

# Hongbin Zhuang

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## Employment

2024.09-Present

City University of Hong Kong

Postdoctoral Fellow



## Educations

2019.09-2024.06

Fuzhou University

Ph.D.

2015.09-2019.06

Huaqiao University

B.Eng.



## Research Interests

- Endogenous Security
- Fault Diagnosis
- Data Center Networks
- Fault-Tolerant Routing
- Network-on-Chips
- Interconnection Networks



## Publication List

1. **Hongbin Zhuang**, Xiao-Yan Li, Jou-Ming Chang, Cheng-Kuan Lin, Ximeng Liu, Embedding Hamiltonian paths in  $k$ -ary  $n$ -cubes with exponentially-many faulty edges. *IEEE Transactions on Computers*, vol. 72, no. 11, pp. 3245-3258, 2023.
2. **Hongbin Zhuang**, Xiao-Yan Li, Jou-Ming Chang, Dajin Wang, An efficient algorithm for Hamiltonian path embedding of  $k$ -ary  $n$ -cubes under the partitioned edge fault model. *IEEE Transactions on Parallel and Distributed Systems*, vol. 34, no. 6, pp. 1802-1815, 2023.
3. **Hongbin Zhuang**, Xiao-Yan Li, Cheng-Kuan Lin, Ximeng Liu, Xiaohua Jia, Novel reliability indicators from the perspective of data center networks. *IEEE Transactions on Reliability*, vol. 74, no. 1, pp. 2459-2472, 2025.
4. **Hongbin Zhuang**, Xiao-Yan Li, Jou-Ming Chang, Ximeng Liu, Paired 2-disjoint path covers of  $k$ -ary  $n$ -cubes under the partitioned edge fault model. *Journal of Parallel and Distributed Computing*, vol. 190, 2024, Art. no. 104887.
5. **Hongbin Zhuang**, Xiao-Yan Li, Dajin Wang, Cheng-Kuan Lin, Kun Zhao, Enabling high fault-tolerant embedding capability of alternating group graphs. *Future Generation Computer Systems*, vol. 158, pp. 110-121, 2024.
6. **Hongbin Zhuang**, Wanling Lin, Xiao-Yan Li, Jou-Ming Chang, Matroidal connectivity and conditional matroidal connectivity of star graphs. *Theoretical Computer Science*, vol. 977, 2023, Art. no. 114173.
7. **Hongbin Zhuang**, Wenzhong Guo, Xiao-Yan Li, Ximeng Liu, Cheng-Kuan Lin, The component connectivity, component diagnosability, and  $t/k$ -diagnosability of Bicube networks. *Theoretical Computer Science*, vol. 896, pp. 145-157, 2021.
8. Qinying Lin, **Hongbin Zhuang\***, Xiao-Yan Li, Lichao Su, All-to-all routing algorithm for Galaxyfly networks. In the proceedings of 24th HPCC, pp. 888-893, 2022.
9. **Hongbin Zhuang**, Wenzhong Guo, Xiaoyan Li, Ximeng Liu, Cheng-Kuan Lin, The component diagnosability of general networks. *International Journal of Foundations of Computer Science*, vol. 33, no. 1, pp. 67-89, 2022.
10. **Hongbin Zhuang**, Sunjian Zheng, Ximeng Liu, Cheng-Kuan Lin, Xiaoyan Li, Reliability evaluation of generalized exchanged hypercubes based on imprecise diagnosis strategies. *Parallel Processing Letters*, vol. 31, no. 1, p. 2150005, 2021.



## Publication List

11. Wanling Lin, **Hongbin Zhuang**, Xiao-Yan Li, Yufang Zhang, Reliability evaluation of generalized exchanged  $X$ -cubes under the  $R_g$ -conditional restriction. *Journal of Supercomputing*, vol. 80, pp. 11401-11430, 2024.
12. Xiaoyan Li, **Hongbin Zhuang**, Shuming Zhou, Hongju Cheng, Cheng-Kuan Lin, Wenzhong Guo, Reliability evaluation of generalized exchanged  $X$ -cubes based on the condition of  $g$ -good-neighbor. *Wireless Communications and Mobile Computing*, vol. 4, pp. 1-16, 2020.
13. Kun Zhao, **Hongbin Zhuang**, Xiao-Yan Li, Fangying Song, Lichao Su, Partition-edge fault-tolerant Hamiltonicity of pancake graphs. In the proceedings of 25th ICS, pp. 192-204, 2022.
14. Xiao-Yan Li, Kun Zhao, **Hongbin Zhuang**, Xiaohua Jia, Novel schemes for embedding Hamiltonian paths and cycles in balanced hypercubes with exponential faulty edges. *Journal of Parallel and Distributed Computing*, vol. 177, pp. 182-191, 2023.
15. Xiao-Yan Li, Zhaoding Lin, **Hongbin Zhuang**, Jou-Ming Chang, Enabling high reliability via matroidal connectivity and conditional matroidal connectivity on arrangement graph networks. *Theoretical Computer Science*, vol. 1024, 2025, Art. no. 114927.
16. Wanling Lin, Zhaoding Lin, **Hongbin Zhuang**, Xiao-Yan Li, Enhancing reliability of folded petersen networks based on edge partition. *International Journal of Foundations of Computer Science*, vol. 36, no. 04, pp. 583-598, 2025.
17. Jianping Cai, Yang Liu, Ximeng Liu, Jiayin Li, **Hongbin Zhuang**, Privacy-preserving federated cross-domain social recommendation. In the proceedings of FL-IJCAI, pp. 144-158, 2022.
18. Yufang Zhang, Ximeng Liu, Xiaoyan Li, Wanling Lin, **Hongbin Zhuang**, The  $R_g$ -conditional connectivity and diagnosability of generalized exchanged  $X$ -cubes. In the proceedings of 21th QRS-C, pp. 897-904, 2021.
19. 刘西蒙, 郭文忠, 李家印, 李小燕, 庄宏滨, 基于城市交通的隐私保护压缩感知实时交通监测方法 (Chinese Patent).
20. Ximeng Liu, Wenzhong Guo, Jiayin Li, Xiaoyan Li, **Hongbin Zhuang**, Realtime urban traffic status monitoring method based on privacy-preserving compressive sensing. US Patent 11, 303, 620.



## Honors & Awards

1. Midterm Study Scholarship for Master Students in Fuzhou University, 2021.
2. Freshman Special Scholarship for Doctoral Candidate in Fuzhou University, 2021.
3. National Scholarship for Doctoral Students, 2023.
4. "Lu Jiayi" Scholarship for Outstanding Graduate Student (only twenty students per year in China), 2023.
5. Excellent Graduate of Fuzhou University, 2024.
6. Outstanding Doctoral Dissertation Award in Fuzhou University, 2025.



## Academic Service

- **TPC Member:** IEEE International Symposium on Parallel and Distributed Processing with Applications
- **Reviewer:** IEEE Transactions on Computers; IEEE Transactions on Communications; IEEE Transactions on Reliability; The Journal of Supercomputing; Cluster Computing; Journal of the Chinese Institute of Engineers