Rui Li

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Personal Website

lironui.github.io
Web of Science
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Scientific Interests

- Offshore Renewable Energy
- Land Cover Classification
- Semantic Segmentation
- Attention Mechanism
- Cloud Removal
- Deep Learning
- Wake Effects

Education

Now **Ph.D. candidate**
University of Warwick
Coventry – UK

2021 **Master in Engineering**
Wuhan University
Wuhan – China

2019 **Bachelor in Engineering**
South China University of Technology
Guangzhou – China

I am currently a Ph.D. candidate at the University of Warwick, supervised by Prof. **Xiaowei Zhao**. My research interests lie in transdisciplinary applications of deep learning methods, especially for **remote sensing, computer vision and renewable energy**. I have authored more than **15** peer-reviewed articles in international scientific journals such as ISPRS *P&RS* (IF=**11.774**), IEEE *TGRS* (IF=**8.125**), *PR* (IF=**8.518**), *ECM* (IF=**11.533**) and *Energy* (IF=**8.857**), which have been cited **350+** times indexed by the Web of Science with the *h*-index of **10**. **Five** of my first-authored papers have been selected as the **ESI Highly Cited Paper** (Top 1%) and **one** as the **ESI Hot Paper** (Top 0.1%).

Publications

† Equal Contribution * Corresponding Author

- **Wind Farm Wake Modeling**:

[1] R. Li, J. Zhang, X. Zhao. Multi-Fidelity Modeling of Wind Farm Wakes Based on A Novel Super-Fidelity Network. *Energy Conversion and Management*, vol. 270, pp. 116185, 2022. (JCR Q1, IF=**11.533**).
[Link] [PDF]

[2] R. Li, J. Zhang, X. Zhao. Dynamic Wind Farm Wake Modeling Based on a Bilateral Convolutional Neural Network and High-Fidelity LES Data. *Energy*, vol. 258, pp. 124845, 2022. (JCR Q1, IF=**8.857**).
[Link] [PDF] [Video]

- **Attention Mechanism**:

[3] R. Li, S. Zheng, C. Zhang, C. Duan, L. Wang, P. M. Atkinson. ABCNet: Attentive Bilateral Contextual Network for Efficient Semantic Segmentation of Fine-Resolution Remote Sensing Images. ISPRS *Journal of Photogrammetry and Remote Sensing*, vol. 181, pp. 84-98, 2021. (JCR Q1, IF=**11.774**, **ESI Hot Paper**).
[Link] [PDF] [Code]

[4] R. Li, S. Zheng, C. Zhang, C. Duan, J. Su, L. Wang, P. M. Atkinson. Multiattention-Network for Semantic Segmentation of Fine-Resolution Remote Sensing Images. IEEE *Transactions on Geoscience and Remote Sensing*, vol. 60, pp. 1-13, 2022. (JCR Q1, IF=**8.125**, **ESI Highly Cited Paper**).
[Link] [PDF] [Code]

[5] R. Li *, S. Zheng, C. Duan, J. Su, L. Wang, C. Zhang. Multistage Attention ResU-Net for Semantic Segmentation of Fine-Resolution Remote Sensing Images. IEEE *Geoscience and Remote Sensing Letters*, vol. 19, pp. 1-5, 2022. (JCR Q1, IF=**5.343**, **ESI Highly Cited Paper**).
[Link] [PDF] [Code]

◦ **Vision Transformer**:

[6] L. Wang, R. Li, C. Zhang, S. Fang, C. Duan, X. Meng, P. M. Atkinson. UNetFormer: An UNet-like Transformer for Efficient Semantic Segmentation of Remote Sensing Urban Scene Imagery. ISPRS *Journal of Photogrammetry and Remote Sensing*, vol. 190, pp. 196-214, 2022. (JCR Q1, IF=**11.774**).

[Link] [PDF] [Code]

[7] L. Wang, S. Fang, X. Meng, R. Li. Building extraction with vision transformer. IEEE *Transactions on Geoscience and Remote Sensing*, vol. 60, pp. 1-11, 2022. (JCR Q1, IF=**8.125**).

[Link] [PDF] [Code]

[8] L. Wang, R. Li, C. Duan, C. Zhang, X. Meng, S. Fang. A Novel Transformer based Semantic Segmentation Scheme for Fine-Resolution Remote Sensing Images. IEEE *Geoscience and Remote Sensing Letters*, vol. 19, pp. 1-5, 2022. (JCR Q1, IF=**5.343**, **ESI Highly Cited Paper**).

[Link] [PDF] [Code]

[9] L. Wang †, R. Li †, D. Wang, C. Duan, T. Wang, X. Meng. Transformer Meets Convolution: A Bilateral Awareness Network for Semantic Segmentation of Very Fine Resolution Urban Scene Images. *Remote Sensing*, vol. 13, no. 16, p. 3065, 2021. (SCI Q2 Top, IF=**5.349**).

[Link] [PDF] [Code]

[10] X. Meng, Y. Yang, L. Wang, T. Wang, R. Li, C. Zhang. Class-Guided Swin Transformer for Semantic Segmentation of Remote Sensing Imagery. IEEE *Geoscience and Remote Sensing Letters*, vol. 19, pp. 1-5, 2022. (JCR Q1, IF=**5.343**).

[Link] [PDF]

◦ **Semantic Segmentation**:

[11] R. Li, L. Wang, C. Zhang, C. Duan, S. Zheng. A^2-FPN for semantic segmentation of fine-resolution remotely sensed images. *International Journal of Remote Sensing*, vol. 43, no. 3, pp. 1131-1155, 2022. (JCR Q2, IF=**3.531**).

[Link] [PDF] [Code]

[12] R. Li, S. Zheng, C. Duan, L. Wang, C. Zhang. Land Cover Classification from Remote Sensing Images Based on Multi-Scale Fully Convolutional Network. *Geo-spatial Information Science*, vol. 25, no. 2, pp. 278-294, 2022. (JCR Q2, IF=**4.278**, **ESI Highly Cited Paper**).

[Link] [PDF] [Code]

[13] R. Li †*, C. Duan †, S. Zheng, C. Zhang, P. M. Atkinson. MACU-Net for semantic segmentation of fine-resolution remotely sensed images. IEEE *Geoscience and Remote Sensing Letters*, vol. 19, pp. 1-5, 2022. (JCR Q1, IF=**5.343**, **ESI Highly Cited Paper**).

[Link] [PDF] [Code]

[14] L. Wang, C. Zhang, R. Li, C. Duan, X. Meng, P. M. Atkinson. Scale-aware Neural Network for Semantic Segmentation of Multi-resolution Remote Sensing Images. *Remote Sensing*, vol. 13, no. 24, p. 5015, 2021. (JCR Q1, IF=**5.349**).

[Link] [PDF]

◦ **Hyperspectral Image Classification**:

[15] R. Li * , S. Zheng, C. Duan, Y. Yang, X. Wang. Classification of hyperspectral image based on double-branch dual-attention mechanism network. *Remote Sensing*, vol. 12, no. 3, p. 582, 2020. (JCR Q1, IF=**4.848**, **ESI Highly Cited Paper**).

[Link] [PDF] [Code]

[16] K. Wang, S. Zheng, R. Li *, L. Gui. A Deep Double-Channel Dense Network for Hyperspectral Image Classification. *Journal of Geodesy and Geoinformation Science*, vol. 4, p. 46-62, 2021. (Source Journal of **Chinese Science Citation Database**).

[Link] [PDF] [Code]

◦ **3D Reconstruction**:

[17] Q. Zhang, S. Zheng *, C. Zhang, X. Wang, R. Li *. Efficient large-scale oblique image matching based on cascade hashing and match data scheduling. *Pattern Recognition*, vol. , no. , p. , 2023. (JCR Q1, IF=8.518).
[Link] [PDF]

◦ **Cloud Removal**:

[18] C. Duan, J. Pan, R. Li. Thick Cloud Removal of Remote Sensing Images Using Temporal Smoothness and Sparsity Regularized Tensor Optimization. *Remote Sensing*, vol. 12, no. 20, p. 3446, 2020. (JCR Q1, IF=**4.848**).
[Link] [PDF]

Journal Reviewers

- IEEE Transactions on Medical Imaging
- IEEE Transactions on Geoscience and Remote Sensing
- IEEE Geoscience and Remote Sensing Letters
- Engineering Applications of Artificial Intelligence
- GIScience & Remote Sensing
- Geo-spatial Information Science
- International Journal of Remote Sensing
- Pattern Recognition Letters
- Geocarto International
- Journal of Applied Remote Sensing
- Imaging Science Journal
- All Earth
- Journal of Electronic Imaging

Awards

2021 Outstanding Postgraduates, Wuhan University
2020 National Scholarship for Postgraduate Student, Ministry of Education
2020 First Class Postgraduate Scholarship, Wuhan University
2017 & 2018 National Encouragement Scholarship, Ministry of Education
2016 & 2017 Merit Student, South China University of Technology