Hongruixuan Chen

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Address: Department of Complexity Science and Engineering, Graduate School of Frontier Sciences,

The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8561, Japan

EDUCATION & GPA			
Graduate School of Frontier Sciences, The University of Tokyo Chiba, Japan		Oct., 2022-Spet., 2025	
• Ph.D. in <i>Complexity Science and Engin</i>	neering Supervisor: Prof. Naoto Yokoya		
State Key Laboratory of Information Engineering in Survey, Mapping and Remote		Sept., 2019-June, 2022	
Sensing, Wuhan University Wuhan, Chin	a		
• <i>M.E</i> in <i>Photogrammetry and Remote S</i>	ensing Supervisor: Prof. Chen Wu		
School of Resources and Environmental Engineering, Anhui University Hefei, China		Sept., 2015-June, 2019	
• B.E in Geomatics Engineering	GPA : 94.4/100 (ranking: 1/230)		
WORK/OVERSEAS EXPERIENCE			
Photogrammetry and Remote Sensing, ETH Zürich Zürich, Switzerland		Jan., 2024-July., 2024	
• Academic Visitor	Host: Prof. Konrad Schindler		
Geoinformatics Team, RIKEN AIP Chiba, Japan		May, 2023-Apr., 2024	
• Research Part-timer	Host: Prof. Naoto Yokoya		
Beyond AI Project, The University of Tokyo Chiba, Japan		Oct., 2022-Apr., 2023	
Research Assistant	Host: Prof. Masashi Sugiyama		
The United Nations Satellite Centre (UNOSAT) Genevan, Switzerland		May, 2021-May, 2022	
• Trainee	Host: Mr. Lars Bromley, Dr. Sofia Vallecorsa		

RESERCH INTERESTS

Remote Sensing Image Interpretation and Analysis; Image Processing; Change Detection; Damage Assessment; Deep Learning; Machine Learning; Transfer Learning; Domain Adaptation; Weakly Supervised Learning

PUBLICATIONS

- H. Chen, J. Song, C. Wu, B. Du, and N. Yokoya, "Exchange means change: An unsupervised single-temporal change detection framework based on intra- and inter-image patch exchange," *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 206, pp. 87–105, 2023. [link]
- [2] H. Chen, N. Yokoya, and M. Chini, "Fourier Domain Structural Relationship Analysis for Unsupervised Multimodal Change Detection," *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 198, pp. 99–114, 2023. (ESI highly cited paper) [link]
- [3] H. Chen, N. Yokoya, C. Wu, and B. Du, "Unsupervised Multimodal Change Detection Based on Structural Relationship Graph Representational Learning," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 60, pp. 1–18, 2022. [link]
- C. Wu, H. Chen, B. Du, and L. Zhang, "Unsupervised Change Detection in Multitemporal VHR Images Based on Deep Kernel PCA Convolutional Mapping Network," *IEEE Transactions on Cybernetics*, vol. 52, no. 11, pp. 12084–12098, 2022.
 [link]
- [5] H. Chen, C. Wu, B. Du, L. Zhang, and L. Wang, "Change Detection in Multisource VHR Images via Deep Siamese Convolutional Multiple-Layers Recurrent Neural Network," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 58, no. 4, pp. 2848–2864, 2020. (ESI highly cited paper) [link]
- [6] C. Han, C. Wu, M. Hu, J. Li and H. Chen, "C2F-SemiCD: A Coarse-to-Fine Semi-Supervised Change Detection Method Based on Consistency Regularization in High-Resolution Remote Sensing Images," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 62, pp. 1-21, 2024. [link]
- [7] C. Han, C. Wu, H. Guo, M. Hu, J. Li, and H. Chen, "Change Guiding Network: Incorporating Change Prior to Guide Change Detection in Remote Sensing Imagery," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 16, pp. 8395-8407, 2023. [link]
- [8] C. Han, C. Wu, H. Guo, M. Hu, and H. Chen, "HANet: A Hierarchical Attention Network for Change Detection with Bitemporal Very-High-Resolution Remote Sensing Images," *IEEE Journal of Selected Topics in Applied Earth Observations* and Remote Sensing, vol. 16, pp. 3867-3878, 2023. [link]
- [9] C. Wu, Y. Guo, H. Guo, J. Yuan, L. Ru, H. Chen, B. Du, and L. Zhang, "An Investigation of Traffic Density Changes inside Wuhan during the COVID-19 Epidemic with GF-2 Time-Series Images," *International Journal of Applied Earth Observation* and Geoinformation, vol. 103, pp. 102503, 2021. [link]

- [10] H. Chen, J. Song, N. Yokoya, "Change Detection Between Optical Remote Sensing Imagery and Map Data via Segment Anything Model (SAM)," *Proceeding of the IEEE International Geoscience and Remote Sensing Symposium 2024*, Athens, Greece, pp. 1–4, 2024. (Oral) [link]
- [11] N. Yokoya, J. Xia, J. Song, and, C. Broni-Bediako, H. Chen, "OpenEarthMap Benchmark Suite and Its Applications," Proceeding of the IEEE International Geoscience and Remote Sensing Symposium 2024, Athens, Greece, pp. 1–4, 2024. (Oral)
- J. Song, H. Chen, N. Yokoya, "SyntheWorld: A Large-Scale Synthetic Dataset for Land Cover Mapping and Building Change Detection," *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2024*, pp. 8287-8296, 2024. (Poster) [link]
- [13] H. Chen, E. Nemni, S. Vallecorsa, X. Li, C. Wu, L. Bromley, "Dual-Tasks Siamese Transformer Framework for Building Damage Assessment," *Proceeding of the IEEE International Geoscience and Remote Sensing Symposium 2022*, Kuala Lumpur, Malaysia, pp. 1–4, 2022. (Oral) [link]
- [14] H. Chen, C. Wu, B. Du, and L. Zhang, "Deep Siamese Multi-scale Convolutional Network for Change Detection in Multi-Temporal VHR Images," 2019 10th International Workshop on the Analysis of Multitemporal Remote Sensing Images, Shanghai, China, pp. 1–4, 2019. (Oral) [link]

RESEARCH FUNDINGS

• Grant-in-Aid for JSPS Research Fellows (1,500,000 JPY) [link]	Apr.,2024
• AI Center Fusion Research Promotion Fund (2,000,000 JPY) [link]	July,2023
• GSFS Challenging New Area Doctoral Research Grant (600,000 JPY) [link]	June,2023
• Microsoft Research Asia Collaborative Research Program Grant (10,000 USD)[link]	Mar.,2023
• China National Innovative Research Project for Undergraduates (10,000 CNY)	Nov.,2016
AWARDS & HONORS	
• JSPS Research Fellowships for Young Scientists DC2 (Selection ratio: 17.1%) [link]	Apr.,2024
• Young Researchers' Exchange Programme Special Exchange Grant [link]	Dec.,2023
• The University of Tokyo Fellowship [link]	Oct., 2022
• Outstanding Graduates of Wuhan University	June, 2022
• Wang Zhizhuo Innovation Talent Scholarship (Top 1‰) [link]	Dec., 2021
• National Scholarship for Postgraduates (Top 1%) [link]	Oct., 2021
• National Scholarship for Postgraduates (Top 1%) [link]	Oct., 2020
• First Prize of Wuhan University Scholarship for Excellent Postgraduate (Top 5%)	Oct., 2020
• LIESMARS Scholarship for Excellent First-Year Postgraduates (Top 9 in 169)	Sept.,2019
• Excellent Graduate of Anhui Province, China (Top 1%)	May, 2019
• First Prizes of Academic Scholarship of Anhui University (Top 3%)	Oct., 2018
• National Scholarship for Undergraduates (Top 1%)	Oct., 2017
• Second Prize of Esri Cup GIS Software Development Contest in China (Top 5%)	Nov., 2018
• Outstanding Prize of National Geomatics Contest in Programming (Top 2%)	July, 2018
• Meritorious Winner of the U.S. Mathematical Contest in Modeling	Apr., 2018
• Second Prize of China National Mathematical Contest in Modeling (Top 5%)	Nov., 2017

SKILLS, ACTIVITIES & INTERESTS

- Reviewer: IEEE Transactions on Image Processing, IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Geoscience and Remote Sensing, IEEE Geoscience and Remote Sensing Letters, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, ISPRS Journal of Photogrammetry and Remote Sensing, Pattern Recognition, International Journal of Applied Earth Observation and Geoinformation, Artificial Intelligence Review, International Journal of Digital Earth, Neurocomputing, Geocarto International, European Journal of Remote Sensing, Transactions on Emerging Telecommunications Technologies, Scientific Reports, IEEE Access, 2024 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)
- Organizer: OpenEarthMap Land Cover Mapping Few-Shot Challenge in CVPR Workshop 2024
- Language Test: *IELTS* (R/L/S/W: 9.0/7.5/6.0/6.5, Overall: 7.5), *TOEFL* (R/L/S/W: 30/23/19/29, Overall: 101), *GRE* (160/170/3.5, Overall: 333.5)
- **Programming:** Python, Java, Android, VB.Net, C#, C/C++, R, SQL (PostgreSQL+PostGIS), Latex
- Deep Learning Framework: Pytorch, Tensorflow, Keras
- Software: MATLAB, ENVI, ArcGIS, eCognition, GoogleEarth, SPSS, Lingo, Geoda, AutoCAD, Photoshop, CityEngine, SketchUp, proficient in PowerPoint