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Contents

Preface
Sven Schewe and Lijun Zhang ................................................................. 0:ix–0:x

Invited Contributions

The Siren Song of Temporal Synthesis
Moshe Y. Vardi ............................................................. 1:1–1:1

Bisimulations for Probabilistic and Quantum Processes
Yuxin Deng ...................................................................... 2:1–2:14

Is Speed-Independent Mutual Exclusion Implementable?
Rob van Glabbeek ......................................................... 3:1–3:1

Verifying Arithmetic Assembly Programs in Cryptographic Primitives
Andy Polyakov, Ming-Hsien Tsai, Bow-Yaw Wang, and Bo-Yin Yang ........ 4:1–4:16

Coalgebraic Theory of Büchi and Parity Automata: Fixed-Point Specifications,
Categorically
Ichiro Hasuo ............................................................ 5:1–5:2

Regular Papers

Universal Safety for Timed Petri Nets is PSPACE-complete
Parosh Aziz Abdulla, Mohamed Faouzi Atig, Radu Șiobanu, Richard Mayr, and
Patrick Totzke ................................................................. 6:1–6:15

It Is Easy to Be Wise After the Event: Communicating Finite-State Machines
Capture First-Order Logic with “Happened Before”
Benedikt Bollig, Marie Fortin, and Paul Gastin ...................................... 7:1–7:17

Learning-Based Mean-Payoff Optimization in an Unknown MDP under
Omega-Regular Constraints
Jan Krčál, Guillermo A. Pérez, and Jean-François Raskin ...................... 8:1–8:18

Deciding Probabilistic Bisimilarity Distance One for Probabilistic Automata
Qiuyi Tang and Franck van Breugel ........................................... 9:1–9:17

Non-deterministic Weighted Automata on Random Words
Jakub Michaliszyn and Jan Otop .................................................. 10:1–10:16

Ergodic Mean-Payoff Games for the Analysis of Attacks in Crypto-Currencies
Krishnendu Chatterjee, Amir Kafshdar Goharshady, Rasmus Ibsen-Jensen, and
Yaron Velner ............................................................. 11:1–11:17

Bounded Context Switching for Valence Systems
Roland Meyer, Sebastian Muskalla, and Georg Zetzsche ..................... 12:1–12:18

Alternating Nonzero Automata
Paulin Fournier and Hugo Gimbert .............................................. 13:1–13:16
Affine Extensions of Integer Vector Addition Systems with States
  Michael Blondin, Christoph Haase, and Filip Mazowiecki .......................... 14:1–14:17

Verifying Quantitative Temporal Properties of Procedural Programs

Narrowing down the Hardness Barrier of Synthesizing Elementary Net Systems
  Ronny Tredup and Christian Rosenke .................................................... 16:1–16:15

Up-To Techniques for Behavioural Metrics via Fibrations
  Filippo Bonchi, Barbara König, and Daniela Petrişan ............................ 17:1–17:17

Completeness for Identity-free Kleene Lattices
  Amina Doumane and Damien Pous .......................................................... 18:1–18:17

Reachability in Parameterized Systems: All Flavors of Threshold Automata
  Jure Kukovec, Igor Konnov, and Josef Widder ....................................... 19:1–19:17

Selective Monitoring
  Radu Grigore and Stefan Kiefer ......................................................... 20:1–20:16

Synchronizing the Asynchronous
  Bernhard Kragl, Shaz Qadeer, and Thomas A. Henzinger .......................... 21:1–21:17

A Semantics for Hybrid Iteration

GPU Schedulers: How Fair Is Fair Enough?
  Tyler Sorensen, Hugues Evrard, and Alastair F. Donaldson ........................ 23:1–23:17

Linear Equations with Ordered Data
  Piotr Hofman and Sławomir Lasota ..................................................... 24:1–24:17

A Coalgebraic Take on Regular and ω-Regular Behaviour for Systems with Internal Moves
  Tomasz Brengos ....................................................................................... 25:1–25:18

Relating Syntactic and Semantic Perturbations of Hybrid Automata
  Nima Roohi, Pavithra Prabhakar, and Mahesh Viswanathan ........................ 26:1–26:16

Updating Probabilistic Knowledge on Condition/Event Nets using Bayesian Networks
  Benjamin Cabrera, Tobias Heindel, Reiko Heckel, and Barbara König ......... 27:1–27:17

Reachability in Timed Automata with Diagonal Constraints
  Paul Gastin, Sujan Mukherjee, and B. Srivathsan ..................................... 28:1–28:17

Parameterized complexity of games with monotonically ordered ω-regular objectives
  Véronique Bruyère, Quentin Hautem, and Jean-François Raskin .................... 29:1–29:16

A Universal Session Type for Untyped Asynchronous Communication
  Stephanie Balzer, Frank Pfenning, and Bernardo Toninho .......................... 30:1–30:18

Verification of Immediate Observation Population Protocols
  Javier Esparza, Pierre Ganty, Rupak Majumdar, and Chana Weil-Kennedy .... 31:1–31:16
<table>
<thead>
<tr>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Satisfiability Problem for Unbounded Fragments of Probabilistic CTL</td>
<td>32:1–32:16</td>
</tr>
<tr>
<td>Jan Křetínský and Alexej Rotar</td>
<td></td>
</tr>
<tr>
<td>Automatic Analysis of Expected Termination Time for Population Protocols</td>
<td>33:1–33:16</td>
</tr>
<tr>
<td>Michael Blondin, Javier Esparza, and Antonín Kučera</td>
<td></td>
</tr>
<tr>
<td>On Runtime Enforcement via Suppressions</td>
<td>34:1–34:17</td>
</tr>
<tr>
<td>Luca Aceto, Ian Cassar, Adrian Francalanza, and Anna Ingólfsdóttir</td>
<td></td>
</tr>
<tr>
<td>Regular Separability of Well-Structured Transition Systems</td>
<td>35:1–35:18</td>
</tr>
<tr>
<td>Wojciech Czerwiński, Sławomir Lasota, Roland Meyer, Sebastian Muskalla, K. Narayan Kumar, and Prakash Saivasan</td>
<td></td>
</tr>
<tr>
<td>Separable GPL: Decidable Model Checking with More Non-Determinism</td>
<td>36:1–36:16</td>
</tr>
<tr>
<td>Andrey Gorlin and C. R. Ramakrishnan</td>
<td></td>
</tr>
<tr>
<td>(Metric) Bisimulation Games and Real-Valued Modal Logics for Coalgebras</td>
<td>37:1–37:17</td>
</tr>
<tr>
<td>Barbara König and Christina Mika-Michalski</td>
<td></td>
</tr>
<tr>
<td>The Complexity of Rational Synthesis for Concurrent Games</td>
<td>38:1–38:15</td>
</tr>
<tr>
<td>Rodica Condurache, Youssouf Oualhadj, and Nicolas Troquard</td>
<td></td>
</tr>
<tr>
<td>Logics Meet 1-Clock Alternating Timed Automata</td>
<td>39:1–39:17</td>
</tr>
<tr>
<td>Shankara Narayanan Krishna, Khushraj Madnani, and Paritosh K. Pandya</td>
<td></td>
</tr>
<tr>
<td>Progress-Preserving Refinements of CTA</td>
<td>40:1–40:19</td>
</tr>
<tr>
<td>Massimo Bartoletti, Laura Bocchi, and Maurizio Murgia</td>
<td></td>
</tr>
<tr>
<td>Automated Detection of Serializability Violations Under Weak Consistency</td>
<td>41:1–41:18</td>
</tr>
<tr>
<td>Kartik Nagar and Suresh Jagannathan</td>
<td></td>
</tr>
<tr>
<td>Effective Divergence Analysis for Linear Recurrence Sequences</td>
<td>42:1–42:15</td>
</tr>
<tr>
<td>Shaull Almagor, Brynmor Chapman, Mehran Hosseini, Joël Ouaknine, and James Worrell</td>
<td></td>
</tr>
</tbody>
</table>
This volume contains the proceedings of the 29th Conference on Concurrency Theory, which was held in Beijing, China, on September 4–7, 2018. CONCUR 2018 was organised by the Institute of Software, Chinese Academy of Sciences.

CONCUR is a forum for the development and dissemination of leading research in concurrency theory and its applications. Its aim is to bring together researchers, developers, and students to exchange and discuss latest theoretical developments and learn about challenging practical problems. CONCUR is the reference annual event for researchers in the field.

The principal topics include basic models of concurrency such as abstract machines, domain-theoretic models, game-theoretic models, process algebras, graph transformation systems, Petri nets, hybrid systems, mobile and collaborative systems, probabilistic systems, real-time systems, biology-inspired systems, and synchronous systems; logics for concurrency such as modal logics, probabilistic and stochastic logics, temporal logics, and resource logics; verification and analysis techniques for concurrent systems such as abstract interpretation, atomicity checking, model checking, race detection, pre-order and equivalence checking, run-time verification, state-space exploration, static analysis, synthesis, testing, theorem proving, type systems, and security analysis; distributed algorithms and data structures: design, analysis, complexity, correctness, fault tolerance, reliability, availability, consistency, self-organisation, self-stabilisation, protocols. The theoretical foundations of more applied topics like architectures, execution environments, and software development for concurrent systems such as geo-replicated systems, communication networks, multiprocessor and multicore architectures, shared and transactional memory, resource management and awareness, compilers and tools for concurrent programming, programming models such as component-based, object- and service-oriented can also be found at CONCUR.

This edition of the conference attracted 101 full paper submissions, and we thank the authors for their interest in CONCUR 2018. After careful reviewing and discussions, the Program Committee selected 37 papers for presentation at the conference. Each submission was reviewed by at least three reviewers who wrote detailed evaluations and gave insightful comments. We warmly thank the members of the Program Committee and the additional reviewers for their excellent work, including the constructive discussions. The full list of reviewers is available as part of these proceedings.

The conference programme was greatly enriched by the invited talks by Moshe Vardi, Yuxin Deng, Rob van Glabbeek, and Bow-Yaw Wang, as well as the tutorial delivered by Ichiro Hasuo. We thank the speakers for having accepted our invitation and their excellent presentations.

This year, the conference was jointly organised with the 16th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS), the 15th International Conference on Quantitative Evaluation of SysTems (QEST), and the fourth Symposium on Dependable Software Engineering (SETTA) in an overarching event, CONFESTA, organised by the Institute of Software, Chinese Academy of Sciences.

CONFESTA included four more satellite events: the combined 25th International Workshop on Expressiveness in Concurrency and 15th Workshop on Structural Operational Semantics (EXPRESS/SOS), the 3rd International workshop on TIming Performance engineering for Safety critical systems (TIPS'18), the 7th IFIP WG 1.8 Workshop on Trends in Concurrency Theory (TRENDS), and the 8th Young Researchers Workshop on Concurrency
Preface

Theory (YR-CONCUR), as well as a number of tutorials. CONFESTA was preceded by two further associated events, a Summer School on Formal Methods and a CAP Project Workshop.

The CONCUR proceedings are available for open access via LIPIcs, and we thank the staff from Schloss Dagstuhl, in particular Michael Wagner, for helping us with the preparation. Last, but not least, we thank the authors and the participants for making this year’s CONCUR a successful and inspiring event.

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<th>Name</th>
</tr>
</thead>
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<td>Catalin Dima</td>
</tr>
<tr>
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<td>Brijesh Dongol</td>
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<td>Cezara Dragoi</td>
</tr>
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</tr>
<tr>
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<tr>
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<td>Marco Faella</td>
</tr>
<tr>
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</tr>
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<td>Nathanaël Fijalkow</td>
</tr>
<tr>
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<td>Brendan Fong</td>
</tr>
<tr>
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<td>Ignacio Fábregas</td>
</tr>
<tr>
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<td>Pierre Ganty</td>
</tr>
<tr>
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</tr>
<tr>
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<td>Simon Gay</td>
</tr>
<tr>
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<td>Sergey Goncharov</td>
</tr>
<tr>
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</tr>
<tr>
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<td>Alberto Griggio</td>
</tr>
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<td>Gerrit Grossmann</td>
</tr>
<tr>
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<td>Stefan Göller</td>
</tr>
<tr>
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<td>Vojtěch Havlena</td>
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<td>Frédéric Herbreteau</td>
</tr>
<tr>
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<td>Lukas Holik</td>
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</tr>
<tr>
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</tr>
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<td>Ahmed Irfan</td>
</tr>
<tr>
<td>Emanuele D’Osvaldo</td>
<td>Rinat Iusupov</td>
</tr>
<tr>
<td>Vrunda Dave</td>
<td>Petr Jancar</td>
</tr>
</tbody>
</table>
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