

- 10.1109/LGRS.2023.3276968]
- Qi X M, Zhu P P, Wang Y B, Zhang L Q, Peng J H, Wu M F, Chen J L, Zhao X D, Zang N and Mathiopoulos P T. Mlrnet. A multi-label high spatial resolution remote sensing dataset for semantic scene understanding. *ISPRS Journal of Photogrammetry and Remote Sensing*, 2020: 169: 337-350. [DOI: 10.1016/j.isprsjprs.2020.09.020]
- Saha S, Zhao S and Zhu X X. Multitarget domain adaptation for remote sensing classification using graph neural network. *IEEE Geoscience and Remote Sensing Letters*, 2022: 19: 1-5. [DOI: 10.1109/LGRS.2022.3149950]
- Tasar O, Happy S L, Tarabalka Y and Alliez P. Semi2i: semantically consistent image-to-image translation for domain adaptation of remote sensing data//IGARSS 2020 IEEE International Geoscience and Remote Sensing Symposium. 2020: 1837-1840. [DOI: 10.1109/IGARSS39084.2020.9323711]
- Wang H Y, Cheng Y H and Wang X S. 2023. Correlation subdomain alignment network based cross-domain hyperspectral image classification method. *Journal of Image and Graphics*, 28(10): 3255-3266 (王浩宇, 程玉虎, 王雪松.2023.关联子域对齐网络的跨域高光谱图像分类. *中国图象图形学报*, 28(10): 3255-3266) [DOI:10.11834/jig.220763]
- Wang Q, Liu S T, Chanussot J and Li X L. Scene classification with recurrent attention of VHR remote sensing images. *IEEE Transactions on Geoscience and Remote Sensing*, 2019, 57(2): 1155-1167. [DOI: 10.1109/TGRS.2018.2864987]
- Wang S Y, Hou D Y and Xing H Q. A self-supervised-driven open-set unsupervised domain adaptation method for optical remote sensing image scene classification and retrieval. *IEEE Transactions on Geoscience and Remote Sensing*, 2023, 61: 1-15. [DOI: 10.1109/TGRS.2023.3260873]
- Wang K, Zhang G, Leung H. SAR target recognition based on cross-domain and cross-task transfer learning. *IEEE Access*, 2019, 7: 91-99. [DOI: 10.1109/ACCESS.2019.2948618]
- Wang Y, Wang C, Zhang H, Dong Y and Wei S. A SAR dataset of ship detection for deep learning under complex backgrounds. *Remote Sensing*. 2019: 11(7):765. [DOI: 10.3390/rs11070765]
- Wang Y, Xu C, Liu C, Li Z. Context information refinement for few-shot object detection in remote sensing images. *Remote Sensing*. 2022: 14(14):3255. [DOI:10.3390/rs14143255]
- Wei S, Zeng X, Qu Q, Wang M, Su H and Shi J. HRSID: A high-resolution SAR images dataset for ship detection and instance segmentation. *IEEE Access*. 2020: 8: 120234-120254. [DOI: 10.1109/ACCESS.2020.3005861]
- Xu C J, Zheng X T, Lu X Q. Multi-level alignment network for cross-domain ship detection. *Remote Sensing*. 2022: 14(10):2389. [DOI: 10.3390/rs14102389]
- Xia G, Bai X, Ding J, Zhu Z, Belongie S, Luo J, Datcu M, Pelillo M and Zhang L. DOTA: a large-scale dataset for object detection in aerial images. *IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 2018:3974-3983. [DOI: 10.1109/CVPR.2018.00418]
- Xiao Z F, Long Y, Li D R, Wei C S, Tang G F and Liu J Y. High-resolution remote sensing image retrieval based on cnns from a dimensional perspective. *Remote Sensing*, 2017, 9(7). [DOI:10.3390/rs9070725]
- Xu Q S, Shi Y L and Zhu X X. Universal domain adaptation without source data for remote sensing image scene classification.I. *GARSS 2022 - 2022 IEEE International Geoscience and Remote Sensing Symposium*. 2022: 5341-5344. [DOI: 10.1109/IGARSS46834.2022.9884889]
- Xu Q S, Shi Y L, Yuan X and Zhu X X. Universal domain adaptation for remote sensing image scene classification. *IEEE Transactions on Geoscience and Remote Sensing*. 2023, 61: 1-15. [DOI: 10.1109/TGRS.2023.3235988]
- Yang Y and Newsam S. Bag-of-visual-words and spatial extensions for land-use classification. *Proceedings of the 18th SIGSPATIAL International Conference on Advances in Geographic Information Systems*. New York, NY, USA: Association for Computing Machinery, 2010: 270-279. [DOI: 10.1145/1869790.1869829]
- You K C, Long M S, Cao Z J, Wang J M and Jordan M I. Universal domain adaptation. 2019 *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. IEEE, 2019. [DOI: 10.1109/cvpr.2019.00283]
- Zhao B, Zhong Y F, Xia G S and Zhang L P. Dirichlet-derived multiple topic scene classification model for high spatial resolution remote sensing imagery. *IEEE Transactions on Geoscience and Remote Sensing*, 2016, 54(4): 2108-2123. [DOI: 10.1109/TGRS.2015.2496185]
- Zhao L J, Tang P and Huo L Z. Feature significance-based multibag-of-visual-words model for remote sensing image scene classification. *Journal of Applied Remote Sensing*, 2016, 10(3): 035004. [DOI: 10.1117/1.JRS.10.035004]
- Zhao X Y, Hu J J, Mou L C, Xiong Z T and Zhu X X. Cross-city landuse classification of remote sensing images via deep transfer learning. *International Journal of Applied Earth Observation and Geoinformation*, 2023, 122: 103358. [DOI:

10.1016/j.jag.2023.103358]

Zheng J P, Wu W Z, Fu H H, Li W J, Dong R M, Zhang L X and Yuan S. Unsupervised mixed multitarget domain adaptation for remote sensing images classification. IGARSS 2020 IEEE International Geoscience and Remote Sensing Symposium. 2020:1381-1384. [DOI: 10.1109/IGARSS39084.2020.9323602]

Zheng J P, Wu W Z, Yuan S, Zhao Y, Li W J, Zhang L X, Dong R M and Fu H H. A two-stage adaptation network (TSAN) for remote sensing scene classification in single-source-mixed-multiple-target domain adaptation (S²M²T DA) scenarios. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60: 1-13. [DOI: 10.1109/TGRS.2021.3105302]

Zheng J P, Zhao Y, Wu W Z, Chen M X, Li W J and Fu H H. Partial domain adaptation for scene classification from remote sensing imagery. IEEE Transactions on Geoscience and Remote Sensing, 2023, 61: 1-17. [DOI: 10.1109/TGRS.2022.3229039]

Zheng Z D, Zhong Y F, Su Y and Ma A L. Domain adaptation via a task-specific classifier framework for remote sensing cross-scene classification. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60: 1-13. [DOI: 10.1109/TGRS.2022.3151689]

Zhou W X, Newsam S, Li C and Shao Z F. Patternnet: A benchmark dataset for performance evaluation of remote sensing image retrieval. ISPRS Journal of Photogrammetry and Remote Sensing, 2018, 145: 197-209. [DOI: 10.1016/j.isprsjprs.2018.01.004]

Zhu S H, Du B, Zhang L P and Li X. Attention-based multiscale residual adaptation network for cross scene classification. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60: 1-15. [DOI: 10.1109/TGRS.2021.3056624]

Zhu S H, Wu C, Du B and Zhang L P. Adversarial divergence training for universal cross-scene classification. IEEE Transactions on Geoscience and Remote Sensing, 2023, 61: 1-12. [DOI: 10.1109/TGRS.2023.3274781]

Zou Q, Ni L H, Zhang T and Wang Q. Deep learning-based feature selection for remote sensing scene classification. IEEE Geoscience and Remote Sensing Letters, 2015, 12(11): 2321-2325. [DOI: 10.1109/LGRS.2015.2475299]

Zhang Y, Yuan Y, Feng Y and Lu X. Hierarchical and robust convolutional neural network for very high-resolution remote sensing object detection. IEEE Transactions on Geoscience and Remote Sensing, 2019: 57(8): 5535-5548. [DOI: 10.1109/TGRS.2019.2900302]

Zheng X T, Cui H W, Xu C J and Lu X Q. Dual teacher: a

semisupervised cotraining framework for cross-domain ship detection. IEEE Transactions on Geoscience and Remote Sensing. 2023: 61:1-12. [DOI: 10.1109/TGRS.2023.3287863]

作者简介



郑向涛, 男, 研究员, 主要研究方向为从事遥感场景解译, 智能光学感知, 模式识别。E-mail: zhengxiangtao@fzu.edu.cn



卢孝强, 通信作者, 男, 研究员, 主要研究方向为模式识别, 机器学习, 高光谱图像分析。E-mail: luxiaoqiang@fzu.edu.cn

肖欣林, 男, 博士研究生, 主要研究方向为遥感图像解译, 计算机视觉, 目标检测。E-mail: 231110034@fzu.edu.cn

陈秀妹, 女, 讲师, 主要研究方向为深度学习。E-mail: chenxiumeidd@gmail.com

卢宛萱, 女, 助理研究员, 主要研究方向为计算机视觉与地理空间大数据解译。E-mail: luwx@aircas.ac.cn

刘小煜, 女, 助理研究员, 主要研究方向为遥感图像智能解译与计算机视觉。E-mail: liuxiaoyu@aircas.ac.cn