

XIANG LI(李祥)

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WORK

University of Reading

2024.10 – now

Lecturer in Computer Science

King Abdullah University of Science and Technology

2022.12 – 2024.10

Postdoctoral Fellow, Supervisor: Mohamed Elhoseiny

New York University

2019.10 – 2022.07

Postdoctoral Fellow, Supervisor: Yi Fang

EDUCATION

University of Chinese Academy of Sciences

2014.09 – 2019.06

PhD. in Cartography and Geographic Information System, Supervisor: Tianhe Chi

New York University

2017.12 – 2019.01

Visiting PhD, Supervisor: Yi Fang, Edward Wong

Wuhan University

2010.09 – 2014.06

B.S. in Remote Sensing Science and Technology, rank: 1/80

RESEARCH INTERESTS

Remote Sensing Image Processing, 3D Computer Vision, Vision-Language Models

PEER-REVIEWED JOURNAL PAPERS

(† equal contribution, * corresponding author)

1. C Wen, Y Lin, X Qu, N Li, Y Liao, H Lin, **X Li**. RS-RAG: Bridging Remote Sensing Imagery and Comprehensive Knowledge with a Multi-Modal Dataset and Retrieval-Augmented Generation Model, arXiv 2025. PDF
2. J Zhou, W Li, Y Cao, H Cai, G Xia. **X Li***. Few-shot Oriented Object Detection with Memorable Contrastive Learning in Remote Sensing Images, IEEE Transactions on Geoscience and Remote Sensing (**TGRS**), 2025. (**top journal**, IF=8.2).
3. Y Hu, J Yuan, C Wen, X Lu, **X Li***. RSGPT: A Remote Sensing Vision Language Model and Benchmark. ISPRS Journal of Photogrammetry and Remote Sensing (**ISPRS JPRS**), 2025. (**top journal**, IF=12.7) PDF
4. H Slim, **X Li**, Y Li, M Ahmed, M Ayman, U Upadhyay, A Abdelreheem, A Prajapati, S Pothigara, P Wonka, M Elhoseiny. 3DComPaT++: An improved Large-scale 3D Vision Dataset for Compositional Recognition. **IEEE TPAMI**, minor revision (**top journal**, IF=20.8).
5. W Li, J Zhou, Y Cao, G Jin, X Zhang, **X Li**. InfRS: Incremental Few-Shot Object Detection in Remote Sensing Images. IEEE Transactions on Geoscience and Remote Sensing (**TGRS**), 2024. (**top journal**, IF=8.2).
6. H Huang, L Wang, **X Li**, S Yuan, C Wen, Y Hao, Y Fang. Learning to learn point signature for 3D shape geometry. Pattern Recognition Letters (**PRL**), 2024. PDF
7. Z He, G Fan, **X Li**, F Gong, M Liang, L Gao, M Zhou. Spatio-temporal modeling of satellite-observed CO2 columns in China using deep learning. International Journal of Applied Earth Observation and Geoinformation (**JAG**), 2024. (**top journal**, IF=7.5) PDF

8. Z He, G Fan, Z Li, S Li, L Gao, **X Li**, Z Zeng. Deep learning modeling of human activity affected wildfire risk by incorporating structural features: A case study in eastern China. **Ecological Indicators**, 2024.
9. **X Li**^{†*}, C Wen[†], Y Hu[†], Z Yuan, X Zhu. Vision-Language Models in Remote Sensing: Current Progress and Future Trends. *IEEE Geoscience and Remote Sensing Magazine (GRSM)*, 2024. (**top journal**, IF=14.6, [ESI highly cited paper](#).) PDF
10. **X Li**, C Wen, N Zhou. RS-CLIP: Zero Shot Remote Sensing Scene Classification via Contrastive Vision-Language Supervision. *International Journal of Applied Earth Observation and Geoinformation (JAG)*, 2023. (**top journal**, IF=7.5) PDF
11. W Li, J Zhou, **X Li**, Y Cao, G Jin. Few-shot object detection on aerial imagery via deep metric learning and knowledge inheritance. *International Journal of Applied Earth Observation and Geoinformation (JAG)*, 2023. (**top journal**, IF=7.5) PDF
12. C Wen, **X Li**, H Huang, Y Liu, Y Fang, 3D Shape Contrastive Representation Learning with Adversarial Examples. *IEEE Transactions on Multimedia (TMM)*, 2023. (**top journal**, IF=7.3) PDF
13. L Wang, N Zhou, H Huang, **X Li**^{*}, Y Fang. GP-Aligner: Unsupervised Non-rigid Groupwise Point Set Registration Based On Optimized Group Latent Descriptor, *IEEE Transactions on Geosciences and Remote Sensing (TGRS)*, 2022. (**top journal**, IF=8.2) PDF
14. **X Li**, L Wang, Y Fang. Unsupervised Category-Specific Partial Point Set Registration via Joint Shape Completion and Registration. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2022. (**top journal**, IF=5.2) PDF
15. X Jiang, N Zhou, **X Li**^{*}. Few-Shot Segmentation of Remote Sensing Images using Deep Metric Learning. *IEEE Geosciences and Remote Sensing Letters (GRSL)*, 2022. (IF=4.8) PDF
16. Y Du, J Yin, **X Li**, F Gao, J Yang. Accurate and efficient solution of electromagnetic scattering from randomly rough surface using MoM-SMCG with adaptive quadrature. *Electronics Letters*, 2021. (IF=1.3) PDF
17. **X Li**, L Wang, Y Fang. Geometry-Aware Segmentation of Remote Sensing Images via implicit height estimation. *IEEE Geoscience and Remote Sensing Letters (GRSL)*, 2021. (IF=4.8) PDF
18. **X Li**[†], J Deng[†], Y Fang. Few-shot Object Detection on Remote Sensing Images. *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*, 2021. (**top journal**, IF=8.2, [ESI highly cited paper](#)) PDF
19. N Zhou[†], **X Li**[†], Z Shen, T Wu, J Luo. Geo-parcel-based Change Detection Using Optical and SAR Images in Cloudy and Rainy Areas. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTAR)*, 2020. (**top journal**, IF=5.5) PDF
20. R Chen[†], **X Li**[†], Y Hu, L Peng. Road Extraction from Remote Sensing Images in Wildland-Urban Interface Areas. *IEEE Geosciences and Remote Sensing Letters (GRSL)*, 2020. (IF=4.8) PDF
21. **X Li**, M Wang, Y Fang. Height estimation from single aerial images using a deep ordinal regression network. *IEEE Geoscience and Remote Sensing Letters (GRSL)*, 2020. (IF=4.8, [ESI highly cited paper](#)) PDF
22. C Wen, **X Li**, L Peng, T Chi. Airborne LiDAR Point Cloud Classification with Graph Attention Convolution Neural Network. *ISPRS Journal of Photogrammetry and Remote Sensing (ISPRS J. P&RS)*, 2020. (**top journal**, IF=12.7) PDF
23. **X Li**, L Wang, M Wang, C Wen, N Zhou, Y Fang. Density-Aware Convolutional Networks with Context Encoding for Airborne LiDAR Point Cloud Classification, *ISPRS Journal of Photogrammetry and Remote Sensing (ISPRS J. P&RS)*, 2020. (**top journal**, IF=12.7) PDF
24. **X Li**[†], C Wen[†], L W, Y Fang. Topology Constrained Shape Correspondence, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2020. (**top journal**, IF=5.2) PDF
25. C Wen, L Yang, L Peng, **X Li**^{*}, T Chi. Directionally Constrained Fully Convolutional Neural Network For Airborne Lidar Point Cloud Classification, *ISPRS Journal of Photogrammetry and Remote Sensing (ISPRS J. P&RS)*, 2020. (**top journal**, IF=12.7) PDF
26. L Wang, **X Li**, Y Fang. Unsupervised learning of 3D point set registration. arXiv 2020.
27. S Yuan[†], **X Li**[†], Y Fang. Deepttracking-net: 3d tracking with unsupervised learning of continuous flow. arXiv 2020.
28. C Wen, S Liu, X Yao, L Peng, **X Li**, Y Hu, T Chi. A novel spatiotemporal convolutional long short-term neural network for air pollution prediction. *Science of The Total Environment*, 2019. (**top journal**, IF=9.8, [ESI highly cited paper](#)) PDF
29. Y Hu, **X Li**, N Zhou, L Yang, L Peng. A Sample Update-based Convolutional Neural Network Framework for Object Detection in Large-area Remote Sensing Images. *IEEE Geoscience and Remote Sensing Letters*

(GRSL), 2019. (IF=4.8) PDF

30. **X Li**, X Yao, Y Fang. Building-A-Nets: Robust building extraction from high-resolution Remote Sensing images with adversarial networks, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (**JSTAR**), 2018. (**top journal**, **IF=5.5**) PDF
31. Y Hu, L Peng, **X Li**, X Yao, H Lin, T Chi. A novel evolution tree for analyzing the global energy consumption structure. Energy, 2018. (**top journal**, **IF=9.0**) PDF
32. **X Li**, L Peng, X Yao. S Cui, Y Hu, C You, T Chi. Long short-term memory neural network for air pollutant concentration predictions: Method development and evaluation, Environmental Pollution (**EP**), 2017. (**top journal**, **IF=8.9**, **ESI highly cited paper**) PDF
33. H Tian, W Li, M Wu, N Huang, G Li, **X Li**, Z Niu, Dynamic monitoring of the largest freshwater lake in China using a new water index derived from high spatiotemporal resolution Sentinel-1A data. Remote Sensing, 2017. (IF=5.0) PDF
34. **X Li**, L Peng, Y Hu, J Shao, T Chi. Deep learning architecture for air quality predictions, Environmental Science and Pollution Research, 2016. (IF=5.8) PDF

PEER-REVIEWED CONFERENCE PAPERS

35. **X Li**, Y Tao, S Zhang, S Liu, Z Xiong, C Luo, L Liu, M Pechenizkiy, X Zhu, T Huang. REOBench: Benchmarking Robustness of Earth Observation Foundation Models, arXiv 2025. PDF
36. T Huang, H Hu, Z Zhang, G Jin, **X Li**, L Shen, T Chen, L Liu, Q Wen, Z Wang, S Liu. Stable-SPAM: How to Train in 4-Bit More Stably than 16-Bit Adam, arXiv 2025. PDF
37. Y Zhou, M Lan, **X Li**, Y Ke, X Jiang, L Feng, W Zhang. GeoGround: A unified large vision-language model for remote sensing visual grounding, arXiv 2024. PDF
38. **X Li**, J Ding, M Elhoseiny. VRSBench: A Versatile Vision-Language Benchmark Dataset for Remote Sensing Image Understanding. Thirty-eighth Annual Conference on Neural Information Processing Systems (**NeruIPS**), 2024. PDF
39. M Ahmed, **X Li**, M Elhoseiny. 3DComPaT200: Language Grounded Large-Scale 3D Vision Dataset for Compositional Recognition. Thirty-eighth Annual Conference on Neural Information Processing Systems (**NeruIPS**), 2024.
40. **X Li**[†], Jian Ding[†], Z Chen, M Elhoseiny. Uni3DL: Unified Model for 3D and Language Understanding. The European Conference on Computer Vision (**ECCV**) 2024. PDF
41. J Chen, D Zhu, X Shen, **X Li**, Z Liu, P Zhang, R Krishnamoorthi, V Chandra, Y Xiong, M Elhoseiny. MiniGPT-v2: Large Language Model as a Unified Interface for Vision-Language Multi-task Learning. arXiv. PDF
42. D Zhu, J Chen, X Shen, **X Li**, M Elhoseiny. MiniGPT-4: Enhancing Vision-Language Understanding with Advanced Large Language Models. International Conference on Learning Representations (**ICLR**) 2024 (**>24K starts in GitHub**). PDF
43. J Chen, D Zhu, K Haydarov, **X Li**, M Elhoseiny. Video chatcaptioner: Towards the enriched spatiotemporal descriptions, arXiv 2023. PDF
44. F Khan[†], **X Li**[†], A Temple, M Elhoseiny. FishNet: A Large-scale Dataset and Benchmark for Fish Recognition, Detection, and Functional Traits Prediction. International Conference on Computer Vision (**ICCV**), 2023. PDF
45. X Shen, **X Li**, M Elhoseiny. MoStGAN: Video Generation with Temporal Motion Styles, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023. PDF
46. S Yuan[†], **X Li**[†], H Huang, Y Fang. Meta-Det3D: Learn to Learn Few-Shot 3D Object Detection. Asian Conference on Computer Vision (**ACCV**), 2022, **Oral**. PDF
47. **X Li**^{*†}, C Wen[†], H Huang, Y Fang. Unsupervised 3D Shape Representation Learning using Normalizing Flow. Asian Conference on Computer Vision (**ACCV**), 2022. PDF
48. H Huang, **X Li**, L Wang, Y Fang. 3D-MetaConNet: Meta-learning for 3D Shape Classification and Segmentation. International Conference on 3D Vision (**3DV**) 2021. PDF
49. H Huang, J Chen, **X Li**, L Wang, Y Fang. Robust Image Matching By Dynamic Feature Selection. British Machine Vision Conference (**BMVC**), 2020. PDF
50. S Yuan[†], **X Li**[†], Y Fang. 3DMotion-Net: Learning Continuous Flow Function for 3D Motion Prediction. The IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), 2020. PDF
51. L Wang[†], **X Li**[†], Y Fang. Few-shot Learning of Part-specific Probability Space for 3D Shape Segmentation, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020. PDF

52. J Chen, L Wang, **X Li**, Y Fang. Arbicon-Net: Arbitrary Continuous Geometric Transformation Networks for Image Registration, Neural Information Processing Systems (**NeurIPS**), 2019. PDF
53. Y Hu, Y Chen, **X Li**, J Feng. Dynamic Feature Fusion for Semantic Edge Detection, International Joint Conferences on Artificial Intelligence (**IJCAI**), 2019. PDF
54. **X Li**, L Wang, Y Fang. PC-Net: Unsupervised Point Correspondence Learning with Neural Networks, International Conference on 3D Vision (**3DV**), 2019. PDF
55. **X Li**, H Cui, J Rizzo, E Wong, Y Fang. Cross-Safe: A computer vision-based approach to make all intersection-related pedestrian signals accessible for the visually impaired, Computer Vision Conference (**CVC**), 2019. (**best student paper nomination**) PDF

TEACHING

CSMBD-24/25: Big Data and Cloud Computing

SERVICES

- Guest Editor for **IEEE GRSM**, **IEEE JSTARS**, **GSIS**.
- Workshop organizer: Challenge organizers of the 1st & 2nd workshop on compositional 3D vision and 3DCoMPaT dataset challenge (CVPR 2023/2024).
- Journal Review: IEEE TPAMI, IEEE TIP, IEEE TVCG, IEEE TGRS, IEEE TCSVT, RSE, ISPRS JPRS, etc.
- Area Chair for ICLR 2026.
- Conference Review: CVPR 2022/2023/2024/2025, ICCV 2021/2023/2025, ECCV 2022/2024, NeruIPS 2023/2024/2025, ICLR 2024/2025, AAI 2022/2023/2024, etc.

HONORS

- **2025, IEEE GRSS Early Career Award.**
- **2021, ICCV Outstanding Reviewer**
- **2020 & 2021, NYU Abu Dhabi Postdoctoral Non-travel Award**
- **2018, Outstanding research paper award (top 30), RADI, CAS.**
- **2017, National Scholarship**
- **2017, China Scholarship Council scholarship**
- 2012, Seagate Scholarship, Wuhan University
- **2011, National Scholarship**