This special issue of the Fundamenta Informaticae contains five papers, which are revised and extended versions of the papers selected from the 23rd International Conference on Developments in Language Theory, DLT 2019, hosted by the University of Warsaw, Poland from 5 till 9 August 2019.

DLT conference series gathers together researchers from diverse disciplines and backgrounds interested in formal languages and automata. Its scope is very general and welcomes contributions in combinatorial and algebraic properties of words and languages; grammars, acceptors and transducers for strings, trees, graphs, arrays; algebraic theories for automata and languages; codes; efficient text algorithms; symbolic dynamics; relationships to complexity theory and logic; picture description and analysis; polyominoes and bidimensional patterns; cryptography; concurrency; cellular automata; bio-inspired computing; quantum computing.

Language theory provides important tools for many research areas, starting from languages analysis, signal processing, system verification, process learning, genetics, and broader biology for example protein folding. The mission of the DLT conference is to help transfer new perspectives to words and languages between these communities. The long history and steady growth of the recognition of DLT in different communities show that the mission started by G. Rozenberg and A. Salomaa is important and appreciated.

For the special issue, we decided to select from four to six among the accepted papers. The program committee composed of Jacques Duparc, Pierre Ganty, Paweł Gawrychowski, Tero Harju, Kenji Hashimoto, Piotrek Hofman, Tomohiro I, Denis Kuperberg, Christof Löding, Amaldev Manuel, Thomas Place, Svetlana Puzynina, Karin Quaas, Cristian Riveros, Krishna S, Philippe Schnoebelen, Marinella Sciortino, Michał Skrzypczak, Mikhail Volkov, James Worrell, Georg Zetzsche after taking into consideration various aspects like the novelty of the research or the possible impact of the results, recommended 5 papers. The accepted papers are extended versions of these 5 presented at the conference. All the papers were rigorously refereed according to the standard of the journal.

We would like to thank all the reviewers of the papers submitted to this special issue for their precious advices. We also thank Damian Niwiński, Chief Editor of Fundamenta Informaticae and
Grażyna Domanińska-Żurek Technical Editor of Fundamenta Informaticae, for their help with the preparation of this special issue. Finally, we would like to thank all people involved in the organization of DLT 2019, namely: Grzegorz Fabiański, Jędrzej Kołodziejski, Kamila Łyczek, Vincent Michielini, Radosław Piórkowski, and Janusz Schmude.

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