Fengpeng Li

Faculty of Science and Technology | State Key Laboratory of Internet of Things for Smart City
University of Macau, Taipa, Macau SAR| fengpeng.li@connect.umac.mo | +8613207135175

Education

S.K.Lee Honors College, China University of Geosciences (Wuhan), Wuhan, Hubei, PRC, China, Sept 2014 – June 2018

- BS in Remote Sensing Science and Technology. **Advisor: IEEE Fellow Prof. Lizhe Wang**

School of Computer Science, China University of Geosciences (Wuhan), Wuhan, Hubei, PRC, China, Sept 2018 – June 2021

- MS in Compute Science and Technology (Exempt from Admission Exam). **Advisor: IEEE Fellow Prof. Lizhe Wang**

Faculty of Science and Technology & State Key Laboratory of Internet of Things for Smart City, University of Macau, Macau SAR Aug 2021 – Dec 2025

- PhD in Compute Science and Technology (Full scholarship). **Advisor: Prof. Jiantao Zhou**

Research Interests

- **Trustworthy Machine Learning:**The deep model's robustness against safety threats including label noise, adversarial attacks, privacy information leaking and prompt attacks for LLMs and Diffusion Models.
- **Remote Sensing image processing:** Functional zone classification and earth observation information processing with multi-modality data.

Research Experience

Faculty of Science and Technology & State Key Laboratory of Internet of Things for Smart City, University of Macau, PhD in Computer Science and Technology Aug 2021 – Dec 2025

- Robust methods to protect the deep model from label noise.
- Defense strategies against adversarial threats to deep models.
- Robust fine-tuning to prevent illegal information leaking of LLM and multi-modality models.

School of Computer Science, China University of Geosciences (Wuhan), Master in Computer Science and Technology Sept 2018 – June 2021

- High-resolution remote sensing image scene classification with deep learning methods and attention mechanisms with limited training samples.
- Developing unsupervised representation method for high-resolution remote sensing image scene classification.
- Using multi-source data, such as remote sensing images and street view images, with multi-modal model analysis of urban functional zones, such as urban villages.
- Developing deep-learning-based method for tiny object segmentation on high-resolution remote sensing image and Unmanned Aerial Vehicle image.

L.S.K. Honors School, China University of Geosciences (Wuhan), BS in Remote Sensing Science and Technology Sept 2014 – June 2018

- Developing object detection with for images with complex backgrounds to protect electricity network equipment from unidentified objects with image generation.

Aerospace Information Research Institute, Chinese Academy of Sciences, Guest Student July 2015 – Sept 2015&July 2016 – Sept 2016

- Participating in editing books about geoscience, big data mining, and summarizing existing data mining algorithms.

Honors and Awards

National scholarship for graduate students 2020

Outstanding Graduates of China University of Geosciences(Wuhan) 2021

Outstanding Master Thesis of China University of Geosciences(Wuhan) 2021

Champion of Global Multimedia Deepfake Detection Challenge 2024

UM Macao PhD Assistant scholarship Aug 2021- Dec 2025

China Academy of Science Earth Science Elite Scholarship, third-class scholarship 2015&2016

China Academy of Science Earth Science Elite Scholarship,first-class scholarship 2017

National Mathematical Modeling Contest for College Students, first prize in the Hubei province contest area 2017

Publications

First Author

F. Li, K. M. Li, Q. Wang, B, Han and J. T. Zhou*, DAT: Improving Adversarial Robustness via Generative Amplitude Mix-up in Frequency Domain, Proceedings of International Conference on Learning Representations (ICLR-26), 2026. (Top 3 Conference of Machine Learning) 2026

F. Li, K. M. Li, Q. Z. Wang, B. Han, J. Y. Tian and J. T. Zhou*, RML++: Regroup Median Loss for Combating Label Noise, Int. J. Comput. Vis., pp. 1-22, 2025. (CCF-A, JCR Q1) 2025

F. Li, K. M. Li, H. Wu, J. Y. Tian and J. T. Zhou*, Towards Robust Learning via Core Feature-aware Adversarial Training, IEEE Trans. Inf. Forensics Secur., 2025 (CCF-A, JCR Q1) 2025

F. Li, K. M. Li, J. Y. Tian and J. T. Zhou*, DAT: Improving Adversarial Robustness via Generative Amplitude Mix-up in Frequency Domain, Proceedings of Annual Conference on Neural Information Processing Systems (NeurIPS-24), 2024. (CCF-A) 2024

F. Li, K. M. Li, J. Y. Tian and J. T. Zhou*, Regroup Median Loss for Combating Label Noise, Proceedings of AAAI Conference on Artificial Intelligence (AAAI-24), 2024 (Oral) (CCF-A) 2024

F. Li, R. Feng, W. Han, and L. Wang*, High-resolution remote sensing image scene classification via key filter bank based on convolutional neural network, IEEE Transactions on Geoscience and Remote Sensing, vol.58, no.11, pp. 8077-8092, 2020. (CCF-B, JCR Q1) 2020

F. Li, R. Feng, W. Han, L. Wang*, Ensemble model with cascade attention mechanism for high-resolution remote sensing image scene classification, Optics Express, vol. 28, no. 12, pp. 22358-22387, 2020. (JCR Q1) 2020

F. Li, R. Feng, W. Han, L. Wang*, An augmentation attention mechanism for high-spatial-resolution remote sensing image scene classification, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol.13, pp.3862-3878,2020. (JCR Q1) 2020

F. Li, J. B. Li, W. Han, R. Feng, and L. Wang*, Unsupervised Representation High-Resolution Remote Sensing Image Scene Classification via Contrastive Learning Convolutional Neural Network, Photogrammetric Engineering & Remote Sensing, vol.87, no.14, pp. 577-591, 2021. (JCR Q3) 2021

Co-author

K. Li, Q. Wang, Y. Wang, **F. Li**, J. Liu, B. Han, J. T. Zhou, LLM Unlearning with LLM Beliefs, Proceedings of International Conference on Learning Representations (ICLR-26), 2026. (Top 3 Conference of Machine Learning) 2026

W. Han, R. Fan, L. Wang*, R. Feng, **F. Li**, Ze Deng and X. Chen, Improving Training Instance Quality in Aerial Image Object Detection with A Sampling-balance based Multi-stage Network, IEEE Transactions on Geosciences and Remote Sensing, DOI:10.1109/TGRS.2020.3038803. (JCR Q1) 2020

W. Han, J. Chen, L. Wang, R. Feng, **F. Li**, L. Wu, T. Tian, and J. Yan: Methods for small, weak object detection in optical high-resolution remote sensing images: A survey of advances and challenges. IEEE Geosciences and Remote Sensing Magazine, DOI: 10.1109/GRSM.2020.3041450. (JCR Q1) 2020

R. Fan, **F. Li**, W. Han, J. Yan, J. Li, and L. Wang, Fine-scale urban informal settlements mapping by fusing remote sensing images and building data via a transformer-based multimodal fusion network. IEEE Transactions on Geoscience and Remote Sensing, vol.60, no.16, pp. 1-16, 2022. (JCR Q1) 2022

R. Fan, J. Li, **F. Li**, W. Han, and L. Wang, Multilevel spatial-channel feature fusion network for urban village classification by fusing satellite and street view images. IEEE Transactions on Geoscience and Remote Sensing, vol.60, no.13, pp. 1-13, 2022. (JCR Q1) 2022

Professional Activities

Journal and Conference Reviewer

- **Journals:** IEEE Trans. Dependable Secure Comput., IEEE Trans. Inf. Forensics Secur., and Eng. Appl. Artif. Intell..
- **Conference:** NeurIPS, ICML, ICLR, CVPR, ECCV, AAAI, AISTATS, APSIPA, .

Teaching Assistant

- CISC Programming Science Sept 2021-Dec 2021.
- CIVL1000 computer Science Jan 2024-May 2024.
- CISC7202 Tools for Machine Learning Aug 2021-Dec 2021& Aug 2022-Dec 2022 & Aug 2023-Dec 2023 & Aug 2024-Dec 2024
- CISC7008 Machine Learning and Application in Ocean Science Jan 2025-May 2025.

Research Projects

Macau Science and Technology Development Fund (FDCT)

- "Research and industrialization of key technologies for multimedia information forensics over online social networks", FDCT/022/2022/A1, Sept 2022-Sept 2025 (Participate).
- "Phenotype based ASD Diagnosis using Artificial Intelligence Technology", FDCT/0072/2020/AMJ, Oct. 2021 – Oct. 2024 (Participate).

Technologies

English Level: CET-6 473

Technologies: C++, C, Matlab, Python, Microsoft SQL Server