

# CHAO LI

## EDUCATION

2010/09–2017/06	DOCTOR OF ENGINEERING (MAJOR: COMMUNICATION ENGINEERING) College of Information and Communication Engineering Harbin Engineering University Harbin, China
2006/09–2010/06	BACHELOR OF ENGINEERING (MAJOR: INFORMATION COUNTERMEASURES) College of Information and Communication Engineering Harbin Engineering University Harbin, China

## WORK EXPERIENCE

2021/06–present	RESEARCH SCIENTIST (INDEFINITE-TERM) Tensor Learning Team, Center for Advanced Intelligence Project, RIKEN, Japan
2018/03–2021/05	POSTDOCTORAL RESEARCHER (SUPERVISED BY DR. QIBIN ZHAO) Tensor Learning Team, Center for Advanced Intelligence Project, RIKEN, Japan
2013/09–2015/08	RESEARCH ASSOCIATE (SUPERVISED BY PROF. ANDRZEJ CICHOCKI) Lab. for Advanced Brain Signal Processing, Brain Science Institute, RIKEN, Japan

## FUNDINGS

- 日本学術振興会科学研究費助成事業（基盤研究 (B)、題目：メディカルデータへの信頼性の高いテンソル・ネットワーク融合アプローチ、研究代表者、番号: 24K03005）プロジェクト（2024-2027）。
- AMED 脳神経科学統合プログラム (Brain/MINDS 2.0, 個別重点研究課題, 題目：脳の構造と活動データに基づくデジタル脳の機能化と脳アーキテクチャを考慮した深層学習モデルの構築, 研究開発分担者) プロジェクト (2024-2026)。
- 理化学研究所奨励課題事業（SDGs 枠 [10/52]、題目：量子にインスパイアされた機械学習の強化：マルチ代数テンソルネットワークを用いた新しいパラダイム、研究代表者）(2024-2025)。
- 日本学術振興会科学研究費助成事業（若手研究、題目：クロネッカーグラフ下での構造化テンソル近似及び水文データへの応用、研究代表者、番号: 20K19875）プロジェクト（2020-2022）。
- 理化学研究所コラボレーションシードファンド（2019-2020、共同研究者、最優秀ポスター賞、題目：マウスの脳ネットワークダイナミクスに基づく行動表現の予測）。

## AWARDS

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1. 理化学研究所 · 桜舞賞 (2019).
2. The paper “*Randomized Tensor Ring Decomposition and Its Application to Large-scale Data Reconstruction.*” achieves the student best paper award in ICASSP 2019.
3. The paper “*Yet another Schatten norm for tensor recovery*” achieves the student best paper award in ICONIP 2016.

## SELECTED PUBLICATIONS<sup>1</sup>

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Junhua Zeng\*, Chao Li\*, Zhun Sun, Qibin Zhao Guoxu Zhou (\*Equal contribution). tnGPS: Discovering Unknown Tensor Network Structure Search Algorithms via Large Language Models (LLMs). *International Conference on Machine Learning (ICML)*, 2024

Yu-Bang Zheng, Xi-Le Zhao, Junhua Zeng, Chao Li, Qibin Zhao, Heng-Chao Li, Ting-Zhu Huang. SVDin-sTN: An Integrated Method for Tensor Network Representation with Efficient Structure Search. *IEEE Computer Vision and Pattern Recognition (CVPR, highlight)*, 2024

Guang Lin, Chao Li, Jianhai Zhang, Toshihisa Tanaka, Qibin Zhao. Adversarial Training on Purification (AToP): Advancing Both Robustness and Generalization. *International Conference on Learning Representations (ICLR, accepted)*, 2024

Andong Wang, Chao Li, Mingyuan Bai, Zhong Jin, Guoxu Zhou, Qibin Zhao. Transformed Low-Rank Parameterization Can Help Robust Generalization for Tensor Neural Networks. *Conference on Neural Information Processing (NeurIPS)*, 2023

Chao Li, Junhua Zeng, Chunmei Li, Cesar Caiafa, Qibin Zhao. Alternating Local Enumeration (TnALE): Solving Tensor Network Structure Search with Fewer Evaluations. *International Conference on Machine Learning (ICML)*, 2023

Chao Li\*, Junhua Zeng\*, Zerui Tao, Qibin Zhao (\*Equal contribution). Permutation Search of Tensor Network Structures via Local Sampling. *International Conference on Machine Learning (ICML)*, 2022

Hejia Qiu\*, Chao Li\*, Ying Weng, Zhun Sun, Xingyu He, Qibin Zhao (\*Equal contribution). On the Memory Mechanism of Tensor-Power Recurrent Models. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2021

Wei He, Quanming Yao, Chao Li, Naoto Yokoya, Qibin Zhao, Hongyan Zhang, Liangpei Zhang. Non-local Meets Global: An Integrated Paradigm for Hyperspectral Image Restoration. *IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)*, 2020.

Binghua Li\*, Chao Li\*, Feng Duan, Ning Zheng, Qibin Zhao (\*Equal contribution). TPFN: Apply Outer Product along Time for Multimodal Sentiment Analysis Fusion on Imperfect Data. *European Conference on Computer Vision (ECCV)*, 2020.

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<sup>1</sup>Find the full publication list from Google Scholar: <https://scholar.google.com/citations?user=i4JrumAAAAJ&hl>

Chao Li, Zhun Sun. Evolutionary Topology Search for Tensor Network Decomposition. *International Conference on Machine Learning (ICML)*, 2020.

Chao Li, Mohammad Emtiyaz Khan, Zhun Sun, Gang Niu, Bo Han, Qibin Zhao. Beyond Unfolding: Exact Recovery of Latent Convex Tensor Decomposition under Reshuffling. *AAAI Conference on Artificial Intelligence (AAAI)*, 2020.

Andong Wang, Chao Li, Zhong Jin, Qibin Zhao. Robust Tensor Decomposition via Orientation Invariant Tubal Nuclear Norms. *AAAI Conference on Artificial Intelligence (AAAI, oral)*, 2020.

Chao Li, Wei He, Longhao Yuan, Zhun Sun, Qibin Zhao. Guaranteed Matrix Completion under Multiple Linear Transformations. *IEEE Computer Vision and Pattern Recognition (CVPR, oral)*, 2019.

Longhao Yuan, Chao Li, Danilo P. Mandic, Qibin Zhao. Tensor Ring Decomposition with Rank Minimization on Latent Space: An Efficient Approach for Tensor Completion. *AAAI Conference on Artificial Intelligence (AAAI)*, 2019.