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## FOREWORD

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### Special Section on Blockchain Systems and Applications

Blockchain is a consensus-based distributed system, combined with technologies such as smart contract, cryptography, hashing, Merkle tree, etc. Together, they build a new generation of transactional applications that establish trust, accountability, provenance, and transparency at their core, while streamlining business processes and legal constraints in a cross-organizational collaboration. There are still many issues that need to be addressed specifically in terms of scalability, security, privacy, efficiency, availability and dependability which bring complicated challenges and many open issues for the research community.

This special section in IEICE Transactions on Information and Systems is to present Blockchain Theories and Models, Blockchain Technologies, and Blockchain Systems. It is mainly based on four international conferences: (1) BlockchainSys 2020 in December 2020 in Guangzhou, China (<http://ieeetrustcom.org/BlockchainSys2020/>), (2) IEEE TrustCom 2020 in December 2020 in Guangzhou, China (<http://ieeetrustcom.org/TrustCom2020/>); (3) SpaCCS 2020 in December 2020 in Nanjing, China (<http://spaccs.org/SpaCCS2020/>); and (4) WISA 2020 in September 2020, Guangzhou, China (<http://trust.gzhu.edu.cn/wisa2020/>). In response to the Call for Papers, a total of 18 submissions were received including 2 invited papers and 16 regular papers. After a thorough and careful review process, the editorial committee selected 12 papers (including 2 invited papers) of exceptional quality that prove the significance and importance of the regarding areas.

The editorial committee would like to thank all the reviewers for their constructive comments, and thank all the authors who submitted their precious research work to this special section.

#### Editorial Committee for this Special Section

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Guojun Wang and Yizhi Ren, Guest Editors-in-Chief

**Guojun Wang** (*Member*) received B.Sc. degree in Geophysics, M.Sc. degree in Computer Science, and Ph.D. degree in Computer Science, at Central South University, China, in 1992, 1996, 2002, respectively. He is a Pearl River Scholarship Distinguished Professor of Higher Education in Guangdong Province, a Doctoral Supervisor of School of Computer Science and Cyber Engineering, Guangzhou University, China, a Vice Chairman of Intelligence Engineering Society of Guangzhou, and the Director of Institute of Computer Networks at Guangzhou University. He has been listed in Chinese Most Cited Researchers (Computer Science) by Elsevier in the past seven consecutive years (2014–2020). His h-index is 55 (as of the date Sept 15, 2021). He had been a Professor at Central South University, China; an Adjunct Professor at Temple University, USA; a Visiting Scholar at Florida Atlantic University, USA; a Visiting Researcher at the University of Aizu, Japan; and a Research Fellow at the Hong Kong Polytechnic University, Hong Kong SAR, China. His research interests include artificial intelligence, big data, cloud computing, Internet of Things (IoT), blockchain, trustworthy/dependable computing, network security, privacy preserving, recommendation systems, smart cities, and medical information systems. He has published more than 400 technical papers and books/chapters in the above areas, including top international journals like ACM TAAS/TOSN/CSUR and IEEE TC/TPDS/TDSC, and top international conferences like CCS/WWW/INFOCOM/CIKM/DSN/ESORICS. His research is supported by the Key Project of the National Natural Science Foundation of China, the National Key Research and Development Program of China, the National High-Tech Research and Development Plan of China (863 Plan), the Ministry of Education Fund for Doctoral Disciplines in Higher Education, the Guangdong Provincial Natural Science Foundation, the Hunan Provincial Natural Science Foundation, and the Hunan Provincial Science and Technology Program. His research is also supported by talents programs including the Program for Pearl River Scholarship Distinguished Professor of Higher Education in Guangdong Province, the Hunan Provincial Natural Science Foundation of China for Distinguished Young Scholars, and the Program for New Century Excellent Talents in University. He is a recipient of a number of science and technology awards, including the 2018 Special Government Allowances of the State Council, the 2018 Guangzhou Municipal Excellent Experts, the 2014 First Prize of the National Natural Science Award (name in the 5th place), the 2014 Second Prize of the Hunan Provincial Natural Science Award (name in the 1st place), the 2013 and 2003 First Prize of two Natural Science Awards of Ministry of Education of China (name in the 4th and 5th places, respectively), and a number of Best Paper Awards in the international conferences, including iSCI 2019, IEEE UIC 2018, IEEE IoP 2018, IEEE ISPA 2013, and IEEE TrustCom 2010. He is an associate editor or on editorial board of some international journals including IEEE Transactions on Parallel and Distributed Systems (TPDS), Security and Communication Networks (SCN), International Journal of Parallel, Emergent and Distributed Systems (IJPEDS), and International Journal of Computational Science and Engineering (IJCSE). Email: csgjwang@gzhu.edu.cn. Homepage: <http://trust.gzhu.edu.cn/faculty/~csgjwang/>.



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