i>	395
Kleene Algebra with Products and Iteration Theories <i>Dexter Kozen and Konstantinos Mamouras</i>	415
Internalizing Relational Parametricity in the Extensional Calculus of Constructions <i>Neelakantan R. Krishnaswami and Derek Dreyer</i>	432
Modal Logic and Distributed Message Passing Automata <i>Antti Kuusisto</i>	452

Global semantic typing for inductive and coinductive computing <i>Daniel Leivant</i>	469
Two-Variable Logic on 2-Dimensional Structures <i>Amaldev Manuel and Thomas Zeume</i>	484
Categorical Duality Theory: With Applications to Domains, Convexity, and the Distribution Monad <i>Yoshihiro Maruyama</i>	500
Axiomatizing Subtyped Delimited Continuations <i>Marek Materzok</i>	521
On dialogue games and coherent strategies <i>Paul-André Melliès</i>	540
Elementary Modal Logics over Transitive Structures <i>Jakub Michaliszyn and Jan Otop</i>	563
A Fully Abstract Game Semantics for Parallelism with Non-Blocking Synchronization on Shared Variables <i>Susumu Nishimura</i>	578
Extracting Herbrand trees in classical realizability using forcing <i>Lionel Rieg</i>	597
The Complexity of Abduction for Equality Constraint Languages <i>Johannes Schmidt and Michał Wrona</i>	615
A New Type Assignment for Strongly Normalizable Terms <i>Rick Statman</i>	634
Semantics of Intensional Type Theory extended with Decidable Equational Theories <i>Qian Wang and Bruno Barras</i>	653