Dr. Lei Zhang

Website: leizhangnjnu.github.io Email: leizhang@njnu.edu.cn GitHub: github.com/leizhangnjnu

EDUCATION

Southeast University (SEU) Ph.D. in Instrumental science and technology	Nanjing, China 2007–2011
Shenyang Institute of Automation, Chinese Academy of Sciences (CAS) M.S. in Pattern Recognition and Intelligent Systems	Shenyang, China 2001–2004
Zhengzhou University (ZZU) B.S. in Computer Science	Zhengzhou, China 1997–2001

EMPLOYMENT

Nanjing Normal University (NNU) Associate Professor at School of Electrical Engineering and Automation	Nanjing, China 2014–current
Northumbria University (NU) Visiting Scholar at Department of Mechanical Engineering	Newcastle, UK 2016–2017
University of California, Los Angeles (UCLA) Research Fellow at Institute for Pure and Applied Mathematics	Los Angeles, USA 2008–2009
China Jiliang University (CJLU) Associate Professor at School of Information Engineering	Hangzhou, China 2004–2014

TEACHING

• Teacher at Nanjing Normal University	Autumn Semester
Data Structures and Algorithms (C language)	
• Teacher at Nanjing Normal University	Spring Semester

PUBLICATIONS

Digital Image Processing

- [1] H. Lian, J. Li, H. Wu, Y. Zhao, **Zhang, Lei***, and X. Wang, "Towards effective personalized service qos prediction from the perspective of multi-task learning", *IEEE Transactions on Network and Service Management*, 2023.
- [2] L. Xu, J. Zeng, W. Peng, H. Wu, K. Yue, H. Ding, **Zhang, Lei***, and X. Wang, "Modeling and predicting user preferences with multiple item attributes for sequential recommendations", *Knowledge-Based Systems*, vol. 260, p. 110174, 2023.
- [3] H. Chen, H. Wu, J. Li, X. Wang, and **Zhang, Lei**, "Keyword-driven service recommendation via deep reinforced steiner tree search", *IEEE Transactions on Industrial Informatics*, 2022.
- [4] X. Cheng, **Zhang**, **Lei***, Y. Tang, Y. Liu, H. Wu, and J. He, "Real-time human activity recognition using conditionally parametrized convolutions on mobile and wearable devices", *IEEE Sensors Journal*, vol. 22, no. 6, pp. 5889–5901, 2022.

- [5] C. Han, Zhang, Lei*, Y. Tang, W. Huang, F. Min, and J. He, "Human activity recognition using wearable sensors by heterogeneous convolutional neural networks", *Expert Systems with Applications*, vol. 198, p. 116764, 2022.
- [6] C. Han, Zhang, Lei*, Y. Tang, S. Xu, F. Min, H. Wu, and A. Song, "Understanding and improving channel attention for human activity recognition by temporal-aware and modality-aware embedding", IEEE Transactions on Instrumentation and Measurement, vol. 71, pp. 1–12, 2022.
- [7] W. Huang, **Zhang**, **Lei***, S. Wang, H. Wu, and A. Song, "Deep ensemble learning for human activity recognition using wearable sensors via filter activation", *ACM Transactions on Embedded Computing Systems*, vol. 22, no. 1, pp. 1–23, 2022.
- [8] W. Huang, **Zhang**, **Lei***, H. Wu, F. Min, and A. Song, "Channel-equalization-har: A light-weight convolutional neural network for wearable sensor based human activity recognition", *IEEE Transactions on Mobile Computing*, 2022.
- [9] Y. Tang, **Zhang**, **Lei***, F. Min, and J. He, "Multiscale deep feature learning for human activity recognition using wearable sensors", *IEEE Transactions on Industrial Electronics*, vol. 70, no. 2, pp. 2106–2116, 2022.
- [10] Y. Tang, Zhang, Lei*, H. Wu, J. He, and A. Song, "Dual-branch interactive networks on multichannel time series for human activity recognition", *IEEE Journal of Biomedical and Health Informatics*, vol. 26, no. 10, pp. 5223–5234, 2022.
- [11] S. Xu, Zhang, Lei*, W. Huang, H. Wu, and A. Song, "Deformable convolutional networks for multimodal human activity recognition using wearable sensors", *IEEE Transactions on Instrumentation and Measurement*, vol. 71, pp. 1–14, 2022.
- [12] W. Gao, **Zhang, Lei***, W. Huang, F. Min, J. He, and A. Song, "Deep neural networks for sensor-based human activity recognition using selective kernel convolution", *IEEE Transactions on Instrumentation and Measurement*, vol. 70, pp. 1–13, 2021.
- [13] W. Gao, Zhang, Lei*, Q. Teng, J. He, and H. Wu, "Danhar: Dual attention network for multimodal human activity recognition using wearable sensors", Applied Soft Computing, vol. 111, p. 107728, 2021.
- [14] W. Huang, **Zhang**, **Lei***, W. Gao, F. Min, and J. He, "Shallow convolutional neural networks for human activity recognition using wearable sensors", *IEEE Transactions on Instrumentation and Measurement*, vol. 70, pp. 1–11, 2021.
- [15] W. Huang, **Zhang**, **Lei***, Q. Teng, C. Song, and J. He, "The convolutional neural networks training with channel-selectivity for human activity recognition based on sensors", *IEEE Journal of Biomedical and Health Informatics*, vol. 25, no. 10, pp. 3834–3843, 2021.
- [16] T. Liu, S. Wang, Y. Liu, W. Quan, and **Zhang, Lei***, "A lightweight neural network framework using linear grouped convolution for human activity recognition on mobile devices", *The Journal of Supercomputing*, pp. 1–21, 2021.
- [17] Q. Teng, **Zhang**, **Lei***, Y. Tang, S. Song, X. Wang, and J. He, "Block-wise training residual networks on multi-channel time series for human activity recognition", *IEEE Sensors Journal*, 2021.
- [18] K. Wang, J. He, and **Zhang, Lei***, "Sequential weakly labeled multiactivity localization and recognition on wearable sensors using recurrent attention networks", *IEEE Transactions on Human-Machine Systems*, 2021.
- [19] X. Wang, Zhang, Lei*, W. Huang, S. Wang, H. Wu, J. He, and A. Song, "Deep convolutional networks with tunable speed-accuracy trade-off for human activity recognition using wearables", IEEE Transactions on Instrumentation and Measurement, 2021.
- [20] H. Wu, Y. Duan, K. Yue, and **Zhang**, **Lei**, "Mashup-oriented web api recommendation via multi-model fusion and multi-task learning", *IEEE Transactions on Services Computing*, 2021.

- [21] Y. Tang, Q. Teng, **Zhang**, **Lei***, F. Min, and J. He, "Layer-wise training convolutional neural networks with smaller filters for human activity recognition using wearable sensors", *IEEE Sensors Journal*, vol. 21, no. 1, pp. 581–592, 2020.
- [22] Q. Teng, K. Wang, **Zhang, Lei***, and J. He, "The layer-wise training convolutional neural networks using local loss for sensor-based human activity recognition", *IEEE Sensors Journal*, vol. 20, no. 13, pp. 7265–7274, 2020.
- [23] Q. Teng and **Zhang**, **Lei***, "Data driven nonlinear dynamical systems identification using multi-step cldnn", *AIP Advances*, vol. 9, no. 8, p. 085311, 2019.
- [24] K. Wang, J. He, and Zhang, Lei*, "Attention-based convolutional neural network for weakly labeled human activities' recognition with wearable sensors", IEEE Sensors Journal, vol. 19, no. 17, pp. 7598–7604, 2019.
- [25] **Zhang, Lei***, W. Zheng, F. Min, and A. Song, "Realizing reliable logic and memory function with noise-assisted schmitt trigger circuits", *Physics Letters A*, vol. 383, no. 7, pp. 617–621, 2019.
- [26] Zhang, Lei* and A. Song, "Realizing reliable logical stochastic resonance under colored noise by adding periodic force", *Physica A: Statistical Mechanics and its Applications*, vol. 503, pp. 958–968, 2018.
- [27] **Zhang, Lei***, W. Zheng, and A. Song, "Adaptive logical stochastic resonance in time-delayed synthetic genetic networks", *Chaos: An Interdisciplinary Journal of Nonlinear Science*, vol. 28, no. 4, p. 043 117, 2018.
- [28] Z. Wang, Z. Qiao, L. Zhou, and **Zhang**, **Lei**, "Array-enhanced logical stochastic resonance subject to colored noise", *Chinese Journal of Physics*, vol. 55, no. 2, pp. 252–259, 2017.
- [29] **Zhang, Lei***, W. Zheng, F. Xie, and A. Song, "Effect of the correlation between internal noise and external noise on logical stochastic resonance in bistable systems", *Physical Review E*, vol. 96, no. 5, p. 052 203, 2017.
- [30] J. He, Y. Zhang, Y. Zhou, and **Zhang, Lei**, "Adaptive stochastic gradient descent on the grassmannian for robust low-rank subspace recovery", *IET Signal Processing*, vol. 10, no. 8, pp. 1000–1008, 2016.
- [31] **Zhang, Lei**, A. Song, and J. He, "Logic signals driven stochastic resonance in bistable dynamics subjected to 1/f noise floor", *The European Physical Journal B*, vol. 80, no. 2, pp. 147–153, 2011.
- [32] **Zhang, Lei**, A. Song, and J. He, "Effect of colored noise on logical stochastic resonance in bistable dynamics", *Physical Review E*, vol. 82, no. 5, p. 051 106, 2010.
- [33] J. He, **Zhang, Lei**, Q. Wang, and Z. Li, "Using diffusion geometric coordinates for hyperspectral imagery representation", *IEEE Geoscience and Remote Sensing Letters*, vol. 6, no. 4, pp. 767–771, 2009.
- [34] **Zhang, Lei** and A. SONG, "Development and prospect of stochastic resonance in signal processing", *ACTA ELECTONICA SINICA*, vol. 37, no. 4, p. 811, 2009.
- [35] **Zhang, Lei**, A. Song, and J. He, "Stochastic resonance of a subdiffusive bistable system driven by lévy noise based on the subordination process", *Journal of Physics A: Mathematical and Theoretical*, vol. 42, no. 47, p. 475 003, 2009.
- [36] **Zhang, Lei**, J. He, and A. Song, "Stochastic resonance in saturation nonlinearities based on signal detection", *Fluctuation and Noise Letters*, vol. 8, no. 02, pp. L229–L235, 2008.

Professional Activities

- TPC Member of AAAI 2022 in Vancouver, BC, Canada
- Director of Education and Teaching Committee of Jiangsu Instrumentation Society

- Communication evaluation expert of graduate dissertations in degree center of Ministry of Education
- Reviewer
 - Association for the Advancement of Artificial Intelligence (AAAI):2021,2022,2023
 - International Conference on Machine Learning (ICML):2021
 - UbiComp/ISWC:2022
 - ACM transactions on Embedded Computing Systems (TECS)
 - ACM transactions on Knowledge Discuvery from Data (TKDD)
 - IEEE Transactions on Neural Networks and Learning Systems
 - IEEE Transactions on Artificial Intelligence
 - IEEE Transactions on Mobile Computing
 - IEEE Transactions on Industrial Electronics
 - IEEE Transactions on Signal Processing
 - IEEE Journal of Selected Topics on Signal Processing
 - IEEE Transactions on Instrumentation and Measurement
 - IEEE Transactions on Cognitive and Developmental System
 - IEEE Transactions on Circuits and Systems II: Express Briefs
 - IEEE Transactions on Circuits and Systems I: Regular Papers
 - IEEE Internet of Things Journal
 - IEEE Sensors Journal
 - Expert System an Applications
 - The Visual Computer
 - Journal of Supercomputing
 - Data in Brief
 - Scientific Data
 - International Journal of Bifurcation and Chaos
 - Chaos: An Interdisciplinary Journal of Nonlinear Sciences
 - Nonlinear Dynamics
 - Physics Letters A
 - Measurement Science and Technology
 - IEEE Access
 - Signal Processing
 - IET Computer Vision
 - Intelligent Systems with Applications
 - Scientific Reports
 - European Journal of Physics
 - Engineering Research Express
 - Electronic Letters
 - Chinese Journal of Physics
 - Measuement Science and Technoloty
 - Physica Scripta
 - International Journal of Bifurcation and Chaos s
 - International Journal of Environmental Research and Public Health
 - Sensors
 - Geo-spatial Information Science
 - Chemometrics and Intelligent Laboratory Systems
 - Indian Journal of Physics