

List of Publications

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Conference Papers

- 2023** [1] J. Zhang, Y. Hong, and Q. Zhao. 2023, “Memorization weights for instance reweighting in adversarial training,” in *AAAI 2023*.
- 2022** [2] 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.
- [3] Y. Hong, L. Niu, and J. Zhang. 2022, “Shadow generation for composite image in real-world scenes,” in *Thirty-Sixth AAAI Conference on Artificial Intelligence, AAAI 2022*, pp. 914–922.
- [4] 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.
- [5] 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*.
- [6] 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.
- [7] 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.
- [8] 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*.
- [9] 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*.
- [10] 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.
- [11] 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*.
- [12] W. Wang, L. Niu, J. Zhang, X. Yang, and L. Zhang. 2022, “Dual-path image inpainting with auxiliary GAN inversion,” in *IEEE/CVF Conference on Computer Vision and Pattern Recognition CVPR 2022*, pp. 11 411–11 420.

- [13] 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 (AP-SIPA ASC)*, IEEE, pp. 137–142.
- [14] 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.
- 2021 [15] 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.
- [16] 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.
- [17] Z. Huang, Y. Qiu, Q. Zhao, and G. Zhou. 2021, "Bayesian robust Tucker decomposition for multiway data analysis," in *2021 China Automation Congress (CAC)*, IEEE, pp. 5559–5564.
- [18] Z. Huang, C. Li, F. Duan, and Q. Zhao. 2021, "Multi-distorted image restoration with tensor 1 × 1 convolutional layer," in *2021 International Joint Conference on Neural Networks (IJCNN)*, IEEE, pp. 1–8.
- [19] Q. Jiang, Y. Yu, Q. Zhao, and W. Sun. 2021, "Semi-supervised robust dual-graph concept factorization via $L_{2,1}$ norm," in *2021 Chinese Automation Congress (CAC)*.
- [20] H. Qiu, C. Li, Y. Weng, Z. Sun, X. He, and Q. Zhao. 2021, "On the memory mechanism of tensor-power recurrent models," in *International Conference on Artificial Intelligence and Statistics (AISTATS'21)*, PMLR, pp. 3682–3690.
- [21] Z. Sun, C. Li, and Q. Zhao. 2021, "Hide chopin in the music: Efficient information steganography via random shuffling," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 2370–2374.
- [22] J. Tang, K. Li, X. Jin, A. Cichocki, Q. Zhao, and W. Kong. 2021, "CTFN: Hierarchical learning for multimodal sentiment analysis using coupled-translation fusion network," in *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, pp. 5301–5311.
- [23] Z. Tao, X. Zhao, T. Tanaka, and Q. Zhao. 2021, "Bayesian latent factor model for higher-order data," in *Proceedings of The 13th Asian Conference on Machine Learning (ACML)*, ser. Proceedings of Machine Learning Research, vol. 157, PMLR, pp. 1285–1300.
- [24] W. Wang, J. Zhang, L. Niu, H. Ling, X. Yang, and L. Zhang. 2021, "Parallel multi-resolution fusion network for image inpainting," in *IEEE/CVF International Conference on Computer Vision, ICCV 2021*, IEEE, pp. 14 539–14 548.

- [25] 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.
- [26] X. Zhao, J. Solé-Casals, Q. Zhao, J. Cao, and T. Tanaka. 2021, "Multi-feature fusion for epileptic focus localization based on tensor representation," in *2021 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, IEEE, pp. 1323–1327.
- [27] X. Zhao, S. Takata, K. Fukumori, and T. Tanaka. 2021, "Infant posture assessment based on rotational keypoint detection," in *2021 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, IEEE, pp. 1546–1550.
- [28] 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 [29] 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)*.
- [30] 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.
- [31] C. Li and Z. Sun. 2020, "Evolutionary topology search for tensor network decomposition," in *International Conference on Machine Learning (ICML)*, PMLR, pp. 5947–5957.
- [32] 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.
- [33] 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.
- [34] 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.
- [35] X. Zhao, L. Sui, T. Tanaka, J. Cao, and Q. Zhao. 2020, "Epileptic focus localization based on iEEG plot images by using convolutional neural network," in *Proceedings of the 12th International Conference on Bioinformatics and Computational Biology*, vol. 70, pp. 173–181.
- 2019 [36] 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 (NeurIPS 2019)*, pp. 8847–8857.

- [37] Q. Chen, L. Yuan, Y. Miao, Q. Zhao, T. Tanaka, and J. Cao. 2019, "Quasi-brain-death eeg diagnosis based on tensor train decomposition," in *International Symposium on Neural Networks (ISNN)*, Springer, pp. 501–511.
- [38] W. He, Q. Yao, C. Li, N. Yokoya, and Q. Zhao. 2019, "Non-local meets global: An integrated paradigm for hyperspectral denoising," in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 6868–6877.
- [39] W. He, L. Yuan, and N. Yokoya. 2019, "Total-variation-regularized tensor ring completion for remote sensing image reconstruction," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 8603–8607.
- [40] M. Hou, J. Tang, J. Zhang, W. Kong, and Q. Zhao. 2019, "Deep multimodal multilinear fusion with high-order polynomial pooling," in *Advances in Neural Information Processing Systems 32 (NeurIPS 2019)*, pp. 12 113–12 122.
- [41] B. Li, X. Zhao, Q. Zhao, T. Tanaka, and J. Cao. 2019, "A one-dimensional convolutional neural network model for automated localization of epileptic foci," in *2019 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, IEEE, pp. 741–744.
- [42] C. Li, W. He, L. Yuan, Z. Sun, and Q. Zhao. 2019, "Guaranteed matrix completion under multiple linear transformations," in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 11 136–11 145.
- [43] C. Li, Z. Sun, J. Yu, M. Hou, and Q. Zhao. 2019, "Low-rank embedding of kernels in convolutional neural networks under random shuffling," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 3022–3026.
- [44] P. P. Liang, Z. Liu, Y.-H. H. Tsai, Q. Zhao, R. Salakhutdinov, and L.-P. Morency. 2019, "Learning representations from imperfect time series data via tensor rank regularization," in *Proceedings of the Annual Meeting of the Association for Computational Linguistics (ACL)*, pp. 1569–1576.
- [45] L. Sui, X. Zhao, Q. Zhao, T. Tanaka, and J. Cao. 2019, "Localization of epileptic foci by using convolutional neural network based on ieeg," in *Artificial Intelligence Applications and Innovations (AIAI)*, Springer International Publishing, pp. 331–339.
- [46] A. Wang, X. Song, X. Wu, Z. Lai, and Z. Jin. 2019, "Generalized dantzig selector for low-tubal-rank tensor recovery," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 3427–3431.
- [47] A. Wang, X. Song, X. Wu, Z. Lai, and Z. Jin. 2019, "Latent Schatten TT norm for tensor completion," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 2922–2926.
- [48] A. Wang, X. Song, X. Wu, Z. Lai, and Z. Jin. 2019, "Robust low-tubal-rank tensor completion," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 3432–3436.

- [49] T. Yokota, K. Kawai, M. Sakata, Y. Kimura, and H. Hontani. 2019, "Dynamic pet image reconstruction using nonnegative matrix factorization incorporated with deep image prior," in *The IEEE International Conference on Computer Vision (ICCV)*, pp. 3126–3135.
- [50] J. Yu, C. Li, Q. Zhao, and G. Zhao. 2019, "Tensor-ring nuclear norm minimization and application for visual : Data completion," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 3142–3146. DOI: 10.1109/ICASSP.2019.8683115.
- [51] L. Yuan, C. Li, J. Cao, and Q. Zhao. 2019, "Randomized tensor ring decomposition and its application to large-scale data reconstruction," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 2127–2131.
- [52] L. Yuan, C. Li, D. Mandic, J. Cao, and Q. Zhao. 2019, "Tensor ring decomposition with rank minimization on latent space: An efficient approach for tensor completion," in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, vol. 33, pp. 9151–9158.
- [53] Q. Zhao, M. Sugiyama, L. Yuan, and A. Cichocki. 2019, "Learning efficient tensor representations with ring-structured networks," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 8608–8612.
- 2018 [54] X. Cao, X. Zhao, and Q. Zhao. 2018, "Tensorizing generative adversarial nets," in *The Third International Conference On Consumer Electronics (ICCE) Asia*, pp. 206–212.
- [55] M. Hou, B. Chaib-draa, C. Li, and Q. Zhao. 2018, "Generative adversarial positive-unlabeled learning," in *Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI-18)*, pp. 2255–2261.
- [56] X. Kong, W. Kong, Q. Fan, Q. Zhao, and A. Cichocki. 2018, "Task-independent EEG identification via low-rank matrix decomposition," in *The IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, pp. 412–419.
- [57] T. M. Rutkowski, Q. Zhao, M. S. Abe, and M. Otake. 2018, "AI neurotechnology for aging societies—task-load and dementia EEG digital biomarker development using information geometry machine learning methods," in *NeurIPS Workshop*.
- [58] J. Yu, G. Zhou, Q. Zhao, and K. Xie. 2018, "An effective tensor completion method based on multi-linear tensor ring decomposition," in *APSIPA-ASC 2018*, pp. 1244–1349.
- [59] L. Yuan, J. Cao, X. Zhao, Q. Wu, and Q. Zhao. 2018, "Higher-dimension tensor completion via low-rank tensor ring decomposition," in *APSIPA-ASC 2018*, pp. 1071–1076.
- [60] L. Yuan, Q. Zhao, and J. Cao. 2018, "High-order tensor completion for data recovery via sparse tensor-train optimization," in *2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, pp. 1258–1262.
- [61] Q. Zhao, M. Sugiyama, L. Yuan, and A. Cichocki. 2018, "Learning efficient tensor representations with ring structure networks," in *Sixth International Conference on Learning Representations (ICLR Workshop)*.
- [62] X. Zhao, T. Tanaka, W. Kong, Q. Zhao, J. Cao, H. Sugano, and N. Yoshida. 2018, "Epileptic focus localization based on iEEG by using positive unlabeled (PU) learning," in *APSIPA-ASC 2018*, pp. 493–497.

- [63] X. Zhao, Q. Zhao, T. Tanaka, J. Cao, W. Kong, H. Sugano, and N. Yoshida. 2018, "Detection of epileptic foci based on interictal iEEG by using convolutional neural network," in *The 23rd International Conference on Digital Signal Processing (DSP)*.
- [64] X. Zhao, G. Cui, L. Yuan, T. Tanaka, Q. Zhao, and J. Cao. 2018, "A hybrid brain computer interface based on audiovisual stimuli p300," in *The Third International Conference On Consumer Electronics (ICCE) Asia*, pp. 206–212.

Journal Papers

- 2023 [65] J. Tang, M. Hou, X. Jin, J. Zhang, Q. Zhao, and W. Kong. 2023, "Tree-based mix-order polynomial fusion network for multimodal sentiment analysis," *Systems*, vol. 11, no. 1, p. 44,
- 2022 [66] 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,
- [67] 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. 108280,
- [68] 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,
- [69] 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*,
- [70] T. Li, G. Zhou, Y. Qiu, and Q. Zhao. 2022, "Toward understanding convolutional neural networks from volterra convolution perspective," *Journal of Machine Learning Research (JMLR)*, vol. 23, no. 311, pp. 1–50,
- [71] S. Liu, J. Zhang, A. Wang, H. Wu, Q. Zhao, and J. Long. 2022, "Subject adaptation convolutional neural network for eeg-based motor imagery classification," *Journal of Neural Engineering*,
- [72] Y.-S. Luo, X.-L. Zhao, T.-X. Jiang, Y. Chang, M. K. Ng, and C. Li. 2022, "Self-supervised nonlinear transform-based tensor nuclear norm for multi-dimensional image recovery," *IEEE Transactions on Image Processing*,
- [73] Y. Luo, A. Wang, G. Zhou, and Q. Zhao. 2022, "A hybrid norm for guaranteed tensor recovery," *Frontiers in Physics*, p. 447,
- [74] 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,
- [75] Y. Qiu, G. Zhou, Z. Huang, Q. Zhao, and S. Xie. 2022, "Efficient tensor robust PCA under hybrid model of tucker and tensor train," *IEEE Signal Processing Letters*, vol. 29, pp. 627–631,

- [76] Y. Qiu, G. Zhou, J. Zeng, Q. Zhao, and S. Xie. 2022, "Imbalanced low-rank tensor completion via latent matrix factorization," *Neural Networks*,
- [77] Y. Qiu, G. Zhou, Q. Zhao, and S. Xie. 2022, "Noisy tensor completion via low-rank tensor ring," *IEEE Transactions on Neural Networks and Learning Systems*, pp. 1–15, DOI: 10.1109/TNNLS.2022.3181378.
- [78] 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. 108811,
- [79] H. Takayama, Q. Zhao, H. Hontani, and T. Yokota. 2022, "Bayesian tensor completion and decomposition with automatic cp rank determination using mgp shrinkage prior," *SN Computer Science*, vol. 3, no. 3, pp. 1–17,
- [80] 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*,
- [81] 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,
- [82] 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,
- [83] 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. 109694,
- [84] 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*,
- [85] 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*,
- [86] 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,
- [87] 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*,
- [88] W.-J. Zheng, X.-L. Zhao, Y.-B. Zheng, and Z.-F. Pang. 2022, "Nonlocal patch-based fully connected tensor network decomposition for multispectral image inpainting," *IEEE Geoscience and Remote Sensing Letters*, vol. 19, pp. 1–5,
- [89] 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,

- 2021 [90] Z. Chen, G. Zhou, and Q. Zhao. 2021, "Hierarchical factorization strategy for high-order tensor and application for data completion," *IEEE Signal Processing Letters*, vol. 28, pp. 1255–1259,
- [91] X. Jin, J. Tang, X. Kong, Y. Peng, J. Cao, Q. Zhao, and W. Kong. 2021, "CTNN: A convolutional tensor-train neural network for multi-task brainprint recognition," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 29, pp. 103–112,
- [92] B. Li, Z. Zhang, F. Duan, Z. Yang, Q. Zhao, Z. Sun, and J. Solé-Casals. 2021, "Component-mixing strategy: A decomposition-based data augmentation algorithm for motor imagery signals," *Neurocomputing*, vol. 465, pp. 325–335,
- [93] Y. Qiu, G. Zhou, X. Chen, D. Zhang, X. Zhao, and Q. Zhao. 2021, "Semi-supervised non-negative tucker decomposition for tensor data representation," *Science China Technological Sciences*, vol. 64, no. 9, pp. 1881–1892,
- [94] L. Sui, X. Zhao, Q. Zhao, T. Tanaka, and J. Cao. 2021, "Hybrid convolutional neural network for localization of epileptic focus based on iEEG," *Neural Plasticity*, vol. 2021,
- [95] A. Wang, G. Zhou, Z. Jin, and Q. Zhao. 2021, "Tensor recovery via $*_l$ -spectral k -support norm," *IEEE Journal of Selected Topics in Signal Processing*, vol. 15, no. 3, pp. 522–534, DOI: 10.1109/JSTSP.2021.3058763.
- [96] A. Wang, G. Zhou, and Q. Zhao. 2021, "Guaranteed robust tensor completion via L-SVD with applications to remote sensing data," *Remote Sensing*, vol. 13, no. 18, p. 3671,
- [97] J. Yu, G. Zhou, C. Li, Q. Zhao, and S. Xie. 2021, "Low tensor-ring rank completion by parallel matrix factorization," *IEEE transactions on neural networks and learning systems (TNNLS)*, vol. 32, no. 7, pp. 3020–3033,
- 2020 [98] C. Caiafa, J. Solé-Casals, P. Marti-Puig, S. Zhe, and T. Tanaka. 2020, "Decomposition methods for machine learning with small, incomplete or noisy datasets," *Applied Sciences*, vol. 10, no. 23, p. 8481,
- [99] G. Cui, L. Zhu, L. Gui, Q. Zhao, J. Zhang, and J. Cao. 2020, "Multidimensional clinical data denoising via Bayesian CP factorization," *Science China Technological Sciences*, vol. 63, no. 2, pp. 249–254,
- [100] F. Duan, Z. Huang, Z. Sun, Y. Zhang, Q. Zhao, A. Cichocki, Z. Yang, and J. Solé-Casals. 2020, "Topological network analysis of early alzheimer's disease based on resting-state eeg," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 28, no. 10, pp. 2164–2172,
- [101] R. Li, Q. Wu, J. Liu, Q. Wu, C. Li, and Q. Zhao. 2020, "Monitoring depth of anesthesia based on hybrid features and recurrent neural network," *Frontiers in neuroscience*, vol. 14, p. 26,
- [102] Z. Sun, B. Li, F. Duan, H. Jia, S. Wang, Y. Liu, A. Cichocki, C. F. Caiafa, and J. Sole-Casals. 2020, "Wlnet: Towards an approach for robust workload estimation based on shallow neural networks," *IEEE Access*, vol. 9, pp. 3165–3173,

- 2019** [103] S. Al-Baddai, P. Marti-Puig, E. Gallego-Jutglà, K. Al-Subari, A. M. Tomé, B. Ludwig, E. W. Lang, and J. Solé-Casals. 2019, "A recognition–verification system for noisy faces based on an empirical mode decomposition with green's functions," *Soft Computing*, pp. 1–19,
- [104] W. He, N. Yokoya, L. Yuan, and Q. Zhao. 2019, "Remote sensing image reconstruction using tensor ring completion and total variation," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 57, no. 11, pp. 8998–9009,
- [105] M. Iwata, L. Yuan, Q. Zhao, Y. Tabei, F. Berenger, R. Sawada, S. Akiyoshi, M. Hamano, and Y. Yamanishi. 2019, "Predicting drug-induced transcriptome responses of a wide range of human cell lines by a novel tensor-train decomposition algorithm," *Bioinformatics*, vol. 35, no. 14, pp. i191–i199,
- [106] W. Kong, X. Kong, Q. Fan, Q. Zhao, and A. Cichocki. 2019, "Task-free brainprint recognition based on low-rank and sparse decomposition model," *International Journal of Data Mining and Bioinformatics (IJDMB)*, vol. 22, no. 3, pp. 280–300,
- [107] Q. Shi, Y. Cheung, Q. Zhao, and H. Lu. 2019, "Feature extraction for incomplete data via low-rank tensor decomposition with feature regularization," *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, vol. 30, no. 6, pp. 1803 –1817,
- [108] L. A. Suad, C. F. Caiafa, S. Cichowolski, and E. M. Arnal. 2019, "Galactic hi supershells: Kinetic energies and possible origin," *Astronomy and Astrophysics*, vol. 624, no. A&A, pp. 1–11,
- [109] L. Sui, X. Zhao, J. Cao, and Q. Zhao. 2019, "Localization of epileptic foci from ieeg via mixed convolutional neural network," *International Journal of Latest Trends in Engineering and Technology*, vol. 14, no. 4, pp. 8–13,
- [110] L. Yuan, J. Cao, and Q. Zhao. 2019, "Tensor ring decomposition for visual data denoising via tensor random projection," *International Journal of Latest Trends in Engineering and Technology*, vol. 13, no. 2, pp. 102–107,
- [111] L. Yuan, C. Li, J. Cao, and Q. Zhao. 2019, "Rank minimization on tensor ring: An efficient approach for tensor decomposition and completion," *Machine Learning*, pp. 1–20,
- [112] L. Yuan, Q. Zhao, L. Gui, and J. Cao. 2019, "High-order tensor completion via gradient-based optimization under tensor train format," *Signal Processing: Image Communication*, vol. 73, pp. 53–61,
- [113] X. Zhao, L. Gui, J. Cao, and Q. Zhao. 2019, "Epileptic focus localization based on entropy and convolutional neural network," *International Journal of Latest Trends in Engineering and Technology*, vol. 14, no. 4, pp. 14–17,
- [114] L. Zhu, G. Cui, J. Cao, A. Cichocki, J. Zhang, and C. Zhou. 2019, "A hybrid system for distinguishing between brain death and coma using diverse eeg features," *Sensors*, vol. 19, no. 6, p. 1342,
- 2018** [115] L. Gui, X. Zhao, Q. Zhao, and J. Cao. 2018, "Image and video completion by using Bayesian tensor decomposition," *International Journal of Computer Science Issues (IJCSI)*, vol. 15, no. 5, pp. 1–8,

- [116] L. Gui, X. Zhao, Q. Zhao, and J. Cao. 2018, "Non-local image denoising by using Bayesian low-rank tensor factorization on high-order patches," *International Journal of Computer Science Issues (IJCSI)*, vol. 15, no. 5, pp. 16–25,
- [117] W. Kong, L. Wang, J. Zhang, Q. Zhao, and J. Sun. 2018, "The dynamic EEG microstates in mental rotation," *Sensors*, vol. 18, no. 9, p. 2920,
- [118] Y. Kumagai, R. Matsui, and T. Tanaka. 2018, "Music familiarity affects EEG entrainment when little attention is paid," *Frontiers in Human Neuroscience*, vol. 12, p. 444,
- [119] J. Lin, W. Chen, C. Shen, M. Chiu, Y. Kao, F. Lai, Q. Zhao, and A. Cichocki. 2018, "Visualization and sonification of long-term epilepsy electroencephalogram monitoring," *Journal of Medical and Biological Engineering*, vol. 38, no. 6, 943–952,
- [120] Y. Qiu, G. Zhou, Q. Zhao, and A. Cichocki. 2018, "Comparative study on the classification methods for breast cancer diagnosis," *Bulletin of the Polish Academy of Sciences. Technical Sciences*, vol. 66, no. 6, pp. 841–848,
- [121] J. Solé-Casals, C. F. Caiafa, Q. Zhao, and A. Cichocki. 2018, "Brain-computer interface with corrupted EEG data: A tensor completion approach," *Cognitive Computation*, vol. 10, no. 6, 1062–1074,
- [122] Y. Zhang, D. Guo, and F. Li, *et al.* 2018, "Correction to "correlated component analysis for enhancing the performance of SSVEP-based brain-computer interface"," *IEEE Transactions on Neural Systems and Rehabilitation Engineering (TNSRE)*, vol. 26, no. 8, pp. 1645–1646,
- [123] Y. Zhang, E. Yin, F. Li, Y. Zhang, T. Tanaka, Q. Zhao, Y. Cui, P. Xu, D. Yao, and D. Guo. 2018, "Two-stage frequency recognition method based on correlated component analysis for SSVEP-based BCI," *IEEE Transactions on Neural Systems and Rehabilitation Engineering (TNSRE)*, vol. 26, no. 7, pp. 1314–1323,
- [124] Y. Zhang, D. Guo, F. Li, E. Yin, Y. Zhang, P. Li, Q. Zhao, T. Tanaka, D. Yao, and P. Xu. 2018, "Correlated component analysis for enhancing the performance of SSVEP-based brain-computer interface.," *IEEE Transactions on Neural Systems and Rehabilitation Engineering (TNSRE)*, vol. 26, no. 5, pp. 948–956,

Book Chapter

- 2022 [125] 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