Fengchao Xiong

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Education

Ph.D., Computer Science **Hangzhou, China**
*College of Computer Science, **Zhejiang University*** *2014.9-2019.10*
Supervisor: Prof. Yuntao Qian

Visiting student, Computer Science **Brisbane, Australia**
*School of Information and Communication Technology, **Griffith University*** *2017.11-2018.11*
Supervisor: A/Prof. Jun Zhou

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

Visiting student, Software Engineering **Wuhan, China**
*International School of Software, **Wuhan University*** *2011.9-2012.6*

Working Experience

Nanjing University of Science and Technology, Nanjing, China. 2019.10-
Lecturer (Assistant Professor) in School of Computer Science and Engineering

Research

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

Funded 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

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. **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.

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

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***, 2021. (Under Review)

21. **Fengchao Xiong**, Jun Zhou, Jianfeng Lu, Yuntao Qian. "SMDS-Net: Model Guided Spectral-Spatial Network for Hyperspectral Image Denoising", ***arXiv preprint***, 2021.

   * indicates corresponding author.

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
- 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

Volunteer: The 11th IAPR International Conference on Biometrics (ICB 2018)   2018.2
Organizer: Hyperspectral Object Tracking Challenge@WHISPERS 2021

Honors and Awards

Co-recipient of Best Student Paper of DICTA 2020	2020.11
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

Referees

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