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
- Ocean Waves

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 **20** peer-reviewed articles in international scientific journals such as ISPRS *P&RS* (IF=**12.7**), IEEE *TGRS* (IF=**8.2**), *PR* (IF=**8.0**), *APEN* (IF=**11.2**), *ECM* (IF=**10.4**) and *Energy* (IF=**9.0**), which have been cited **600+** times indexed by the Web of Science with the h-index of **11**. **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

- **Phase-resolved Wave Prediction**:

[1] R. Li, J. Zhang, X. Zhao. Phase-resolved real-time forecasting of three-dimensional ocean waves via machine learning and wave tank experiments. *Applied Energy*, 2023. (JCR Q1, IF=**11.2**). [Link] [PDF]

- **Wind Farm Wake Modeling**:

[2] R. Li, J. Zhang, X. Zhao. Multi-Fidelity Modeling of Wind Farm Wakes Based on A Novel Super-Fidelity Network. *Energy Conversion and Management*, 2022. (JCR Q1, IF=**10.4**). [Link] [PDF] [Code]

[3] R. Li, J. Zhang, X. Zhao. Dynamic Wind Farm Wake Modeling Based on a Bilateral Convolutional Neural Network and High-Fidelity LES Data. *Energy*, 2022. (JCR Q1, IF=**9.0**). [Link] [PDF] [Video]

- **Attention Mechanism**:

[4] 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*, 2021. (JCR Q1, IF=**12.7**, **ESI Hot Paper**). [Link] [PDF] [Code]

[5] 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*, 2022. (JCR Q1, IF=**8.2**, **ESI Highly Cited Paper**). [Link] [PDF] [Code]

[6] 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*, 2022. (JCR Q1, IF=**4.8**, **ESI Highly Cited Paper**). [Link] [PDF] [Code]

◦ **Vision Transformer**:

[7] 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*, 2022. (JCR Q1, IF=**12.7**, ISPRS **Best Paper** 2022, **ESI Hot Paper**, **ESI Highly Cited Paper**). [Link] [PDF] [Code]

[8] L. Wang, S. Fang, X. Meng, R. Li. Building extraction with vision transformer. IEEE *Transactions on Geoscience and Remote Sensing*, 2022. (JCR Q1, IF=**8.2**). [Link] [PDF] [Code]

[9] 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*, 2022. (JCR Q1, IF=**4.8**, **ESI Highly Cited Paper**). [Link] [PDF] [Code]

[10] 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*, 2021. (JCR Q1, IF=**5.0**). [Link] [PDF] [Code]

[11] 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*, 2022. (JCR Q1, IF=**4.8**). [Link] [PDF]

◦ **Semantic Segmentation**:

[12] 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*, 2022. (JCR Q2, IF=**3.4**). [Link] [PDF] [Code]

[13] 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*, 2022. (JCR Q1, IF=**6.0**, **ESI Highly Cited Paper**). [Link] [PDF] [Code]

[14] 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*, 2022. (JCR Q1, IF=**4.8**, **ESI Highly Cited Paper**). [Link] [PDF] [Code]

[15] 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*, 2021. (JCR Q1, IF=**5.0**). [Link] [PDF]

◦ **Hyperspectral Image Classification**:

[16] R. Li * , S. Zheng, C. Duan, Y. Yang, X. Wang. Classification of hyperspectral image based on double-branch dual-attention mechanism network. *Remote Sensing*, 2020. (JCR Q1, IF=**5.0**, **ESI Highly Cited Paper**). [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*, 2023. (JCR Q1, IF=**8.0**). [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*, 2020. (JCR Q1, IF=**5.0**). [Link] [PDF]

Journal Reviewers

- IEEE Transactions on Medical Imaging
- IEEE Transactions on Geoscience and Remote Sensing
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Circuits and Systems for Video Technology
- 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
- International Journal on Document Analysis and Recognition
- Journal of Applied Remote Sensing
- Imaging Science Journal
- All Earth
- Journal of Electronic Imaging

Awards

2023 ISPRS P&RS Best Paper 2022, International Society for Photogrammetry and Remote Sensing

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