

# **Report by SIG on Wireless Blockchain Networks**

Chairs:

Zehui Xiong (Singapore University of Technology and Design)

Salil Kanhere (The University of New South Wales)

Bin Cao (Beijing University of Posts and Telecommunications)

Jiawen Kang (Guangdong University of Technology)

# Scope of WBN SIG

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- How to use blockchain to facilitate the communication and network functions, trading, sharing and optimization for 5G/6G especially for cognitive radio (i.e., blockchain for new communication scenarios including wireless metaverses)
- How communication plays a role in blockchain and optimize blockchain performance (i.e., communication for blockchain consensus optimization)

# Team

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## ■ Chairs

Zehui Xiong, Singapore University of Technology and Design, Singapore  
Salil Kanhere, The University of New South Wales, Australia  
Bin Cao, Beijing University of Posts and Telecommunications, China  
Jiawen Kang, Guangdong University of Technology, China

## Senior Advisors

Yue Gao, University of Surrey, UK  
Chonggang Wang, Interdigital, US  
Tony Q. S. Quek, Singapore University of Technology and Design, Singapore  
Mugen Peng, Beijing University of Posts and Telecommunications, China  
Dusit Niyato, Nanyang Technological University, Singapore  
Lei Zhang, University of Glasgow, UK

## ■ Founding Members

Lei Zhang, University of Glasgow, UK  
Yue Gao, University of Surrey, UK  
Salil Kanhere, The University of New South Wales, Australia  
Bin Cao, Beijing University of Posts and Telecommunications, China  
Jaafar M. H. Elmirghani, University of Leeds, UK  
Hamed Ahmadi, University of York, UK  
Alexander Okon, University of Canberra, Australia  
Mugen Peng, Beijing University of Posts and Telecommunications, China  
Choo Raymond, University of Texas at San Antonio  
Shengli Zhang, Shenzhen University, China  
Xavier Bellekens, University of Strathclyde, UK  
Kumudu Munasinghe, University of Canberra, Australia  
Mohamed Ben Farah, University of Strathclyde, UK

Thakur, Subhasis, National University of Ireland, Ireland  
Nima Afraz, Trinity College Dublin, Ireland  
Oluwakayode Onireti, University of Glasgow, UK  
Yue Cao, WuHan University, China  
Yao Sun, University of Glasgow, UK  
Zhengguo Sheng, University of Sussex, UK  
Paulo Valente Klaine, University of Glasgow, UK  
Zehui Xiong, Singapore University of Technology and Design, Singapore  
Dusit Niyato, Nanyang Technological University, Singapore  
Jun Zhao, Nanyang Technological University, Singapore  
Yang Zhang, Wuhan University of Technology, China  
Huawei Huang, Sun Yat-Sen University, China  
Jiawen Kang, Nanyang Technological University, Singapore  
Wei Cai, The Chinese University of Hong Kong, Shenzhen, China  
Kun Zhu, Nanjing University of Aeronautics and Astronautics, China  
Yuan Wu, University of Macau, China  
Jiangtian Nie, Nanyang Technological University, Singapore  
Yuan Liu, Northeastern University, China  
Hong-Ning Dai, Macau University of Science and Technology, China  
Xintong Ling, Southeast University, China  
Qin Hu, Indiana University–Purdue University Indianapolis, USA  
Zhenni Li, Guangdong University of Technology, China  
Ali Dorri, Queensland University of Technology, Australia  
Dedeoglu Volkan, CSIRO Data61, Australia  
Sidra Malik, The University of New South Wales, Australia  
Hao Xu, University of Glasgow, UK  
And more ...

# Activities

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1. **Paper Award:** “Deep Anomaly Detection for Time-Series Data in Industrial IoT: A Communication-Efficient On-Device Federated Learning Approach”, Outstanding Paper Award, IEEE Communications Society, 2024 (Authors: [Jiawen Kang](#), [Zehui Xiong](#), [Jiangtian Nie](#))
2. **Paper Award:** “Deep Reinforcement Learning based Multi-attribute Auction Model for Resource Allocation in Vehicular AIGC Services”, International Conference on Generative Artificial Intelligence and Information Security, Best Paper Award, 2024 (Authors: [Jiawen Kang](#), [Zehui Xiong](#))
3. **Edited Book:** by Cambridge University Press, “Cryptoeconomics: Economic Mechanisms Behind Blockchains”, 2023 (Authors: [Dusit Niyato](#))
4. **Edited Book:** by Wiley-IEEE Press, “Metaverse Communication and Computing Networks: Applications, Technologies, and Approaches”, 2023 (Editors: [Dusit Niyato](#))
5. **Edited Book Chapter:** by Springer International Publishing, “Decentralized Identity Management and Blockchains: Design Patterns and Architectures”, in Advances in Information Security, pp. 465 – 491, 2024 (Author: [Salil Kanhere](#))
6. **Edited Book Chapter:** by Springer International Publishing, “SplITS: Split Input-to-State Mapping for Effective Firmware Fuzzing” in, pp. 290 – 310, 2024 (Author: [Salil Kanhere](#))
7. **Edited Book Chapter:** by Springer International Publishing, “Text-Conditioned Graph Generation Using Discrete Graph Variational Autoencoders”, in, pp. 62 – 74, 2024 (Author: [Salil Kanhere](#))
8. **Special Issue:** Blockchain (ELSP), Special Issue on “Blockchain Infrastructure for Web3: Technologies, Tools and Applications”, (Guest Editor: [Huawei Huang](#))

# Activities

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9. **Special Issue:** IET Blockchain, Special Issue on “Cross-blockchain Interoperability for Metaverse: Technologies, Applications, and Challenges”, (Guest Editor: [Huawei Huang](#))
10. **Editorial broad:** IEEE Communications Surveys and Tutorials, 2024 (Associate Editor: [Jiawen Kang](#))
11. **Editorial broad:** IEEE Transactions on Cognitive Communications and Networking, 2024 (Associate Editor: [Dusit Niyato](#), [Jiawen Kang](#))
12. **Workshop Organizing:** IEEE International Mediterranean Conference on Communications and Networking (MeditCom), Workshop on Explainable and Responsible AI/GenAI for 6G Networks, 2024 (Track Chair: [Dusit Niyato](#))
13. **Conference Organizing:** IEEE Global Communications Conference (Globecom), 2024 (Symposium Co-Chair: [Jiawen Kang](#))
14. **Associate Editor**, IEEE Data Descriptions ([Dusit Niyato](#), [Jiawen Kang](#))
15. **Members-at-Large** to the Board of Governors, IEEE Communications Society (2024-2026) ([Dusit Niyato](#))
16. **Member**, IEEE Communications Society, Fellow Evaluation Committee (2022-2024) ([Dusit Niyato](#))
17. **Associate Editor** of IEEE Transactions on Network Science and Engineering ([Lei Zhang](#))
18. **Associate Editor** of IEEE Internet of Things (IoT) Journal ([Lei Zhang](#))
19. **Associate Editor** of IEEE Wireless Communications Letters ([Lei Zhang](#))

# Activities

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20. **Conference Organizing:** International Conference on Computing, Networking and Communications (ICNC), 2024 (Symposium Chairs: [Zehui Xiong](#), [Yue Gao](#), [Bin Cao](#))
21. **Conference Organizing:** The Sixth International Conference on Blockchain Computing and Applications (BCCA), 2024 (Steering Committee: [Salil Kanhere](#))
22. **Conference Organizing:** IEEE Global Blockchain Conference (GBC), 2024 (Co-Chair: [Lei Zhang](#), [Huawei Huang](#))
23. **Conference Organizing:** International Conference on Blockchain, Metaverse and Trustworthy Systems (BlockSys), 2024 (Program Chair: [Huawei Huang](#))
24. **Conference Organizing:** IEEE International Conference on Internet of Things (iThings), 2024 (Program Chair: [Dusit Niyato](#))
25. **Conference Organizing:** The 10th International Conference on Cloud and Big Data Computing (CBDCom), 2024 (Track Chair: [Huawei Huang](#))
26. **Conference Organizing:** IEEE International Conference on Communication Technology (ICCT), 2024 (Track Chairs: [Yao Sun](#), [Bin Cao](#))
27. **Conference Organizing:** IEEE International Conference on Distributed Computing Systems(ICDCS), Block Track, 2024 (Track Chair: [Huawei Huang](#))
28. **Conference Organizing:** International Conference on Electronics and Communication, Network and Computer Technology(ECNCT), 2024 (Chair: [Jiawen Kang](#), [Dusit Niyato](#))

# Activities

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29. **Conference Organizing:** International Conference on Computer Engineering and Intelligent Control (ICCEIC), 2024 (Chair: [Jiawen Kang](#), [Dusit Niyato](#))
30. **Keynote:** IEEE Cybermatics Congress, Blockchain-Empowered Semantic and Lifecycle Management for AI-Generated Content (AIGC) in EdgeNetworks, 2023 (Speaker: [Dusit Niyato](#))
31. **Keynote:** International Conference on Big Data Economy and Information Management (BDEIM), 2024 (Speaker: [Jiawen Kang](#))
32. **Keynote:** Big Bay Computer Innovation Technology Conference, 2023, (Speaker: [Huawei Huang](#))
33. **Keynote:** CCF China Blockchain Technology and Application Summit Forum, 2023, (Speaker: [Huawei Huang](#))
34. **Tutorial:** "Empowering Artificial Intelligence-Generated Content (AIGC) with Mobile Edge Networks" IEEE ICC, 2024 ([Zehui Xiong](#))
35. **Tutorial:** "Empowering the Metaverse with Edge Intelligence and Generative AI" IEEE GLOBECOM, 2023 ([Zuihui Xiong](#), [Dusit Niyato](#))
36. **Tutorial Chairs:** IEEE International Conference on Communications in China (ICCC) ([Dusit Niyato](#))

# ***Thank you for your attention!***

For any further information or if you are interested in joining the SIG,  
please contact [kavinkang@gdut.edu.cn](mailto:kavinkang@gdut.edu.cn)

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<https://cn.committees.comsoc.org/special-interest-groups-sigs/sig-on-wireless-blockchain-networks/>