

# Hongzong LI

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## RESEARCH INTERESTS

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Optimization, Robotics, Autonomous Systems, Fuzzy Systems, Computational Intelligence, Neural Networks, Matrix Factorization, Clustering

## EMPLOYMENT

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**Northwestern Polytechnical University, Xi'an, China** Jun. 2026 - Present  
Professor, School of Computer Science

**Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong** Jul. 2025 - Jun. 2026  
Postdoctoral Fellow, Hong Kong Generative AI Research and Development Center  
➤ Advisor: [Prof. Dapeng WU](#) (Chair Professor, IEEE Fellow)

**City University of Hong Kong, Kowloon, Hong Kong** Feb. 2025 - Jun. 2025  
Postdoctoral Fellow, Department of Computer Science

## EDUCATION

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**City University of Hong Kong, Kowloon, Hong Kong** Jan. 2021 - Dec. 2024  
Ph.D. in Computer Science  
➤ Advisor: [Prof. Jun WANG](#) (Member of Academia Europaea, IEEE Life Fellow, HKAE, FIAPR)

**Northeastern University, Shenyang, China** Sept. 2016 - July 2020  
B.E. in Automation, School of Information Science and Engineering  
➤ Overall GPA: 3.9891/5 - ranking within the top 5%.  
➤ Advisor: [Prof. Dong XIAO](#)

## HONORS & AWARDS

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### Doctor of Philosophy (Ph.D.)

- Outstanding Academic Performance Award, City University of Hong Kong, 2024
- Outstanding Academic Performance Award, City University of Hong Kong, 2023
- IEEE NTCI2025 Best Paper Award
- Postgraduate Studentship (18,270 HKD per month)
- Institutional Research Tuition Scholarship (3,508 HKD per month)
- Institutional Research Tuition Grant (3,508 HKD per month)

### Bachelor of Engineering (B.E.)

- Outstanding Graduates of Liaoning Province in 2020
- The Special Prize of excellent students of Baosteel in 2019 (20,000 CNY)
- The Fourth most influential graduate of the College in 2020
- The First Prize of "TI" Cup Electronic Design Competition for undergraduate students in Liaoning Province
- The Special Prize of the 7th China TRIZ Cup Undergraduate Innovation Method Competition
- The First Prize of the fourth Liaoning "TRIZ Cup" college students innovation method competition
- Northeastern University (2019) National Innovation Training Program for College Students - National Excellent
- Northeastern University (2019) National Innovation Training Program for College Students - my favorite innovation program for College Students
- Northeastern University (2018) National Innovation Training Program for College Students - Provincial Qualification
- The Second Prize of the 17th Undergraduate Electronic Design Competition of "Jianlong iron and steel" of Northeastern University in 2018
- The Third Prize of the fourth Internet plus China Northeastern University Student Competition
- First-class scholarship for outstanding students at Northeastern University (2018-2019, and 2019-2020)
- Third-class scholarship for outstanding students at Northeastern University (2016-2017, and 2017-2018)

## PUBLICATIONS

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### Selected Publications:

- [1] **H. Li** and J. Wang, "From Soft Clustering to Hard Clustering: A Collaborative Annealing Fuzzy c-means Algorithm," *IEEE Transactions on Fuzzy Systems*, vol. 32, pp. 1181-1194, 2024. (IF: 12.253)
- [2] **H. Li**, J. Wang, H. Che, and D. Wu, "Compressed Sensing via Sequential Majorization-Minimization and Collaborative Neurodynamic Optimization," *IEEE Transactions on Neural Networks and Learning Systems*, accepted, 2026. (IF: 14.255)
- [3] **H. Li** and J. Wang, "Capacitated Clustering via Majorization Minimization and Collaborative Neurodynamic Optimization," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 35, pp. 6679-6692, 2024. (IF: 14.255)
- [4] **H. Li** and J. Wang, "Machine-Cell and Part-Family Formation via Neurodynamics-Driven Constrained Binary Matrix Factorization," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 55, pp. 9456-9467, 2026. (IF: 8.7)

- [5] **H. Li**, J. Wang, N. Zhang, and W. Zhang, “Binary Matrix Factorization via Collaborative Neurodynamic Optimization,” *Neural Networks*, vol. 176, pp. 106348, 2024. (IF: 7.8)
- [6] **H. Li** and J. Wang, “CAPKM++ 2.0: An Upgraded Version of the Collaborative Annealing Power K-means++ Clustering Algorithm,” *Knowledge-Based Systems*, p. 110241, 2023. (IF: 8.139)
- [7] **H. Li** and J. Wang, “Collaborative Annealing Power K-means++ Clustering,” *Knowledge-Based Systems*, vol. 255, p. 109593, 2022. (IF: 8.139)
- [8] **H. Li** and J. Wang, “A Collaborative Neurodynamic Algorithm for Quadratic Unconstrained Binary Optimization,” *IEEE Transactions on Emerging Topics in Computational Intelligence*, vol. 9, no. 1, pp. 228-239, 2025. (IF: 5.3)
- [9] F. Gu, Z. Liang, J. Ma and **H. Li**<sup>✉</sup>, “The Matthew Effect of AI Programming Assistants: A Hidden Bias in Software Evolution,” in *14th International Conference on Learning Representations (ICLR2026)*. (CCF-A, corresponding author)
- [10] S. Tang, R. Feng, S. Zhuang, Y. Zhang and **H. Li**<sup>✉</sup>, “Adversary-Free Counterfactual Prediction via Information-Regularized Representations,” in *29th International Conference on Artificial Intelligence and Statistics (AISTATS2026)*. (corresponding author)
- [11] **H. Li**, L. Liao, Y. Zhang and X. Dai, “A Collaborative Neurodynamic Optimization Algorithm for Capacitated Vehicle Routing Problem,” in *14th International Conference on Intelligent Control and Information Processing (ICICIP2026)*. IEEE, 2026.
- [12] **H. Li**, L. Liao, X. Dai, Y. Feng, and S. Tang, “Balancing Efficiency and Fairness: An Iterative Exchange Framework for Multi-UAV Cooperative Path Planning,” in *2025 International Conference on New Trends in Computational Intelligence (NTCI2025)*. IEEE, 2025, pp. 49-53.
- [13] **H. Li** and J. Wang, “Bi-clustering for Binary Data via Neurodynamics-driven Binary Matrix Factorization,” in *13-th International Conference on Intelligent Control and Information Processing (ICICIP 2025)*. IEEE, 2025, pp. 90-97.
- [14] **H. Li**, J. Wang, and J. Wang, “Solving the Travelling Salesman Problem Based on Collaborative Neurodynamic Optimization with Discrete Hopfield Networks,” in *11-th International Conference on Information Science and Technology (ICIST 2021)*. IEEE, 2021, pp. 456–465.
- [15] **H. Li** and J. Wang, “A Collaborative Neurodynamic Optimization Algorithm Based on Boltzmann Machines for Solving the Traveling Salesman Problem,” in *11-th International Conference on Intelligent Control and Information Processing (ICICIP 2021)*. IEEE, 2021, pp. 325–333.
- [16] **H. Li** and J. Wang, “Collaborative Neurodynamic Algorithms for Solving Sudoku Puzzles,” in *12-th International Conference on Information Science and Technology (ICIST 2022)*. IEEE, 2022, pp. 8–17.
- [17] **H. Li** and J. Wang, “A Collaborative Neurodynamic Optimization Algorithm Based on Boltzmann Machines and 2-Opt Heuristic for Solving the Traveling Salesman Problem,” in *17-th International Conference on Advanced Computational Intelligence (ICACI 2025)*. IEEE, 2025, pp. 1-8.
- [18] C. Yu\*, **H. Li**\*, J. Ma\*, S. Tang, Y. Hu and J. Huang, “TopoBind: Multi-Modal Prediction of Antibody-Antigen Binding Free Energy via Sequence Embeddings and Structural Topology,” in *2026 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2026)*. IEEE, 2026. (co-first author, CCF-B)
- [19] X. Ye\*, **H. Li**\* and J. Wang, “HVAC System Fault Diagnosis via Feature Selection and Classification,” in *13-th International Conference on Information Science and Technology (ICIST 2023)*. IEEE, 2023, pp. 432-440. (co-first author)
- [20] D. Xiao, **H. Li**, and X. Sun, “Coal Classification Method Based on Improved Local Receptive Field-Based Extreme Learning Machine Algorithm and Visible–Infrared Spectroscopy,” *ACS Omega*, vol. 5, no. 40, pp. 25 772–25 783, 2020. (student first author)
- [21] D. Xiao, **H. Li**, C. Liu, and Q. He, “Large-Truck Safety Warning System Based on Lightweight SSD Model,” *Computational Intelligence and Neuroscience*, vol. 2019, 2019. (student first author)

#### ACADEMIC SERVICE

**Publication chair and committee member:** • The 20th International Symposium on Neural Networks (ISNN 2026), Hanzhong, China. • The 17th International Conference on Advanced Computational Intelligence (ICACI2025), Bath, UK.

**Session chair and committee member:** The 13th International Conference on Information Science and Technology (ICIST2023), Cairo, Egypt.

**Reviewer of the following journals and conferences:** • IEEE Transactions on Pattern Analysis and Machine Intelligence, • IEEE Transactions on Neural Networks and Learning Systems, • IEEE Transactions on Knowledge and Data Engineering, • IEEE Transactions on Industrial Electronics, • IEEE Transactions on Consumer Electronics, • IEEE Transactions on Computational Social Systems, • Neural Networks, • Mathematical Biosciences and Engineering, • Signal Processing, • Journal of Low Frequency Noise, Vibration & Active Control, • Science China Technological Sciences, • Scientific Reports, • Quantum Information Processing, • Cloud Computing and Data Science, •

ICIST2022, • ICIST2024, • ICICIP2024, • ISNN2024, • ICCA2024, • NeurIPS2024, • AAAI2025, • ICLR2025, • AISTATS2025, • ICML2025, • AAAI2026, • AISTATS2026.

## MENTORING EXPERIENCE

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- Fei Gu** Jul. 2025 - Feb. 2026  
*Master at City University of Hong Kong (Dongguan), Department of Computer Science*  
➤ Topic: The impact of vibe programming on software ecosystems; published as first author at ICLR2026
- Ciyuan Yu** Jul. 2025 - Dec. 2025  
*Master at City University of Hong Kong (Dongguan), Department of Computer Science*  
➤ Topic: Topology-based antibody-antigen binding prediction; published as first author at ICASSP2026
- Ran Zhang** Jun. 2021 - Dec. 2021  
*Master at City University of Hong Kong, Department of Data Science*  
➤ Topic: Portfolio and index tracking; published as first author at ICICIP2021
- Xuntan Ye** Jan. 2023 - Dec. 2023  
*Undergraduate at City University of Hong Kong, Department of Computer Science*  
➤ Topic: Classification methods for HVAC system fault diagnosis; published as first author at ICIST2023

## TEACHING EXPERIENCE

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- Teacher (Tutorial) in CS5486 Intelligent Systems at CityU (DG), Dong Guan Spring 2025  
Teaching assistant in CS5487 Machine Learning: Principles and Practice at CityU, Hong Kong Fall 2024  
Teaching assistant in CS4386 AI Game Programming at CityU, Hong Kong Spring 2024  
Teaching assistant in CS5489 Machine Learning: Algorithms and Applications at CityU, Hong Kong Fall 2023  
Teacher (Tutorial) in CS5486 Intelligent Systems at CityU, Hong Kong Fall 2022  
Teaching assistant in CS4386 AI Game Programming at CityU, Hong Kong Spring 2023  
Teaching assistant in GE2313 Global IT Case Studies at CityU, Hong Kong Spring 2022, Fall 2022  
Teaching assistant in CS1302 Introduction to Computer Programming at CityU, Hong Kong Spring 2021

## TALKS & PRESENTATIONS

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- Bi-clustering for Binary Data via Neurodynamics-driven Binary Matrix Factorization  
In ICICIP2025, Muscat, Oman, Feb. 2025
- A Collaborative Neurodynamic Optimization Algorithm Based on Boltzmann Machines and 2-Opt Heuristic for Solving the Traveling Salesman Problem  
In ISNN2024, Weihai, Shandong, Jul. 2024
- HVAC System Fault Diagnosis via Feature Selection and Classification  
In ICIST2023, Cairo, Egypt, Dec. 2023
- Collaborative Neurodynamic Algorithms for Solving Sudoku Puzzles  
In ICIST2022, Online, Oct. 2022
- Solving the Travelling Salesman Problem Based on Collaborative Neurodynamic Optimization with Discrete Hopfield Networks  
In ICIST2021, Online, May 2021
- A Collaborative Neurodynamic Optimization Algorithm Based on Boltzmann Machines for Solving the Traveling Salesman Problem  
In ICICIP2021, Online, Dec. 2021

## PATENTS

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### Patents of Invention:

- Anti-collision method and device for mine car, Dong Xiao, **Hongzong LI**, Qifei He, Xiaotong Zhang, Yuan Lin, CN110395207A, 2019.11.01
- Mine truck anti-collision warning system and method based on radar and Wi-Fi, Dong Xiao, **Hongzong LI**, Qifei He, Xiaotong Zhang, Yuan Lin, Chenyi Liu, CN110459074A, 2019.11.15
- Method and device for detecting iron content in iron ore, Dong Xiao, Guotai Jiang, **Hongzong Li**, Zeyuan Zhang, CN109060675A, 2018.12.21

### Software Copyrights:

- Vehicle panoramic assisted driving system, Dong Xiao, **Hongzong LI**, Qifei He, 2019SR0716144
- WIFI-based anti-collision warning system for mining trucks, Dong Xiao, **Hongzong LI**, Qifei He, 2019SR1029773

### Patents of Utility Model:

- Anti-collision device for mine car, Dong Xiao, **Hongzong LI**, Qifei He, CN210653003U, 2020.06.02
- Mine truck anti-collision warning system based on radar and WIFI, Dong Xiao, **Hongzong LI**, Qifei He, Xiaotong Zhang, Yuan Lin, Chenyi Liu, CN210574333U, 2020.05.19
- A radar and GPS based collision avoidance device for mine cars, Qifei He, **Hongzong LI**, Jian He, CN212675166U, 2021.03.09