

CURRICULUM VITAE

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EDUCATION

- Ph.D. in Geography and Resource Management, Department of Geography and Resource Management, The Chinese University of Hong Kong, 2014.08-2018.09
- Visiting student, Remote Sensing Research Centre, School of Earth and Environmental Sciences, The University of Queensland, 2018.02-04
- Visiting student, Telecommunications & Remote Sensing Laboratory, Department of Electrical, Biomedical and Computer Engineering, University of Pavia, 2017.10-2018.01
- M.E. in Electrical and Communication Engineering, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, 2010.09-2013.07
- B.E. in Remote Sensing Science and Technology, School of Remote Sensing and Information Engineering, Wuhan University, 2006.09-2010.06

PROFESSIONAL HISTORY

- Post-Doctoral Researcher, Department of Geography, The Ohio State University, 2019.03-present
- Research Assistant, Department of Geography and Resource Management, The Chinese University of Hong Kong, 2018.10-2019.03
- Teaching Assistant, Department of Geography and Resource Management, The Chinese University of Hong Kong, 2014.08-2018.07
- Research Assistant, Shenzhen Research Institute, The Chinese University of Hong Kong, 2013.09-2014.07
- Research Assistant, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, 2011.09-2013.06

HONORS AND AWARDS

- Recognized Reviewing Award, ISPRS Journal of Photogrammetry and Remote Sensing, 2019
- Best Paper Award, The First BIM-CIM Innovation Competition for College Students in Guangdong-Hongkong-Macao Greater Bay Area, 2018
- Award of Outstanding Contribution in Reviewing, Remote Sensing of Environment, 2017
- Best Paper Award, 19th International Conference on Geoscience and Remote Sensing, Rome, Italy, 2017
- Global Scholarship Award for Research Excellence, The Chinese University of Hong Kong, 2016
- Merit Student of University of Chinese Academy of Sciences, 2013
- Merit Student of Graduate University of Chinese Academy of Sciences, 2011
- National Computer Rank Examination Certificate Level 3 (database technology), 2009

- National Computer Rank Examination Certificate Level 2 (C++), 2008
- The First-class Scholarship of Wuhan University, 2007

PUBLICATIONS

- **Zhao, Y.**, Liu, D., & Wei, X. (In press). Monitoring cyanobacterial harmful algal blooms at high spatiotemporal resolution by fusing Landsat and MODIS imagery. *Environmental Advances*. <https://doi.org/10.1016/j.envadv.2020.100008>
- **Zhao, Y.**, Huang, B., Liu, D., & He, Q. (In press). A sparse representation-based fusion model for improving daily MODIS C6.1 aerosol products on a 3 km grid. *International Journal of Remote Sensing*. <https://doi.org/10.1080/01431161.2020.1823040>
- Lin, L., Chan, T. O., Ge, E., Wang, X., **Zhao, Y.**, Yang, Y., ... & Luo, M. (2020). Effects of urban land expansion on decreasing atmospheric moisture in Guangdong, South China. *Urban Climate*, 32, 100626.
- Lin, L., Luo, M., Chan, T. O., Ge, E., Liu, X., **Zhao, Y.**, & Liao, W. (2019). Effects of urbanization on winter wind chill conditions over China. *Science of the Total Environment*, 688, 389-397.
- **Zhao, Y.**, Huang, B., & Song, H. (2018). A robust adaptive spatial and temporal image fusion model for complex land surface changes. *Remote sensing of environment*, 208, 42-62.
- **Zhao, Y.**, Huang, B., Marinoni, A., & Gamba, P. (2018). High spatiotemporal resolution PM2.5 concentration estimation with satellite and ground observations: A case study in New York City. In *2018 IEEE International Conference on Environmental Engineering (EE)* (pp. 1-5). IEEE.
- Li, D., Han, Q., & **Zhao, Y.** (2018). A spatiotemporal fusion algorithm for mono-temporal remotely sensed images with high spatial resolution. *Computer Engineering and Applications*, 54(5): 191-199.
- **Zhao, Y.**, & Huang, B. (2017). A Hybrid Image Fusion Model for Generating High Spatial-Temporal-Spectral Resolution Data Using OLI-MODIS-Hyperion Satellite Imagery. *World Academy of Science, Engineering and Technology, International Journal of Geological and Environmental Engineering*, 11(9), 843-848. (Best Paper Award)
- Huang, B., & **Zhao, Y.** (2017). Research Status and Prospect of Spatiotemporal Fusion of Multi-source Satellite Remote Sensing Imagery. *Acta Geodaetica et Cartographica Sinica*, 46(10): 1492-1499.
- **Zhao, Y.**, & Huang, B. (2017). Integrating MODIS and MTSAT-2 to generate high spatial-temporal-spectral resolution imagery for real-time air quality monitoring. In *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)* (pp. 6122-6125). IEEE.
- **Zhao, Y.**, & Huang, B. (2016). A Two-step Spatio-Temporal satellite image Fusion Model for temporal changes of various LULC under one-pair prior images scenario. In *2016 IEEE International Conference on Signal Processing, Communications and Computing (ICSPCC)* (pp. 1-5). IEEE.
- **Zhao, Y.**, Shan, X., & Tang, P. (2014). Spatial consistency analysis and relative geometric correction of low spatial resolution multi-source remote sensing data. *Remote Sensing Technology and Application*, 29, 155-163.

- **Zhao, Y.**, Shan, X., & Tang, P. (2013). Modis data-based spatial consistency correction of low-resolution multi-source remote sensing imagery. In *2013 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)* (pp. 2524-2527). IEEE.

PATENT

- Shan, X., **Zhao, Y.**, Tang, P., Zheng, K., Zhang, Z., Tang, L., & Feng, Z. (2016). A spatial consistency correction method for multi-source low spatial resolution remote sensing imagery. Chinese Patent CN103413272B.

COMPUTER SOFTWARE COPYRIGHTS

- Institute of Remote Sensing Applications, Chinese Academy of Sciences. Remote Sensing Image Fusion Software 1.0. Registration number: 2013SR005851. Copyright Protection Center of China. (Undertook 95% programming workload)
- Huang, B., & **Zhao, Y.** Image Fusion Analyst Software 1.0. Registration number: 2016SR322445. Copyright Protection Center of China.

PROJECT AND INTERNSHIP EXPERIENCES

● **PROJECT EXPERIENCES**

- Title: Strengthening agricultural geospatial education and research at Central State University
Funding source: United States Department of Agriculture
Supporting institution: Central State University and The Ohio State University
Responsibility: 1. Developing spectral indices based on Landsat and MODIS imagery to delineate Cyanobacteria-rich Harmful Algal Blooms (CyanoHABs); 2. Fusing Landsat and MODIS derived CyanoHAB images to generate fine-and-frequent CyanoHAB indices for high spatiotemporal resolution monitoring.
- Title: Small unmanned aerial vehicles and artificial intelligence to manage invasive forest pests
Funding source: Center for Applied Plant Sciences, The Ohio State University
Supporting institution: The team SMART (Strategic Modern Approaches for Resilient Trees), The Ohio State University
Responsibility: 1. Spectral analysis of beech trees in northern Ohio with different degrees of Beech Leaf Disease (BLD) based on NAIP, Landsat-8, and Sentinel-2 imagery; 2. Spatial risk mapping of BLD based on satellite, *in situ*, climatic, and topographic data using different machine learning methods.
- Title: Multi-resolution spatial-temporal remote sensing image fusion: models and methods
Funding source: National Natural Science Foundation of China
Supporting institution: Shenzhen Research Institute, The Chinese University of Hong Kong
Responsibility: Research on spatial-temporal satellite image fusion algorithms.
- Title: Research of fast and automatic fusion technology of high-resolution remote sensing images
Funding source: National Science and Technology Major Project
Supporting institution: Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

Responsibility: 1. Research on pan-sharpening algorithm for high spatial resolution panchromatic and multi-spectral satellite images; 2. Image fusion software development.

- Title: Rapid pre-processing of multi-scale remote sensing data as required

Funding source: National High Technology Research and Development Program of China

Supporting institution: Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

Responsibility: 1. Geometric accuracy evaluation and spatial consistency correction of multi-source low spatial resolution satellite images (including MODIS, AVHRR, FY-3/VIRR, FY-3/MERSI, FY-2/VISSR); 2. Building an automatic spatial consistency correction prototype system for multi-source remote sensing images.

- Title: Extraction of geological disaster information based on high-resolution polarimetric interferometric SAR and multispectral images

Funding source: National High Technology Research and Development Program of China

Supporting institution: Wuhan University

Responsibility: Extracting line features of multi-source remote sensing images (including SAR and optical remote sensing images).

● **INTERNSHIP EXPERIENCES**

- Fieldworks for leaf area index measurement in Mai Po Nature Reserve, Hong Kong, China
- Synchronous filed observation with FY-3A/B satellites in the Chinese satellite radiometric calibration filed (Dunhuang Gobi) for the radiometric calibration of FY-3A/B
- Land use mapping based on the image interpretation of QuickBird and SPOT images and fieldworks in Wuhan, China
- 4D (DEM, DOM, DLG, DRG) product generation using aerial images in Xianning, China

TEACHING ASSISTANCE EXPERIENCES AT CUHK

- 2017-18, Decoding Cities; China's Mega-projects in the New Millennium
- 2016-17, Remote Sensing of Environment; Introduction to GIS; China's Mega-projects in the New Millennium
- 2015-16, Remote Sensing of Environment; Climate, Energy and Life; Field Studies in London and Amsterdam
- 2014-15, Earth as Seen from Space; Decoding Cities; Field Studies in Gansu and Qinghai Province, China

PROFESSIONAL SKILLS

- Programming: MATLAB, Python, IDL, C/C++, C#
- Software: ENVI, SNAP, ERDAS, PCI, ArcGIS
- Libraries: GDAL, OpenCV, NumPy, Pandas