Dr. Xia Xu

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Github: https://xuxiaa.github.io/Homepage/
Google Scholar: https://scholar.google.com/citations?user=F14qOygAAAAJhl=zh-CN
Research Interests: **remote sensing image processing, unmixing, super-resolution**

EDUCATION/WORK

Jun 2024-on	**Professor**, School of Computer Science and Technology, Tiangong University
Jun 2024-on	**Tiangong Distinguished Young Scholar**, Tiangong University
Sep 2023-on	**Researcher(p.t.)**, Xinchuang Haihe Laboratory, Tianjin
Oct 2019-May 2024	**Postdoc Research Fellow**, School of Computer Science, Nankai University
Sep 2015-Jan 2019	**Ph.D.**, School of Astronautics, Beihang University

HONORS

2021	**2019 ACM China Excellent Doctoral Dissertation Award (Tianjin Branch)**.
2018	**Beihang Doctoral Academic Excellence Fund**.
2018	**National Scholarship**.
2018	**Beihang Excellent academic paper Award**.
2018	**Beihang outstanding graduate student**.
2017	**Ministry of Industry and Information Technology Innovation and Entrepreneurship scholarship**.
2015	**Beihang Doctoral Student Scholarship**.

TEACHING

2024/2025 Spring	**Operating System, undergraduate course**.
2024/2025 Fall	**Object-Oriented Programming-Java, International course (English)**.
2023/2024 Fall	**Foundations of Programming Design, undergraduate course**.
2022/2023 Fall	**Foundations of Programming Design, undergraduate course**.
2022/2023 Fall	**Internet of Things cutting-edge technology, undergraduate course**.
2021/2022 Fall	**Foundations of Programming Design, undergraduate course**.
2021/2022 Fall	**Neural Network Engineering, undergraduate course**.
2020/2021 Fall	**Foundations of Programming Design, undergraduate course**.
2020/2021 Fall	**Fundamentals of Python Programming, undergraduate course**.

ACADEMIC SERVICE

Jun 2025-on	**AC, CCF YOCSEF (Tianjin)**.
Feb 2022-on	**Committee Member, China Communication Association Technology Committee**.
Aug 2023-on	**Remote Sensing, Special Issue: "Imagery Classification and Feature Extraction Based on Hyperspectral Remote Sensing". Guest Editor**.
Apr 2024-on	**Remote Sensing, Special Issue: "Pattern Recognition and Image Processing for Remote Sensing IV)". Guest Editor**.
Jun 2023-Nov 2024	**Remote Sensing, Special Issue: "Pattern Recognition and Image Processing for Remote Sensing (3rd Edition)". Guest Editor**.
Oct 2021-Jun 2023	**Remote Sensing, Special Issue: "Pattern Recognition and Image Processing for Remote Sensing II". Guest Editor**.

PROJECTS

`Oct 2023-Oct 2025`	**Research on Hyperspectral unmixing under Strong Correlation**. National Natural Science Foundation of Tianjin (Youth Project), Principle Investigator
`Jan 2021-Dec 2023`	**Research on sparse unmixing for hyperspectral remote sensing images based on multi-objective optimization**. National Natural Science Foundation of China (Youth Project), Principle Investigator
`Mar 2020-Sep 2021`	**Research on Hyperspectral sparse unmixing based on multi-objective optimization**. China Postdoctoral Science Foundation-MZ, Principle Investigator

JOURNAL REVIEW SERVICE

- **IEEE Transactions on Image Processing**.
- **IEEE Transactions on Geoscience and Remote Sensing**.
- **ISPRS Journal of Photogrammetry and Remote Sensing**.
- **IEEE Transactions on Neural Networks and Learning Systems**.
- **IEEE Transactions on Cybernetics**.
- **Applied Soft Computing**.
- **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**.
- **IEEE Geoscience and Remote Sensing Letters**.
- **Remote Sensing**.
- **International Journal of Remote Sensing**.
- **Infrared Physics and Technology**.

PUBLICATIONS

2024 **A Lightweight Transformer-Based Spatiotemporal Analysis Prediction Algorithm for High-Dimensional Meteorological Data**.
Yinghao Tan, Junfeng Wu, Yihang Liu, Shiyu Shen, Xia Xu* and Bin Pan. Remote Sensing, 16, 4545, 2024.

2023 **Unmixing Guided Unsupervised Network for RGB Spectral Super-Resolution**.
Qiaoying Qu, Bin Pan, Xia Xu*, Tao Li and Zhenwei Shi. IEEE Transactions on Image Processing. vol. 32, pp. 4856-4867, 2023.

2023 **UnDAT: Double Aware Transformer for Hyperspectral Unmixing**.
Yuexin Duan#, Xia Xu#, Bin Pan, Tao Li and Zhenwei Shi. IEEE Transactions on Geoscience and Remote Sensing, vol. 61, no. 5522012, 2023.

2023 **Reducing the statistical error of generative adversarial networks using space-filling sampling**.
Sumin Wang, Yuyou Gao, Yongdao Zhou, Bin Pan, Xia Xu*, Tao Li. Stat 13 (1), e655, 2023.

2022 **Deep Autoencoder for Hyperspectral Unmixing via Global-Local Smoothing**.
Xia Xu, Xinyu Song, Tao Li, Zhenwei Shi and Bin Pan. IEEE Transactions on Geoscience and Remote Sensing, vol. 60, no. 5524216, 2022.

2022 **Structure-Color Preserving Network for Hyperspectral Image Super Resolution**.
Bin Pan, Qiaoying Qu, Xia Xu*, Zhenwei Shi. IEEE Transactions on Geoscience and Remote Sensing, vol. 60, no. 5520512, 2022.

2022 **A Balanced Social LSTM for PM2.5 Concentration Prediction Based on Local Spatiotemporal Correlation**.
Lukui Shi, Huizhen Zhang, Xia Xu*, Ming Han, Peiliang Zuo. Chemosphere, vol. 291, no. 3, 133124, 2022.

2021 **SA-JSTN: Self-Attention Joint Spatiotemporal Network for Temperature Forecasting**.
Lukui Shi, Nanying Liang, Xia Xu*, Tao Li*, Zhou Zhang. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 14, pp. 9475-9485, 2021.

2021   **Simultaneously Multiobjective Sparse Unmixing and Library Pruning for Hyperspectral Imagery**.
Xia Xu, Bin Pan, Zongqing Chen, Zhenwei Shi, Tao Li. IEEE Transactions on Geoscience and Remote Sensing, 59(4): 3383-3395, 2021.

2021   **Aircraft Detection in Remote Sensing Images Based on Deconvolution and Position Attention**.
Lukui Shi, Zhenjie Tang, Tiantian Wang, Xia Xu*, Jing Liu and Jun Zhang. International Journal of Remote Sensing, 42(11): 4241-4260, 2021.

2020   **A Contextual Bidirectional Enhancement Method for Remote Sensing Image Object Detection**.
Jun Zhang, Changming Xie, Xia Xu*, Zhenwei Shi, Bin Pan. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 13, pp. 4518-4531, 2020.

2020   **DSSNet: A Simple Dilated Semantic Segmentation Network for Hyperspectral Imagery Classification**.
Bin Pan, Xia Xu*, Zhenwei Shi, Ning Zhang, Huanlin Luo, Xianchao Lan. IEEE Geoscience and Remote Sensing Letters, 17(11): 1968-1972, 2020.

2020   **Slice-Feature Based Deep Hashing Algorithm for Remote Sensing Image Retrieval**.
Enhai Liu, Xintong Zhang, Xia Xu*, Shiyan Fan. Infrared Physics and Technology, vol. 107, 103299, 2020.

2019   **Multi-Objective Based Sparse Representation Classifier for Hyperspectral Imagery Using Limited Samples**.
Bin Pan, Zhenwei Shi*, Xia Xu*. IEEE Transactions on Geoscience and Remote Sensing, 57(1): 239-249, 2019.

2019   **A Classification-based Model for Multi-Objective Hyperspectral Sparse Unmixing**.
Xia Xu, Zhenwei Shi, Bin Pan, Xuelong Li. IEEE Transactions on Geoscience and Remote Sensing, 57(12): 9612-9625, 2019.

2019   **Tropical cyclone intensity prediction based on recurrent neural networks**.
Bin Pan, Xia Xu*, Zhenwei Shi. Electronics Letters, 55 (7), 413-415, 2019.

2018   **L0-based Sparse Hyperspectral Unmixing using Spectral Information and a Multi-Objectives Formulation (*ESI Highly Cited Paper*)**.
Xia Xu, Zhenwei Shi, Bin Pan. ISPRS Journal of Photogrammetry and Remote Sensing, 141, 46-58, 2018.

2018   **A supervised abundance estimation method for hyperspectral unmixing**.
Xia Xu, Zhenwei Shi, Bin Pan. Remote sensing letters, 9 (4), 383-392, 2018.

2017   **Multi-Objective based Spectral Unmixing for Hyperspectral Images (*ESI Highly Cited Paper*)**.
Xia Xu, Zhenwei Shi. ISPRS Journal of Photogrammetry and Remote Sensing, 124: 54-69, 2017.

2017   **A New Unsupervised Hyperspectral Band Selection Method Based on Multiobjective Optimization**.
Xia Xu, Zhenwei Shi, Bin Pan. IEEE Geoscience and Remote Sensing Letters, 14(11): 2112-2116, 2017.