

Preface

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This is a special issue with special interest in computability and computational complexity with extensions to information and network analysis. It consists of seven invited submissions each of which is carefully reviewed.

The paper entitled: The future of computer science by John E. Hopcroft, Sucheta Soundarajan, and Liaoruo Wang, surveys some important topics and paradigm shift in computer science with the new focus on large-scale data and network analysis.

The paper entitled: Holographic reduction: A domain changed application and its partial converse theorems by Mingji Xia arises the new problem of the converse of Valiant's holographic reductions, and partially answers this question, which makes a significant contribution to the theory of holographic computation.

The paper entitled: On strings with trivial Kolmogorov complexity by George Barmpalias studies the degree theoretic complexity of sets of strings with low algorithmic complexity, building a few fundamental results in the area of algorithmic randomness.

The paper entitled: Color-Coding and its applications: A survey by Jianxin Wang, Qilong Feng, Jianer Chen, describes a comprehensive survey on this important topic of parameterized computation.

The paper entitled: Rent-or-Buy network design problem and the Sample-Augment algorithm: A survey by Peng Zhang, gives a survey on approximation algorithms of the recently active topic of the rent or buy network design.

The paper entitled: Kalimulin pairs of \sum_2^0 ω -enumeration degrees by Ivan N. Soskov and Mariya I. Soskov studies the new phenomena of omega-enumeration degrees which is a natural extension of the classical enumeration degrees.

The paper entitled: A toolkit for generating sentences from context-free grammars by Zhiwu Xu, Lixiao Zheng, and Haiming Chen, presents a toolkit for parsing context-free grammars and generating valid sentences.

I would like to thank all authors for their contribution to this excellent issue, which reflects both our traditional research on computability and computational complexity and the extensions of the theory to information and networks.

I am grateful to Prof. Ruqian Lu for inviting me to organize this special issue, and thank both Professor Ruqian Lu and the members of the Editorial Board of the International Journal of Software and Informatics for cooperation throughout the preparation of this special issue.

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Editor

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