

# HONGBIN ZHUANG

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## RESEARCH INTERESTS

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- Endogenous Security
- Data Center Networks
- Interconnection Networks
- Fault Tolerance
- Fault Diagnosis
- Fault-Tolerant Routing

## EMPLOYMENT

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**City University of Hong Kong**

*Sep. 2024 - present*

Postdoctoral Fellow, advised by Prof. Xiaohua Jia

## EDUCATION

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**Fuzhou University**

*Sep. 2019 - Jun. 2024*

Ph.D. in Computer Science

**Huaqiao University**

*Sep. 2015 - Jun. 2019*

B.Eng. in Civil Engineering

## PUBLICATIONS AND PATENTS

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- [1] **Hongbin Zhuang**, Wanling Lin, Jou-Ming Chang, Xiao-Yan Li, Xiaohua Jia, “Optimal fault-tolerant path and cycle embedding of hypercube networks under the PEF model”, *IEEE Transactions on Computers*, DOI: 10.1109/TC.2026.3654555.
- [2] **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.
- [3] **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.
- [4] **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.
- [5] **Hongbin Zhuang**, Chen Guo, Hao Liu, Xiao-Yan Li, Xiaohua Jia, “Assessing embedding capability of arrangement graphs from the perspectives of partitioned edge faults”, *IEEE Transactions on Reliability*, vol. 74, no. 4, pp. 5753-5764, 2025.
- [6] **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.
- [7] **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.
- [8] **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.

- [9] **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.
- [10] 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.
- [11] **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.
- [12] **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.
- [13] Wanling Lin, **Hongbin Zhuang**, Xiao-Yan Li, Yufang Zhang, “Reliability evaluation of generalized exchanged  $X$ -cubes under the  $R_g$ -conditional restriction”, *The Journal of Supercomputing*, vol. 80, pp. 11401-11430, 2024.
- [14] 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.
- [15] 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.
- [16] 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.
- [17] 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.
- [18] 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.
- [19] 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.
- [20] 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.
- [21] 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.

## ACADEMIC SERVICE

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- Invited reviewer of the International World Wide Web Conference, IEEE Transactions on Computers, IEEE Transactions on Networking, IEEE Transactions on Communications, IEEE Transactions on Reliability, The Journal of Supercomputing, Cluster Computing, Journal of the Chinese Institute of Engineers.
- TPC of the 23rd IEEE International Symposium on Parallel and Distributed Processing with Applications (IEEE ISPA 2025).

## **SELECTED HONORS AND AWARDS**

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- Midterm Study Scholarship for Master Students in Fuzhou University, 2021.
- Freshman Special Scholarship for Doctoral Candidate in Fuzhou University, 2021.
- National Scholarship for Doctoral Students, 2023.
- “Lu Jiayi” Scholarship for Outstanding Graduate Student, 2023.
- Excellent Graduate of Fuzhou University, 2024.
- Outstanding Doctoral Dissertation Award in Fuzhou University, 2025.