

# List of Publications

Tensor Learning Team, RIKEN AIP

<https://qibinzhao.github.io>

## Conference Papers

- 2022 [1] M. Bai, J. Chen, Q. Zhao, C. Li, J. Zhang, and J. Gao. 2022, “Tensor neural controlled differential equations,” in *2022 International Joint Conference on Neural Networks (IJCNN)*, IEEE, pp. 1–9.
- [2] H. Huang, Y. Luo, G. Zhou, and Q. Zhao. 2022, “Multi-view data representation via deep autoencoder-like nonnegative matrix factorization,” in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 3338–3342.
- [3] R. J. Kobler, J.-i. Hirayama, Q. Zhao, and M. Kawanabe. 2022, “Spd domain-specific batch normalization to crack interpretable unsupervised domain adaptation in eeg,” in *NeurIPS 2022*.
- [4] K. Konstantinidis, Y. L. Xu, Q. Zhao, and D. P. Mandic. 2022, “Variational Bayesian tensor networks with structured posteriors,” in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 3638–3642.
- [5] C. Li, J. Zeng, Z. Tao, and Q. Zhao. 2022, “Permutation search of tensor network structures via local sampling,” in *International Conference on Machine Learning (ICML)*, PMLR, pp. 13 106–13 124.
- [6] Y. Li, Z. Sun, and C. Li. 2022, “Are we pruning the correct channels in image-to-image translation models,” in *The 33rd British Machine Vision Conference (BMVC) Proceedings*.
- [7] S. Mo, Z. Sun, and C. Li. 2022, “Rethinking prototypical contrastive learning through alignment, uniformity and correlation,” in *The 33rd British Machine Vision Conference (BMVC) Proceedings*.
- [8] H. Takayama and T. Yokota. 2022, “Fast signal completion algorithm with cyclic convolutional smoothing,” in *2022 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, IEEE, pp. 364–371.
- [9] J. Tang, K. Li, M. Hou, X. Jin, W. Kong, Y. Ding, and Q. Zhao. 2022, “Mmt: Multi-way multi-modal transformer for multimodal learning,” in *IJCAI*.
- [10] R. Yamamoto, H. Hontani, A. Imakura, and T. Yokota. 2022, “Consistent mdt-tucker: A hankel structure constrained tucker decomposition in delay embedded space,” in *2022 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, IEEE, pp. 137–142.
- [11] R. Yamamoto, H. Hontani, A. Imakura, and T. Yokota. 2022, “Fast algorithm for low-rank tensor completion in delay-embedded space,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 2058–2066.

## Journal Papers

- 2022 [12] X. Chen, G. Zhou, Y. Wang, M. Hou, Q. Zhao, and S. Xie. 2022, "Accommodating multiple tasks' disparities with distributed knowledge-sharing mechanism," *IEEE Transactions on Cybernetics*, vol. 52, no. 4, pp. 2440–2452,
- [13] W. He, Y. Chen, N. Yokoya, C. Li, and Q. Zhao. 2022, "Hyperspectral super-resolution via coupled tensor ring factorization," *Pattern Recognition*, vol. 122, p. 108 280,
- [14] W. He, Q. Yao, C. Li, N. Yokoya, Q. Zhao, H. Zhang, and L. Zhang. 2022, "Non-local meets global: An iterative paradigm for hyperspectral image restoration," *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 44, no. 4, pp. 2089–2107,
- [15] H. Huang, G. Zhou, N. Liang, Q. Zhao, and S. Xie. 2022, "Diverse deep matrix factorization with hypergraph regularization for multiview data representation," *IEEE/CAA Journal of Automatica Sinica*,
- [16] T. Li, G. Zhou, Y. Qiu, and Q. Zhao. 2022, "Understanding convolutional neural networks from theoretical perspective via volterra convolution," *Journal of Machine Learning Research (JMLR)*,
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- [20] Y.-C. Miao, X.-L. Zhao, X. Fu, J.-L. Wang, and Y.-B. Zheng. 2022, "Hyperspectral denoising using unsupervised disentangled spatio-spectral deep priors," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 60, pp. 1–16,
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- [22] Y. Qiu, G. Zhou, J. Zeng, Q. Zhao, and S. Xie. 2022, "Imbalanced low-rank tensor completion via latent matrix factorization," *Neural Networks*,
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- [24] K. Takahashi, Z. Sun, J. Solé-Casals, A. Cichocki, A. H. Phan, Q. Zhao, H.-H. Zhao, S. Deng, and R. Micheletto. 2022, "Data augmentation for convolutional LSTM based brain computer interface system," *Applied Soft Computing*, p. 108 811,
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- [26] J. Tang, D. Liu, X. Jin, Y. Peng, Q. Zhao, Y. Ding, and W. Kong. 2022, "Bafn: Bi-direction attention based fusion network for multimodal sentiment analysis," *IEEE Transactions on Circuits and Systems for Video Technology*,
- [27] A. Wang, Q. Zhao, Z. Jin, C. Li, and G. Zhou. 2022, "Robust tensor decomposition via orientation invariant tubal nuclear norms," *Science China Technological Sciences*, pp. 1–18,
- [28] T. Yokota, H. Hontani, Q. Zhao, and A. Cichocki. 2022, "Manifold modeling in embedded space: An interpretable alternative to deep image prior," *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, vol. 33, no. 3, pp. 1022–1036,
- [29] Y. Yu, G. Zhou, H. Huang, S. Xie, and Q. Zhao. 2022, "A semi-supervised label-driven auto-weighted strategy for multi-view data classification," *Knowledge-Based Systems*, p. 109 694,
- [30] Y. Yu, G. Zhou, N. Zheng, Y. Qiu, S. Xie, and Q. Zhao. 2022, "Graph-regularized non-negative tensor-ring decomposition for multiway representation learning," *IEEE Transactions on Cybernetics*,
- [31] D. Zhang, Y. Luo, Y. Yu, Q. Zhao, and G. Zhou. 2022, "Semi-supervised multi-view clustering with dual hypergraph regularized partially shared non-negative matrix factorization," *SCIENCE CHINA: Technological Sciences*,
- [32] X. Zhao, Y. Yu, G. Zhou, Q. Zhao, and W. Sun. 2022, "Fast hypergraph regularized non-negative tensor ring decomposition based on low-rank approximation," *Applied Intelligence*, pp. 1–24,
- [33] X. Zhao, Q. Zhao, T. Tanaka, J. Solé-Casals, G. Zhou, T. Mitsuhashi, H. Sugano, N. Yoshida, and J. Cao. 2022, "Classification of the epileptic seizure onset zone based on partial annotation," *Cognitive Neurodynamics*,
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- [35] Y. Zheng, T. Huang, X. Zhao, and Q. Zhao. 2022, "Tensor completion via fully-connected tensor network decomposition with regularized factors," *Journal of Scientific Computing*, vol. 92, no. 8, pp. 1–35,

## Book Chapter

- 2022 [36] T. Yokota, C. F. Caiafa, and Q. Zhao. 2022, "Tensor methods for low-level vision," in *Tensors for Data Processing*. Elsevier, pp. 371–425.

## Book

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## Conference Papers

- 2021**
- [1] M. Bai, Q. Zhao, and J. Gao. 2021, “Tensorial time series prediction via tensor neural ordinary differential equations,” in *2021 International Joint Conference on Neural Networks (IJCNN)*, IEEE, pp. 1–8.
  - [2] C. F. Caiafa, Z. Wang, J. Sole-Casals, and Q. Zhao. 2021, “Learning from incomplete features by simultaneous training of neural networks and sparse coding,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, pp. 2621–2630.
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  - [6] J. Zhang, Z. Tao, L. Zhang, and Q. Zhao. 2021, “Tensor decomposition via core tensor networks,” in *ICASSP 2021-2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 2130–2134.
  - [7] Y.-B. Zheng, T.-Z. Huang, X.-L. Zhao, Q. Zhao, and T.-X. Jiang. 2021, “Fully-connected tensor network decomposition and its application to higher-order tensor completion,” in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI’21)*, vol. 35, pp. 11 071–11 078.
- 2020**
- [8] B. Li, C. Li, F. Duan, N. Zheng, and Q. Zhao. 2020, “Tpfn: Applying outer product along time to multimodal sentiment analysis fusion on incomplete data,” in *The 2020 European Conference on Computer Vision (ECCV-20)*.
  - [9] C. Li, M. E. Khan, Z. Sun, G. Niu, B. Han, S. Xie, and Q. Zhao. 2020, “Beyond unfolding: Exact recovery of latent convex tensor decomposition under reshuffling,” in *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*, pp. 4602–4609.
  - [10] C. Li and Z. Sun. 2020, “Evolutionary topology search for tensor network decomposition,” in *International Conference on Machine Learning (ICML)*, PMLR, pp. 5947–5957.
  - [11] Q. Shi, J. Yin, J. Cai, A. Cichocki, T. Yokota, L. Chen, M. Yuan, and J. Zeng. 2020, “Block hankel tensor arima for multiple short time series forecasting,” in *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*, pp. 5758–5766.

- [12] A. Wang, C. Li, Z. Jin, and Q. Zhao. 2020, "Robust tensor decomposition via orientation invariant tubal nuclear norms," in *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*, pp. 6102–6109.
- [13] X. Zhao, J. Solé-Casals, B. Li, Z. Huang, A. Wang, J. Cao, T. Tanaka, and Q. Zhao. 2020, "Classification of epileptic iEEG signals by CNN and data augmentation," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 926–930.
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- 2019 [15] F. Aminmansour, A. Patterson, L. Le, Y. Peng, D. Mitchell, F. Pestilli, C. Caiafa, R. Greiner, and M. White. 2019, "Learning macroscopic brain connectomes via group-sparse factorization," in *Advances in Neural Information Processing Systems 32 (NIPS 2019)*, pp. 8847–8857.
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- 2017 [44] G. Cui, L. Zhu, Q. Zhao, J. Cao, and A. Cichocki. 2017, "A graph theory analysis on distinguishing EEG-based brain death and coma," in *International Conference on Neural Information Processing (ICONIP)*, ser. Lecture Notes in Computer Science, Springer, vol. 10637, pp. 589–595.
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## Journal Papers

- 2022 [49] W. He, Y. Chen, N. Yokoya, C. Li, and Q. Zhao. 2022, "Hyperspectral super-resolution via coupled tensor ring factorization," *Pattern Recognition*, vol. 122, p. 108 280,
- 2021 [50] Z. Chen, G. Zhou, and Q. Zhao. 2021, "Hierarchical factorization strategy for high-order tensor and application for data completion," *IEEE Signal Processing Letters*,

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- [56] X. Chen, G. Zhou, Y. Wang, M. Hou, Q. Zhao, and S. Xie. 2020, "Accommodating multiple tasks' disparities with distributed knowledge-sharing mechanism," *IEEE Transactions on Cybernetics*,
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