Fengchao Xiong

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Education

Zhejiang University, Hangzhou, Zhejiang.   2014.9-2019.9
Ph.D in College of Computer Science
 Supervisor: Prof. Yuntao Qian.

Griffith University, Nathan, Queensland.   2017.11-2018.12
Visiting Student Supported by China Scholarship Council (CSC).
Supervisor: Prof. Jun Zhou.

Shandong University, Jinan, Shandong.   2010.9-2014.6
B.E in School of Software

Wuhan University, Wuhan, Hubei.   2011.9-2012.6
Exchange Student in International School of Software.

Working experience

Nanjing University of Science and Technology, Nanjing, Jiangsu.   2022.07-
Associate Professor in School of Computer Science and Engineering

Nanjing University of Science and Technology, Nanjing, Jiangsu.   2019.10-2022.06
Lecturer in School of Computer Science and Engineering

University of Macau, Macau, China.   2021.12-2023.11
Postdoc in State Key Laboratory of Internet of Things for Smart City
Supervisor: Dr. Jiantao Zhou.

Research

- Hyperspectral Computer Vision：Denoising; Reconstruction; Tracking; Detection
- Remote Sensing Image Analysis：Road Extraction; Object Detection;Change Detection;Segmentation
- Machine Learning：Deep Learning; Matrix/Tensor Decomposition; Dictionary Learning; Low-rank/Sparse Representation

Projects

- Fengchao Xiong (PI), Tensor based spatial-spectral-temporal appearance modeling for hyperspectral object tracking, National Natural Science Foundation of China, 2021.01-2023.12, 240,000 RMB
- Fengchao Xiong (PI), Model-driven deep learning for hyperspectral imagery denoising, Jiangsu Provincial Natural Science Foundation of China, 2020.07-2023.07, 200,000 RMB

Honors and Awards

Best Reviewer of IEEE TGRS 2022	2023.04
Best Paper Award on Deep Learning for Earth Observation and Remote Sensing@DICTA 2021	2021.12
Second Place of DIGIX Global AI Challenge@Jiangsu Chapter	2021.09
Macau Young Scholar	2021.8
Second Place of Hyperspectral Object Tracking@WHISPERS	2021.3
DICTA Best Student Paper	2020.12
Excellent Research Assistant	2018.11
Excellent Graduate Student	2017.9
Excellent Exchange Student Scholarship	2012.9

Excellent Student Awards	2012.9
National Aspiration Scholarship	2011.9
Excellent Student Awards	2011.9

PROFESSIONAL ACTIVITIES

Reviewer:

- IEEE Transactions on Geoscience and Remote Sensing (TGRS)
- IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)
- IEEE Geoscience and Remote Sensing Society Letters (GRSL)
- Remote Sensing
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Signal Processing (TSP)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Cybernetics (TCYB)
- IEEE Transactions on Instrumentation and Measurement (TIM)
- IEEE Journal of Selected Topics in Signal Processing (JSTSP)
- Pattern Recognition (PR)
- Optics Express (OE)
- Knowledge Based System
- Neural Processing Letters
- International Journal of Remote Sensing
- IET Computer Vision
- IET Image Processing
- AAAI Conference on Artificial Intelligence (AAAI), 2022, 2023
- IEEE International Conference on Multimedia and Expo (ICME), 2021, 2022, 2023
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022, 2023
- IEEE International Conference on Image Processing (ICIP), 2022, 2023
- International Conference on Digital Image Computing: Techniques and Applications(DICTA), 2020, 2021, 2022
- IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2023

Volunteer: The 11th IAPR International Conference on Biometrics (ICB 2018, CCF C)

Publicity Chair: International Conference on SMART MULTIMEDIA, 2022 (ICSM 2022)

Area Chair: IEEE International Conference on Multimedia and Expo, 2023 (ICME 2023, CCF B)

Organizer: Hyperspectral Object Tracking Challenge, 2020, 2022

Topical Associate Editor: IEEE Transactions on Geoscience and Remote Sensing

Guest Editor: IET Computer Vision (IET CV, CCF C) for Special Issue "Spectral Imaging Powered Computer Vision" Deadline is 31 March 2023.

Lead Guest Editor: Remote Sensing for Special Issue "Hyperspectral Object Tracking". Deadline is 15 August 2023.

Review Editor of Frontiers in Imaging.

PUBLICATIONS

1. **Fengchao Xiong**, Jiantao Zhou, Jun Zhou, Jianfeng Lu, Yuntao Qian. "Multitask Sparse Representation Inspired Network for Hyperspectral Image Denoising", *IEEE Transactions on Geoscience and Remote*

Sensing (TGRS), 2023.

2. Zhuanfeng Li, **Fengchao Xiong***, Jun Zhou, Jianfeng Lu, Yuntao Qian. "Learning a Deep Ensemble Network with Band Importance for Hyperspectral Object Tracking", ***IEEE Transactions on Image Processing (TIP)***, 2023.

3. Ziqi Yu, Zhuang Zhao, Haocun Qi, Jing Han, Yi Zhang, Lianfa Bai, **Fengchao Xiong**. "Redundant Compressed Single-Pixel Hyperspectral Imaging System", ***Optics Communications***, 2023.

4. Zhuang Zhao, Jiutao Mu, Hui Xie, **Fengchao Xiong**, Jun Lu, JingHan. "Rapid coded aperture spectrometer based on energy concentration characterstic", ***Signal Processing***, 2023.

5. Hui Xie, Jing Han, Yi Zhang, **Fengchao Xiong**, Zhuang Zhao. "Dual camera snapshot high-resolution-hyperspectral imaging system with parallel joint optimization via physics-informed learning", ***Optics Express***, 2023.

6. Shou Feng, Rui Feng, Yiming Yan, Chunhui Zhao, **Fengchao Xiong**, Lifu Zhang. "An Attention-based Multiscale Spectral-Spatial Network for Hyperspectral Target Detection", ***IEEE Geoscience and Remote Sensing Letters (GRSL)***, 2023.

7. **Fengchao Xiong**, Jun Zhou, Zhuang Zhao, Yuntao Qian. "Iterative Refinement Network for Hyperspectral Image Denoising", ***IEEE International Conference on Multimedia & Expo (ICME)***, 2023.

8. Tianhan Li, **Fengchao Xiong**, Wenbin Zheng, Zhuanfeng Li, Jun Zhou, Yuntao Qian. "Wavelet Siamese Network for Change Detection in Remote Sensing Images", ***International Geoscience and Remote Sensing Symposium (IGARSS)***, 2023.

9. **Fengchao Xiong**, Zhongyi Gu, Wenbin Zheng, Tianhan Li, Jun Zhou. "Multi-task Attentional U-Net for Hyperspectral Image Denoising", ***International Geoscience and Remote Sensing Symposium (IGARSS)***, 2023.

10. **Fengchao Xiong**, Jun Zhou, Jiantao Zhou, Jianfeng Lu,Yuntao Qian. "Deep Parameterized Neural Networks for Hyperspectral Image Denoising", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS, Under Review)***, 2023.

11. Shou Feng, Rui Feng, Fengchao Xiong, Chunhui Zhao, Wei Li, Ran Tao. "A Transformer-Based Cross-Domain Few-Shot Learning Method for Hyperspectral Target Detection", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS, Under Review)***, 2023.

12. Junbin Chen, Minchao Ye, **Fengchao Xiong**, Yuntao Qian. "Adaptive graph modeling with self-training for heterogeneous cross-scene hyperspectral image classification ", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS, Under Review)***, 2023.

13. Guanyiman Fu, **Fengchao Xiong**, Jianfeng Lu, Jun Zhou, Jiantao Zhou, Yuntao Qian. "Hyperspectral Image Denoising via Spatial-Spectral Recurrent Transformer", ***IEEE Transactions on Image Processing (TIP, Under Review)***, 2023.

14. Zhuanfeng Li, **Fengchao Xiong**, Jun Zhou, Jianfeng Lu, Zhuang Zhao, Yuntao Qian. "Material-Guided Multi-View Fusion Network for Hyperspectral Object Tracking", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS, Major Revision)***, 2023.

15. **Fengchao Xiong**, Tianhan Li, Jun Zhou, Jiantao Zhou, Jianfeng Lu, Yuntao Qian. "Mask-Guided Local-Global Attentive Network for Change Detection in Remote Sensing Images", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS, Under Review)***, 2023.

16. Minchao Ye, Chenglong Wang, Zhihao Meng, **Fengchao Xiong**, Yuntao Qian. "Domain-invariant attention network for transfer learning between cross-scene hyperspectral images", ***IET Computer Vision (Under Review)***, 2023.

17. **Fengchao Xiong**, Jun Zhou, Shuyin Tao, Jianfeng Lu, Yuntao Qian. "SNMF-Net: Learning a Deep Alternating Neural Network for Hyperspectral Unmixing", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS)***, 2022.

18. **Fengchao Xiong**, Jun Zhou, Qinling Zhao, Jianfeng Lu, Yuntao Qian. "MAC-Net: Model Aided Nonlocal Neural Network for Hyperspectral Imagery Denoising", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS)***, 2022.

19. Minchao Ye, Junbin Chen, **Fengchao Xiong**, Yuntao Qian. "Learning a deep structural subspace across hyperspectral scenes with cross-domain VAE", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS)***, 2022.

20. **Fengchao Xiong**, Jun Zhou, Shuyin Tao, Jianfeng Lu, Jiantao Zhou, Yuntao Qian. "SMDS-Net: Model Guided Spectral-Spatial Network for Hyperspectral Image Denoising", ***IEEE Transactions on Image Pro-***

cessing (TIP), 2022.

21. Guanyiman Fu, **Fengchao Xiong***, Jianfeng Lu, Jun Zhou, Yuntao Qian. "Hyperspectral Image Denoising via Nonlocal Spatial-Spectral Recurrent Neural Network", *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*, 2022.

22. Hui Xie, Jun Lu, JingHan, Yi Zhang, **Fengchao Xiong**, Zhuang Zhao. "Fourier space coded hyperspectral imaging system", *Optics and Lasers in Engineering (OLEN)*, 2022.

23. Zhuanfeng Li, **Fengchao Xiong***, Jianfeng Lu, Jun Zhou, Yuntao Qian. "Material-Guided Siamese Fusion Network for Hyperspectral Object Tracking", *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2022.

24. **Fengchao Xiong***, Jun Zhou, Minchao Ye,Jianfeng Lu,Yuntao Qian. "Multitask Sparse Neural Network for Hyperspectral Image Denoising", *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2022.

25. Xiangyu Wu, Jianfeng Lu, Zhuanfeng Li, **Fengchao Xiong**. "Ques-to-Visual Guided Visual Question Answering", *IEEE International Conference on Image Processing (ICIP)*, 2022.

26. **Fengchao Xiong**, Minchao Ye, Jun Zhou, Yuntao Qian. "Spatial-Spectral Convolutional Sparse Neural Network for Hyperspectral Image Denoising", *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2022.

27. Zhihao Meng, Minchao Ye, Futian Yao, **Fengchao Xiong**, Yuntao Qian. "Cross-scene Hyperspectral Image Classification Based on Cycle-Consistent Adversarial Networks", *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2022.

28. Chenglong Wang, Minchao Ye, Ling Lei, **Fengchao Xiong**, Yuntao Qian. "Cross-domain Attention Network for Hyperspectral Image Classification'", *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2022.

29. Jianxi Wang, Minchao Ye, **Fengchao Xiong**, Yuntao Qian. "Cross-scene hyperspectral feature selection via hybrid whale optimization algorithm with simulated annealing", *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)*, 2021.

30. **Fengchao Xiong**, Jun Zhou, Minchao Ye, Jianfeng Lu, Yuntao Qian. "NMF-SAE: An interpretable sparse autoencoder for hyperspectral unmixing", *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2021.

31. Zhuanfeng Li, Xinhai Ye, **Fengchao Xiong***, Jianfeng Lu, Jun Zhou, Yuntao Qian. "Spectral-Spatial-Temporal Attention Network for Hyperspectral Tracking", *IEEE Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, 2021.

32. Guanyiman Fu, **Fengchao Xiong***, Shuyin Tao, Jianfeng Lu, Jun Zhou, Yuntao Qian,. "Learning a model-based deep hyperspectral denoiser from a single noisy hyperspectral image", *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2021.

33. Shide Zou, **Fengchao Xiong***, Haonan Luo, Jianfeng Lu, Yuntao Qian. "AF-Net: All-scale Feature Fusion Network for Road Extraction from Remote Sensing Images", *International Conference on Digital Image Computing: Techniques and Applications(DICTA)*, 2021.

34. **Fengchao Xiong**, Jun Zhou, Yuntao Qian. "Material Based Object Tracking in Hyperspectral Videos", *IEEE Transactions on Image Processing (TIP)*, vol. 29, no. 1, pp. 3719-3733, 2020.

35. Yuntao Qian, **Fengchao Xiong**, Qipeng Qian, Jun Zhou. "Spectral Mixture Model Inspired Network Architectures for Hyperspectral Unmixing", *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*,vol. 58, no. 10, pp. 7418-7434, 2020.

36. **Fengchao Xiong**, Kun Qian, Jianfeng Lu, Jun Zhou, Yuntao Qian. "Nonlocal Low-rank Nonnegative Tensor Factorization for Hyperspectral Unmixing", *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2020.

37. Xinhai Ye, **Fengchao Xiong***, Jianfeng Lu, Haifeng Zhao, Jun Zhou. "M2-Net: A Multi-scale Multi-level Feature Enhanced Network for Object Detection in Optical Remote Sensing Images", *International Conference on Digital Image Computing: Techniques and Applications(DICTA)*, 2020. (**Best Student Paper**)

38. Zhuanfeng Li, **Fengchao Xiong***, Jun Zhou, Jing Wang, Jianfeng Lu, Yuntao Qian. "BAE-Net: A Band

Attention Aware Ensemble Network for Hyperspectral Object Tracking", *IEEE International Conference on Image Processing (ICIP)*, 2020.

39. **Fengchao Xiong**, Jun Zhou, Jianfeng Lu, Yuntao Qian. "Non-convex Non-separable Sparse Nonnegative Matrix Factorization for Hyperspectral Unmixing", *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)*, 2020.

40. Xinhai Ye, **Fengchao Xiong***, Jun Zhou, Jianfeng Lu, Yuntao Qian."$\mathcal{F}^3$-Net: Feature Fusion and Filtration Network for Object Detection in Optical Remote Sensing Images", *Remote Sensing*, 2020.

41. **Fengchao Xiong**, Yuntao Qian, Jun Zhou, Yuan Yan Tang. "Hyperspectral Unmixing via Total Variation Regularized Nonnegative Tensor Factorization", *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*, vol. 57, no. 4, pp. 2341-2357, 2019.

42. **Fengchao Xiong**, Jun Zhou, Yuntao Qian. "Hyperspectral Restoration via L_0 Gradient Regularized Low-Rank Tensor Factorization", *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*, vol. 57, no. 12, pp. 10410-10425, 2019.

43. **Fengchao Xiong**, Jun Zhou, Yuntao Qian, Jocelyn Chanussot. "Dynamic Material-Aware Object Tracking in Hyperspectral Videos", *IEEE Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, 2019.

44. Qipeng Qian, **Fengchao Xiong**, Jun Zhou. "Deep Unfolded Iterative Shrinkage-Thresholding Model for Hyperspectral Unmixing", *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2019.

45. **Fengchao Xiong**, Jingzhou Chen, Jun Zhou, Yuntao Qian. "Superpixel-Based Nonnegative Tensor Factorization for Hyperspectral Unmixing", *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2018.

46. **Fengchao Xiong**, Jun Zhou, Yuntao Qian. "Hyperspectral Imagery Denoising via Reweighed Sparse Low-Rank Nonnegative Tensor Factorization" , *IEEE International Conference on Image Processing (ICIP)*, 2018.

47. Kun Qian, Jun Zhou, **Fengchao Xiong**, Huixin Zhou, Juan Du. "Object Tracking in Hyperspectral Videos with Convolutional Features and Kernelized Correlation Filter", *International Conference on Smart Multimedia (ICSM)*, 2018.

48. Yuntao Qian, **Fengchao Xiong**, Shan Zeng, Jun Zhou, Yuan Yan Tang. "Matrix-Vector Nonnegative Tensor Factorization for Blind Unmixing of Hyperspectral Imagery", *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*, vol. 55, no. 3, pp. 1776-1792, 2017.

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Referees

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- Jiantao Zhou (jtzhou@um.edu.mo)