

Jing MIAO

Ph.D. Student in Geography

Department of Geography

University at Buffalo, The State University of New York

jingmiao@buffalo.edu

jingmiao7.github.io

+1 716 612 0086

Education

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| 2023– | Ph.D. Student in Geography
Advisor: Prof. Le Wang
Research Topics: Mangrove Forests, Remote Sensing | University at Buffalo
Buffalo, NY, USA |
| 2020–23 | M.S. in Geo-information and Smart City
Advisor: Dr. Junjie Wang
GPA: 3.66/4.0
Thesis on Retrieval of mangrove canopy equivalent water thickness using multiple satellite-based observations and a hybrid model. | Shenzhen University
Shenzhen, China |
| 2016–20 | B.E. in Surveying and Mapping Engineering
GPA: 3.89/5.0
Thesis on Recognition of Vertical Band Spectrum of Mountain Tai based on DEM-RVI-land cover map. | Shandong Agricultural University
Tai'an, China |

Appointments

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| 2026– | Research Assistant | Supervisor: Prof. Le Wang, University at Buffalo |
| 2023–25 | Teaching Assistant | Department of Geography, University at Buffalo |

Publications

Journal Articles

** As the corresponding author. 9 peer-reviewed papers, h-index = 9, 402 citations according to Google Scholar as of April 27, 2026.*

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| 2026 | Miao, J. & Wang, L.*. (2026). Innovative Phenological Feature Extraction for Enhanced Mangrove Species Mapping Using High-Temporal Harmonized Landsat and Sentinel-2 Imagery. (under revision) |
| 2026 | Miao, J. & Wang, L.*. (2026). Quantified Everglades mangrove forest disturbance in response to Hurricane Irma. (manuscript) |
| 2024 | Miao, J., Wang, J.*, Zhao, D., Shen, Z., Xiang, H., Gao, C., & Wu, G. (2024). Modeling strategies and influencing factors in retrieving canopy equivalent water thickness of mangrove forest with Sentinel-2 image. <i>Ecological Indicators</i> , 158, 111497.
doi:10.1016/j.ecolind.2023.111497 |
| 2023 | Shen, Z., Miao, J., Wang, J., Zhao, D., Tang, A., & Zhen, J*. (2023). Evaluating Feature Selection Methods and Machine Learning Algorithms for Mapping Mangrove Forests Using Optical and Synthetic Aperture Radar Data. <i>Remote Sensing</i> , 15(23), 5621.
doi:10.3390/rs15235621 |

- 2022 Miao, J., Zhen, J., Wang, J.*, Zhao, D., Jiang, X., Shen, Z., & Wu, G. (2022). Mapping Seasonal Leaf Nutrients of Mangrove with Sentinel-2 Images and XGBoost Method. *Remote Sensing*, 14(15), 3679. doi:10.3390/rs14153679
- 2022 Jiang, X., Zhen, J., Miao, J., Zhao, D., Shen, Z., Jiang, J., & Wang, J*. (2022). Newly-developed three-band hyperspectral vegetation index for estimating leaf relative chlorophyll content of mangrove under different severities of pest and disease. *Ecological Indicators*, 140, 108978. doi:10.1016/j.ecolind.2022.108978
- 2022 Zhao, D., Wang, J.*, Miao, J., Zhen, J., Wang, J., Gao, C., & Wu, G. (2022). Spectral features of Fe and organic carbon in estimating low and moderate concentration of heavy metals in mangrove sediments across different regions and habitat types. *Geoderma*, 426, 116093. doi:10.1016/j.geoderma.2022.116093
- 2022 Zhao, D., Zhen, J., Zhang, Y., Miao, J., Shen, Z., Jiang, X., & Wu, G. (2022). Mapping mangrove leaf area index (LAI) by combining remote sensing images with PROSAIL-D and XGBoost methods. *Remote Sensing in Ecology and Conservation*. doi:10.1002/rse2.289
- 2022 Zhao, D., Wang, J., Jiang, X., Zhen, J., Miao, J., Wang, J.*, & Wu, G. (2022). Reflectance spectroscopy for assessing heavy metal pollution indices in mangrove sediments using XGBoost method and physicochemical properties. *CATENA*, 211, 105967. doi:10.1016/j.catena.2022.105967
- 2021 Jiang, X., Zhen, J., Miao, J., Zhao, D., Wang, J.*, & Jia, S. (2021). Assessing mangrove leaf traits under different pest and disease severity with hyperspectral imaging spectroscopy. *Ecological Indicators*, 129, 107901. doi:10.1016/j.ecolind.2021.107901
- 2021 Zhen, J., Jiang, X., Xu, Y., Miao, J., Zhao, D., Wang, J*, & Wu, G. (2021). Mapping leaf chlorophyll content of mangrove forests with Sentinel-2 images of four periods. *International Journal of Applied Earth Observation and Geoinformation*, 102, 102387. doi:10.1016/j.jag.2021.102387

Book Chapters

- 2024 Wang, L., Miao, J., & Lu, Y. (2024). Remote Sensing of Mangrove Forests. In *Remote Sensing Handbook, Volume V* (pp. 176–191). CRC Press. [link]
- 2024 Wang, L., Lu, Y., & Miao, J. (2024). Remote Sensing of Mangrove Forests. In *Reference Module in Earth Systems and Environmental Sciences*. Elsevier. [link]

Conference Presentations

- 2026 AAG Annual Meeting, San Francisco, California, March 22.
Paper presentation: Post-hurricane Irma mangrove degradation mapping based on remote sensing foundation model SkySense++ (2016-2025).
- 2025 AAG Annual Meeting, Detroit, Michigan, March 26.
Paper presentation: Phenology-based mangrove species mapping in Florida using HLS satellite imagery and Gaussian Mixture Model.
- 2024 AAG Annual Meeting, Honolulu, Hawaii, April 18.

- Poster presentation: Leveraging phenological information from HLS imagery for mangrove species mapping in Florida.
- 2022 **4th Chinese Congress on Remote Sensing of Wetlands**, China & online, August 13.
Paper presentation: Remote sensing retrieval of mangrove leaf nutrients using machine learning method.
- 2022 **Journal of Remote Sensing Postgraduate Academic Forum**, China & online, October 29.
Paper presentation: Exploring the influence of ecological and geographical factors on mangrove leaf nutrients.

Teaching

- 2025 **GEO 479/559**: GIS for Environmental Modeling (Lab session, Spring)
GEO 481/506: Geographic Information Systems (Lab session, Spring & Fall)
- 2024 **GEO 381**: Cartography (Lab session, Spring)
GEO 479/559: GIS for Environmental Modeling (Lab session, Spring)
GEO 481/506: Geographic Information Systems (Lab session, Fall)
- 2023 **GEO 105**: Earth, Environment and Climate (Lab session, Fall)

Awards

- 2026 **Abrahams-Woldenberg Field Award** (2,000 USD), Department of Geography, University at Buffalo
- 2026 **L. Michael Trapasso for Climate Impact Award** (1,000 USD), Department of Geography, University at Buffalo
- 2024 **Student Illustrated Paper Competition Award** (300 USD), Remote Sensing Specialty Group, AAG
- 2023 **SEDA-JIA Scholarship Individual Program Excellence Award**, Shenzhen University, China
- 2022 **First-Class Academic Scholarship**, Shenzhen University, China
- 2022 **Outstanding Presentation Award**, Journal of Remote Sensing Postgraduate Academic Forum, China
- 2020–21 **Second-Class Academic Scholarship**, Shenzhen University, China
- 2019 **Second Prize**, National University Student Scientific and Technical Thesis Competition on Surveying and Mapping, Chinese Institute of Surveying, China

Grants

- 2026 **Google Cloud Research Credits Award** (1,000 USD), Google Cloud Education Programs
- 2025 **AAG Student Travel Grant** (722 USD), American Association of Geographers
- 2025 **Nila T. Gnam Junior Faculty Research Fund** (2,000 USD), Asia Research Institute, University at Buffalo