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Foreword

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This issue of Theory of Computing Systems is devoted to papers derived from presentations made at the 12th International Computer Science Symposium in Russia (CSR 2017), which was held between June 8 and June 12 2017 in Kazan, and hosted by Kazan Federal University.

The nine papers in this issue were all invited. Three follow after plenary invited lectures: the papers by T. Coquand and S. Huber, Th. Place and M. Zeitoun, and A. Gheorghiu, Th. Kapourniotis and E. Kashefi. The other six are based on some of the 22 papers that were selected by the CSR program committee following the open call for papers. The papers by A. Miasnikov, S. Vassileva and A. Weiß, and by L. Fleischer and M. Kufleitner were distinguished by the Best Paper Award of the conference, and the paper by A. Milovanov received the Best Student Paper Award. All nine papers underwent the same rigorous refereeing process as in every issue of Theory of Computing Systems.

The scope of the Computer Science Symposium in Russia conference series is quite broad and covers a wide range of areas in theoretical computer science and its applications, and this is reflected in the diversity of the topics of the papers in this issue.

In the first article, *Cascade heap: towards optimal time extractions*, M. Babenko, I. Kolesnichenko and I. Smirnov discuss the design of efficient data structures. T. Coquand and S. Huber's paper *An adequacy theorem for partial type theory* deals with an important question in semantics and type theory.

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The paper *Green's relations in deterministic finite automata* by L. Fleischer and M. Kufleitner deepens our understanding of a fundamental aspect of algebraic automata theory. V. Geffert, in *Unary coded* PSPACE-*complete languages in* ASPACE($\log \log n$) explores the role of alternation in computational complexity theory.

A. Gheorghiu, Th. Kapourniotis and E. Kashefi's paper *Verification of quantum computation* surveys an emerging topic, namely the verification of protocols for quantum computation. In *The conjugacy problem in free solvable groups and wreath products of abelian groups is in* TC^0, A. Miasnikov, S. Vassileva and A. Weiß discuss the complexity of algorithmic problems in algebra.

In his paper *On algorithmic statistics for space bounded algorithms*, A. Milovanov explores the interplay between algorithmic information theory and computational complexity. Th. Place and M. Zeitoun's *Generic results for concatenation hierarchies* surveys the recent advances on the interaction between logic and formal language theory.

Finally, O. Verbitsky and M. Zhukovskii's paper *The descriptive complexity of subgraph isomorphism without numerics* deals with the descriptive complexity of a fundamental problem.

We expect that these contributions will be appealing to the experts in the field, while giving a more general audience a broad view of some of the livelier topics in theoretical computer science.

We express our deep gratitude to the authors for their contributions and to the referees for their helpful reports. We also want to thank the members of the Program Committee and the Steering Committee of the conference.

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