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Ming Shen

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Postdoctoral Research Associate

Geospatial Digital Informatics Lab (GeoDI)
Department of Geography
University of Florida
Gainesville, FL

Education

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- 2024** **Ph.D. in Geography, Department of Geography & Sustainability, University of Tennessee, Knoxville, TN, USA (GPA: 3.88/4)**
Research focus: Remote sensing of environment and spatial analysis.
Dissertation: Remote sensing mapping of the invasive plant species, kudzu.
Special field exams: Spatial Statistics & Remote Sensing of Vegetation.
- 2024** **M.S. in Statistics, Department of Business Analytics & Statistics, University of Tennessee, Knoxville, TN, USA**
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- 2018** **M.S. in Cartography and Geography Information System, Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences (CAS); University of CAS (UCAS), Beijing, China**
Thesis: Developing the remote sensing-based water environmental model in the midstream of Yarlung Zangbo River.
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- 2015** **B.S. in Urban and Rural Planning & Resource Management, School of Soil and Water Conservation, Beijing Forestry University (BJFU), Beijing, China (GPA: 3.87/4)**
Thesis: Turbidity inversion using MODIS images near the Yellow River estuary.
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Appointments

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- 2026 Sep. -** **Postdoctoral Research Associate**, Department of Geography, University of Florida.
(Supervisor: Dr. Di Yang)
- 2025 Sep.-2026 Jun.** **Postdoctoral Research Associate**, School of Natural Resources, University of Tennessee, Knoxville. (Supervisor: Dr. Tyler Gifford)
- 2025 Summer** **GeoAI Consultant**, Department of Electrical Engineering and Computer Science, University of Tennessee, Knoxville. (Supervisor: Dr. Hairong Qi)
- 2018 - 2024** **Graduate Teaching Assistant**, Department of Geography & Sustainability, University of Tennessee, Knoxville.
- 2015 - 2018** **Graduate Research Assistant**, University of Chinese Academy of Sciences.
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Research Interests

Ecology

- Monitoring and mapping of invasive species encroachment
- Biodiversity assessment and forest ecosystem health analysis
- Forest carbon stock estimation

Sustainability

- Land surface process and ecosystem dynamics
- Human-environment interactions
- Environmental monitoring to support sustainable decision-making

Geospatial Science

- GeoAI and deep learning applications for environmental monitoring
 - Cloud-based geospatial analysis using Google Earth Engine and Google Colab
 - Integration of satellite imagery, LiDAR, and UAV data for large-scale analysis
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Publications

Sciprofiles: <https://sciprofiles.com/profile/1342368>

- [1] **Shen, M.**; Gifford, T. Aboveground Forest carbon stocks estimation in mixed forests of national forests and parks using multi-source remote sensing. 2026. Manuscript is in preparation.
- [2] **Shen, M.**; Tang, M.; Qi, H.; Li, Y. High-resolution Kudzu Mapping Based on Segment Anything Model. 2026. Manuscript is in preparation.
- [3] **Shen, M.** Remote Sensing Mapping of the Invasive Plant Species, Kudzu. *PhD diss., University of Tennessee*, Dec. 2024. (https://trace.tennessee.edu/utk_graddiss/11388)
- [4] **Shen, M.**; Tang, M.; Jiao, W.; Li, Y. Kudzu invasion and its influential factors in the southeastern United States. *International Journal of Applied Earth Observation and Geoinformation*. 2024, 130. (<https://doi.org/10.1016/j.jag.2024.103872>)
- [5] **Shen, M.**; Tang, M.; Li, Y. Phenology and Spectral Unmixing-Based Invasive Kudzu Mapping: A Case Study in Knox County, Tennessee. *Remote Sensing*. 2021, 13, 4551. (<https://doi.org/10.3390/rs13224551>)
- [6] **Shen, M.**; Wang, S.; Li, Y.; Tang, M.; Ma, Y. Pattern of Turbidity Change in the Middle Reaches of the Yarlung Zangbo River, Southern Tibetan Plateau, from 2007 to 2017. *Remote Sensing*. 2021, 13, 182. (<https://doi.org/10.3390/rs13020182>)
- [7] Wang, S., **Shen, M.**, Ma, Y., Chen, G., You, Y., & Liu, W. Application of remote sensing to identify and monitor seasonal and interannual changes of water turbidity in Yellow River estuary, China. *Journal of Geophysical Research: Oceans*, 2019, 124. (<https://doi.org/10.1029/2019JC015106>)
- [8] Liu, W., Wang, S., Ma, Y., **Shen, M.**, You, Y. A remote sensing method for retrieving chlorophyll-a concentration from river water body. *Journal of Geo-information Science*, 2020, 22, 10, 2062-2077.
- [9] Liu, W., Wang, S., Yang, R., Ma, Y., **Shen, M.**, You, Y., Hai, K., Baqa, M.F. Remote sensing retrieval of turbidity in alpine rivers based on high spatial resolution satellites. *Remote Sensing*, 2019, 11(24), p.3010. (<https://doi.org/10.3390/rs11243010>)

- [10] **Shen, M.**, Wang, S., Ma, Y., Su, L., & You, Y. Turbidity Patterns Identification Based on Self-organizing Maps at Yellow River Estuary. *Journal of Geo-Information Science*. 2018, (08):1190-1200.
- [11] Wang, S., Zhang, B., Yang, Q., Chen, G., Yang, B., Lu, L., **Shen, M.**, Peng Y. Responses of net primary productivity to phenological dynamics in the Tibetan Plateau, China. *Agricultural & Forest Meteorology*, 2017, 232, 235-246.
- [12] Wang, S., Wang, X., Chen, G., Yang, Q., Wang, B., Ma, Y., **Shen, M.** Complex responses of spring alpine vegetation phenology to snow cover dynamics over the Tibetan Plateau, China. *Science of the Total Environment*, 2017, 593-594, 449.
- [13] Peng, Y., Wang, S., Fu, X., **Shen, M.**, You, Y. Intelligent Road and Bridge Disease Detection Method Based on UAV Images. *Bulletin of Surveying and Mapping*, 2017, 8, 67-70. (In Chinese with English abstract)

Teaching Experiences

Courses	Duties
Geo-Statistics: GEOG 415 Introduction to Quantitative Methods	Lectures: Assist the main instructor in teaching fundamental concepts of general statistics and geo-statistics. Labs: Prepare lab materials; Teach statistical tests (e.g., t-tests) and regression analysis (e.g., simple linear regression and logistic regression) using R .
Geographic Information Science: GEOG 434 Terrain Analysis GEOG 311 Geo-visualization and Geographic Information Science GEOG 411 Intermediate Geographic Information Science	Lectures: Teach the section of Raster Analysis; Assist the main instructor in teaching fundamental and advanced GIS concepts. Labs: Prepare lab instructions; Teach labs of data visualization, vector analysis, raster analysis, and spatial analysis using ArcGIS Pro and ArcGIS Online .
Remote Sensing: GEOG 413 Remote Sensing of Environment	Lectures: Teach the section of Environmental Application in Remote Sensing; Assist the main instructor in introducing remote sensing theories, datasets, methods, and common applications. Labs: Prepare lab instructions; Teach labs of raster data processing and analysis using ENVI and Google Earth Engine .

Guest Lectures

- University of Florida, GIS5038c Environmental Remote Sensing.
- University of Tennessee, GEOG 413 Remote Sensing of Environments.
- University of Tennessee, GEOG 411 Intermediate Geographic Information Science.

Skills

- **Esri suite of GIS products (highly proficient and well prepared to teach):** ArcGIS Pro, ArcGIS Online.
 - **Coding platforms (highly proficient):** Google Earth Engine (JavaScript), Google Colab (Python), RStudio (R), MATLAB.
 - **Image processing:** ENVI.
 - **Statistical analysis:** SPSS, Origin.
 - **Field Survey:** Terrestrial Laser Scanner, ASD FieldSpec, Electronic Total Station, GPS.
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Academic Conferences Participation

- Paper presentation in the **SEDAAG 2024** annual meeting, Greenville, SC. “Remote sensing mapping of the invasive plant species, kudzu, in the southeastern United States.”
 - Paper presentation in the **SEDAAG 2022** annual meeting, Atlanta, GA. “Kudzu mapping using phenology and spectral unmixing of multispectral satellite imagery: A case study from Knox County, Tennessee”.
 - Poster presentation in the **SEDAAG 2020** annual meeting, online meeting. “Extracting spectral and geomorphology signatures of kudzu from multi-source remote sensing data”.
 - Poster presentation in the **AAG 2019** annual meeting, Denver, CO. “Mapping kudzu distribution using the combination of LiDAR point cloud and multi-spectral remote sensing images”.
 - Poster presentation in the **AAG 2018** annual meeting, Washington D.C. “Kudzu identification using multi-source remote sensing data”.
 - Paper presentation in the **SEDAAG 2018** annual meeting, Johnson City, TN. “Monitoring turbidity change in the middle reach of the Yarlung Zangbo River from 2007-2017 based on satellite imagery and in situ measurements”.
 - Poster presentation in the **AGU 2017** meeting session “*Runoff Change and Adaptive Management in the River Source Region*” in 2017 in New Orleans, Louisiana, U.S.
 - Paper presentation in the 3rd and 4th Symposium of “*Runoff Change and its Adaptive Management in the Major Rivers in Southwestern China*” *Major Research Plan* in 2016 and 2017 in China.
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Honors and Awards

2024	Primary Lead Publication Award.
2023	Outstanding Graduate Teaching Assistant.
2022	Primary Lead Publication Award.
2020	Outstanding Graduate Teaching Assistant.
2020	Summer Graduate Research Assistant Scholarship
2017, 2016, 2015	The Graduate Academic Scholarship three times. The Hortative Scholarship in UCAS.
2015	Outstanding Graduates of Colleges and Universities in Beijing, China.
2014	National Scholarship in China.
2014	Second Prize in National English Competition for College Student in China.
2013	The Guan Junwei Excellent Student Scholarship.
2013	Excellent Student Cadre in BJFU.
2012	Special Prize Scholarship for Freshmen in BJFU. First Prize Scholarship in BJFU.
2012	Merit Student in BJFU.
