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: Dr. Jun Zhou.

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

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.   2019.10-
Lecturer in School of Computer Science and Engineering

Research

- Low-rank and sparse matrix/tensor representation
- Hyperspectral imaging
- Object tracking
- Deep learning

Research Projects

- Fengchao Xiong (PI), Tensor based spatial-spectral-temporal appearance modeling for hyperspectral object tracking, National Natural Science Foundation of China, 2021-2023, 24,0000 RMB
- Fengchao Xiong (PI), Model-driven deep learning for hyperspectral imagery denoising, Jiangsu Provincial Natural Science Foundation of China, 2020.07-2023.07, 20,0000 RMB

Honors and Awards

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 Image Processing (TIP)

- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Geoscience and Remote Sensing (TGRS)
- IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)
- IEEE Journal of Selected Topics in Signal Processing (JSTSP)
- Pattern Recognition (PR)
- IEEE Geoscience and Remote Sensing Society Letters
- Geo-spatial Information Science
- Remote Sensing
- Sensors
- Knowledge Based System
- Neural Processing Letters
- International Journal of Remote Sensing
- IET Computer Vision
- IET Image Processing
- IEEE International Conference on Multimedia and Expo (ICME), 2021
- International Conference on Digital Image Computing: Techniques and Applications(DICTA), 2020, 2021
- AAAI Conference on Artificial Intelligence 2021

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

Publicity Chair: International Conference on SMART MULTIMEDIA, 2021 (ICSM 2021)

Organizer: Hyperspectral Object Tracking Challenge, 2020 (HOT 2020)

Guest Editor of IET Computer Vision (IET CV) Special Issue "Spectral Imaging Powered Computer Vision"

PUBLICATIONS

1. 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.

2. **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.

3. **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.

4. 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.

5. **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*, vol. 57, no. 4, pp. 2341-2357, 2019.

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

7. **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.

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

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

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

11. **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.

12. 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**)

13. 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.

14. **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.

15. 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.

16. 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.

17. **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.

18. 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.

19. Yiman Fuguan, **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.

20. **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* (Accepted), 2021.

21. **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 Processing (Major Revision)* , 2021.

22. **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 (Accepted)*, 2021.

23. 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 (Accepted)*, 2021.

24. Zhuangeng Li, **Fengchao Xiong**, Jun Zhou, Jianfeng Lu, Yuntao Qian. "Learning a Deep Ensemble Network for Hyperspectral Object Tracking", *IEEE Transactions on Image Processing (Under Review)*, 2021.

25. 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.

26. 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 , CCF B), 2022.

27. **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 , CCF B)*, 2022.

Referees

- Yuntao Qian (ytqian@zju.edu.cn)
- Jun Zhou (jun.zhou@griffith.edu.au)