Qiusheng Wu

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Education

Ph.D. in Geography — **University of Cincinnati, USA**

Hydrological and ecological analysis of topographic structure and wetland landscape 2015

M.A. in Geography — **University of Cincinnati, USA**

Object-oriented representation and analysis of coastal changes for hurricane-induced damage assessment 2011

B.S. in GIS — **Sun Yat-sen University, China**

Analysis and prediction of landscape pattern changes in Dongguan, China 2007

Academic Appointments

- 2025–present: Amazon Scholar
- 2024–present: Director of Graduate Studies, Department of Geography & Sustainability, UTK
- 2023–present: Associate Professor, Department of Geography & Sustainability, UTK
- 2022–present: Director of TennesseeView, a Tennessee Remote Sensing Consortium
- 2022–2025: Amazon Visiting Academic
- 2023–2024: Senior Research Fellow, United Nations University Institute for Water, Environment and Health (UNU-INWEH)
- 2021–2024: Associate Director of Graduate Studies, Department of Geography & Sustainability, UTK
- 2019–2023: Assistant Professor, Department of Geography & Sustainability, UTK
- 2018–2019: Graduate Director, Department of Geography, Binghamton University
- 2015–2019: Assistant Professor, Department of Geography, Binghamton University
- 2014–2015: Remote Sensing Specialist, U.S. Environmental Protection Agency (EPA)
- 2012–2013: Teaching Assistant, Department of Geography, University of Cincinnati
- 2009–2012: Research Assistant, Department of Geography, University of Cincinnati
- 2009: Research Assistant, Department of Geography, Texas A&M University

Research Areas

Research Focus Geospatial Data Science, GeoAI, Remote Sensing, Open-Source Software Development, Cloud Computing, Wetland Hydrology

Patents

- Liu, H. and **Wu, Q.** (2018). Localized contour tree method for deriving geometric and topological properties of complex surface depressions based on high-resolution topographic data. *The United States Patent* 10,096,154 was filed on April 4, 2016, and issued on October 9, 2018.

Awards & Honors

- 2026: UCGIS I-GUIDE Community Champion
- 2025: UT Libraries' Paul E. Trentham, Sr. Library Partner Award
- 2024: Google Open Source Peer Bonus Award
- 2024: Graduate Teaching Award, Department of Geography & Sustainability, UTK
- 2023: Google Open Source Peer Bonus Award
- 2023: International Geospatial Innovation Award, UK Ordnance Survey
- 2022: CPGIS Innovation Award
- 2022: Google Developer Expert (GDE) for Earth Engine
- 2022: Early Career Research Award, College of Arts and Sciences, UTK
- 2022: Better Scientific Software (BSSw) Honorable Mention
- 2020: Global Young Scientist Award, World Geospatial Developers Conference
- 2018: AI for Earth Microsoft Azure and Esri Award, Microsoft & Esri
- 2017: Top 1% of Peer Reviewers in Multidisciplinary, Publons
- 2017: Harpur College Teaching Award – Best Instructor of Graduate Classes, Binghamton University

- 2017: AAG Research Grant Award, American Association of Geographers
- 2016: Sentinel of Science Award – Top 10% of reviewers in Earth and Planetary Sciences by Publons
- 2015: Finalist, Honors Competition for Student Papers, Remote Sensing Specialty Group, AAG
- 2013: Robert Bruce McNee Award for Outstanding Academic Achievements, University of Cincinnati
- 2013: First Place, Graduate Poster Forum Award, University of Cincinnati
- 2012: Graduate Student Summer Research Fellowship, University of Cincinnati
- 2012: Excellent Graduate Research Award, GIESN Center, University of Cincinnati
- 2012: Student Travel Grants, International Geographic Information Fund (IGIF), AAG
- 2010: First Place, Student Paper Competition, GIS Specialty Group, AAG
- 2010: Second Place, Student Poster Competition, OhioView SATELLITES Geospatial Technology Conference

Books

- **Wu, Q.** (2026). *GeoAI with Python: A Practical Guide to Open-Source Geospatial AI*. 430 pages. Independently published. ISBN (Print) 979-8253507414; ISBN (PDF) 979-8993859729. https://book.opengeoai.org
- **Wu, Q.** (2025). *Spatial Data Management with DuckDB: From SQL Basics to Advanced Geospatial Analytics*. 446 pages. Independently published. ISBN (Print) 979-8274710572; ISBN (PDF) 979-8993859705. https://duckdb.gishub.org
- **Wu, Q.** (2025). *Introduction to GIS Programming: A Practical Python Guide to Open Source Geospatial Tools*. 556 pages. Independently published. ISBN (Print) 979-8286979455; ISBN (PDF) 979-8993859712. https://gispro.gishub.org
- **Wu, Q.** (2023). *Earth Engine and Geemap: Geospatial Data Science with Python*. 408 pages. Locate Press. ISBN (Print) 978-1738767519; ISBN (PDF) 978-1738767526. https://book.geemap.org

Book Forewords

- Tokaj, P., Yu, J., & Sarwat, M. (2025). *Cloud Native Geospatial Analytics with Apache Sedona: A Hands-On Guide for Working with Large-Scale Spatial Data*. 336 pages. O'Reilly Media. (Foreword by **Wu, Q.**)
- Bunting, E., Southworth, J., Gibbes, C., & Herrero, H. (2026). *Remote Sensing, Big Data, and GeoAI: Exploring Applications with Geospatial Insights*. 375 pages. Elsevier. (Foreword by **Wu, Q.**)

Refereed Publications

Published (Total: **84**; 1st-author: **16**; *h*-index: **46**; Google Scholar)

2026

- **Wu, Q.** (2026). GeoAI: A Python package for integrating artificial intelligence with geospatial data analysis and visualization. *Journal of Open Source Software*, 11(118), 9605. https://doi.org/10.21105/joss.09605

2025

- Khare, A., Gupta, B.C., Rajib, A., Vanderhoof, M., & **Wu, Q.** (2025). Estimates of global surface water dynamics harnessing near real-time land cover observations and open science geospatial capabilities. *Environmental Research Letters*. 20, 124042. https://doi.org/10.1088/1748-9326/ae137b
- Islam, S., **Wu, Q.**, Islam, M.R., & Abdullah, H.M. (2025). Unveiling the Drivers of Unplanned Urbanization: A High-Resolution Night Light Development Index Approach for Assessing Regional Inequality and Urban Growth in Dhaka. *Remote Sensing*, 17(8), 1397. https://doi.org/10.3390/rs17081397
- Sarigai, S., Yang, L., Slack, K., Lane, K.M.D., Buenemann, M., **Wu, Q.**, Woodhull, G., & Driscol, J. (2025). dciWebMapper: A Data-Driven and Coordinated View-Enabled Interactive Web Mapping Framework for Visualizing and Sensing High-Dimensional Geospatial (Big) Data. *Transactions in GIS*, 29: e13277. https://doi.org/10.1111/tgis.13277
- Lu, B., Francescutto, L., Howie, S., Lin, H., **Wu, Q.**, Hedley, N., … McDonald, I. (2025). Exploring the concept of digital twins of wetlands for supporting ecosystem monitoring and management. *Big Earth Data*, 1–31. https://doi.org/10.1080/20964471.2025.2480446

2024

- Forgrave, R., Evenson, G.R., Golden, H.E., Christensen, J.R., Lane, C.R., **Wu, Q.**, D'Amico, E., & Prenger, J. (2024). Wetland-mediated nitrate reductions attenuate downstream: Insights from a modeling study. *Journal of Environmental Management,* 370, 122500. https://doi.org/10.1016/j.jenvman.2024.122500.
- Liu, B., & **Wu, Q.** (2024). HyperCoast: A Python Package for Visualizing and Analyzing Hyperspectral Data in Coastal Environments. *Journal of Open Source Software*, 9(100), 7025. https://doi.org/10.21105/joss.07025.
- Che, Y., Li, X., Liu, X., Xu, X., Huang, K., …, **Wu, Q.**, Arehart, J.H., Yuan, W. & Li, X. (2024). Mapping of individual building heights reveals the large gap of urban-rural living spaces in the contiguous US. *The Innovation Geoscience*, 100069-1. http://dx.doi.org/10.59717/j.xinn-geo.2024.100069

- Liu, S., Wang, C., Chen, Z., Li, Q., **Wu, Q.**, Li, Y., Wu, J., & Yu, B. (2024). Enhancing nighttime light remote Sensing: Introducing the nighttime light background value (NLBV) for urban applications. *International Journal of Applied Earth Observation and Geoinformation*, 126, 103626. https://doi.org/10.1016/j.jag.2023.103626
- **Wu, Q.** (2024). Sharing Work in Earth Engine: Basic UI and Apps. In: Cardille, J.A., Crowley, M.A., Saah, D., Clinton, N.E. (eds), *Cloud-Based Remote Sensing with Google Earth Engine: Fundamentals and Applications*. Springer. https://doi.org/10.1007/978-3-031-26588-4_30
- Rajib, A., Khare, A., Golden, H.E., Gupta, B.C., **Wu, Q.**, Lane, C.R., … & McFall, B.C. (2023). A call for consistency and integration in global surface water estimates. *Environmental Research Letters*, 19(2), 021002. https://doi.org/10.1088/1748-9326/ad1722

2023

- Li, M., Liu, T., Duan, L., Ma, L., **Wu, Q.**, Wang, Y., & Wang, S. (2023). Confluence Simulations Based on Dynamic Channel Parameters in the Grasslands Lacking Historical Measurements. *Journal of Hydrology*, 130425. https://doi.org/10.1016/j.jhydrol.2023.130425
- Osco, L.P., **Wu, Q.**, de Lemos, E.L., et. al. (2023). The Segment Anything Model (SAM) for remote sensing applications: From zero to one shot. *International Journal of Applied Earth Observation and Geoinformation*, 124, 103540. https://doi.org/10.1016/j.jag.2023.103540
- Chen, H., Yang, L., & **Wu, Q.** (2023). Enhancing Land Cover Mapping and Monitoring: An Interactive and Explainable Machine Learning Approach Using Google Earth Engine. *Remote Sensing*, 15(18), 4585. https://doi.org/10.3390/rs15184585
- **Wu, Q.**, & Osco, L.P. (2023). samgeo: A Python package for segmenting geospatial data with the Segment Anything Model (SAM). *Journal of Open Source Software*, 8(89), 5663. https://doi.org/10.21105/joss.05663
- Wu, B., Song, Z., **Wu, Q.**, Wu, J., & Yu, B. (2023). A Vegetation Nighttime Condition Index Derived From The Triangular Feature Space between Nighttime Light Intensity and Vegetation Index. *IEEE Transactions on Geoscience and Remote Sensing*, vol. 61, pp. 1-15, 2023, Art no. 561811. https://doi.org/10.1109/TGRS.2023.3305457
- Crowley, M.A., Stuhlmacher, M., Trochim, E.D., Van Den Hoek, J., Pasquarella, V.J., Szeto, S.H., … & **Wu, Q.** (2023). Pillars of cloud-based Earth observation science education. *AGU Advances*, 4, e2023AV000894. https://doi.org/10.1029/2023AV000894
- Lane, C. R., D'Amico, E., Christensen, J. R., Golden, H. E., **Wu, Q.**, & Rajib, A. (2023). Mapping Global Non-Floodplain Wetlands. *Earth System Science Data*, 15, 2927–2955, https://doi.org/10.5194/essd-15-2927-2023
- Evenson, G.R., Golden, H.E., Christensen, J.R., Lane, C.R., Kalcic, M.M., Rajib, A., **Wu, Q.**, Mahoney, D.T., White, E., & D'Amico, E. (2023). River Basin Simulations Reveal Wide-Ranging Wetland-Mediated Nitrate Reductions. *Environmental Science and Technology*, 57(26), 9822-9831. https://doi.org/10.1021/acs.est.3c02161
- Lane, C.R., Creed, I.F., Golden, H.E., Leibowitz, S.G., Mushet, D.M., Rains, M.C., **Wu, Q.**, … (2023). Vulnerable Waters are Essential to Watershed Resilience. *Ecosystems*, 26(1), 1-28. https://doi.org/10.1007/s10021-021-00737-2
- Wu, B., Yang, C., **Wu, Q.**, Wang, C., Wu, J., & Yu, B. (2023). A building volume adjusted nighttime light index for characterizing the relationship between urban population and nighttime light intensity. *Computers, Environment and Urban Systems*, 99, 101911, https://doi.org/10.1016/j.compenvurbsys.2022.101911

2022

- Wu, B., Yang, L., **Wu, Q.**, Zhao, Y., Pan, Z., … & Yu, B. (2022). A Stepwise Minimum Spanning Tree Matching Method for Registering Vehicle-borne and Backpack LiDAR Point Clouds. *IEEE Transactions on Geoscience and Remote Sensing,* 60, 5705713. https://doi.org/10.1109/TGRS.2022.3226956
- Shi, D., **Wu, Q.**, Shi, Y., Li, Z., Xia, B., Chen, Y., … & Li, Y. (2022). Multidimensional assessment of soil conservation ecosystem services and multiscale analysis of influencing mechanisms. *Journal of Cleaner Production*, 381, 135162. https://doi.org/10.1016/j.jclepro.2022.135162
- Zhou, Y., Li, X., Chen, W., Meng, L., **Wu, Q.**, Gong, P., & Seto, K. C. (2022). Satellite mapping of urban built-up heights reveals extreme infrastructure gaps and inequalities in the Global South. *Proceedings of the National Academy of Sciences*, 119(46), e2214813119. https://doi.org/10.1073/pnas.2214813119
- Yang, L., Driscol, J., Sarigai, S., **Wu, Q.**, Chen, H., & Lippitt, C.D. (2022). Google Earth Engine and Artificial Intelligence (AI): A Comprehensive Review. *Remote Sensing*, 14(14), 3253. https://doi.org/10.3390/rs14143253
- Chen, Z., Yu, B., Li, Y., **Wu, Q.**, Wu, B., Huang, Y., … & Wu, J. (2022). Assessing the potential and utilization of solar energy at the building scale in Shanghai. *Sustainable Cities and Society*, 103917. https://doi.org/10.1016/j.scs.2022.103917
- Yang, L., Driscol, J., Sarigai, S., **Wu, Q.**, Lippitt, C.D., & Morgan, M. (2022). Towards Synoptic Water Monitoring Systems: A Review of AI Methods for Automating Water Body Detection and Water Quality Monitoring Using Remote Sensing. *Sensors*, 22, 2416. https://doi.org/10.3390/s22062416
- Li, Y., Song, Z., Wu, B., Yu, B., **Wu, Q.**, Hong, Y., Liu, S., & Wu, J. (2022). Evaluating the ability of NOAA-20 monthly composite data for socioeconomic indicators estimation and urban area extraction. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 15, 1837-1845. https://doi.org/10.1109/JSTARS.2022.3149028

2021

- Wu, B., Yang, C., Chen, Z., **Wu, Q.**, Yu, S., Wang, C., Li, Q., Wu, J., & Yu, B. (2021). The relationship between urban 2D/3D landscape pattern and nighttime light intensity. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing,* 15, 478-489. https://doi.org/10.1109/JSTARS.2021.3135488
- Rajib, A., Zheng, Q., Golden, H.E., **Wu, Q.**, Lane, C.R., Christensen, J.R., … (2021). The changing face of floodplains in the Mississippi River Basin detected by a 60-year land use change dataset. *Nature Scientific Data*, 8, 271. https://doi.org/10.1038/s41597-021-01048-w
- Hong, Y., Wu, B., Song, Z., Li, Y., **Wu, Q.**, Chen, Z., … & Yu, B. (2021). A monthly night-time light composite dataset of NOAA-20 in China: a multi-scale comparison with S-NPP. *International Journal of Remote Sensing*, 42(20), 7931-7951. https://doi.org/10.1080/01431161.2021.1969057
- Shi, D., Shi, Y., & **Wu, Q.** (2021). Multidimensional Assessment of Lake Water Ecosystem Services Using Remote Sensing. *Remote Sensing*, 13(17), 3540. https://doi.org/10.3390/rs13173540
- Evenson, E., Golden, H.E., Christensen, J., Lane, C.R., Rajib, A., … & **Wu, Q.** (2021). Wetland restoration yields dynamic nitrate responses across the Upper Mississippi River basin. *Environmental Research Communications*, 3(9), 095002. https://doi.org/10.1088/2515-7620/ac2125
- Golden, H.E., Lane, C.R., Rajib, A., & **Wu, Q.** (2021). Improving global flood and drought predictions: integrating non-floodplain wetlands into watershed hydrologic models. *Environmental Research Letters*, 16(9), 1. http://dx.doi.org/10.1088/1748-9326/ac1fbc
- **Wu, Q.** (2021). Leafmap: A Python package for interactive mapping and geospatial analysis with minimal coding in a Jupyter environment. *Journal of Open Source Software*, 6(63), 3414. https://doi.org/10.21105/joss.03414
- Li, X., Zhang, J., Li, Z., Hu, T., **Wu, Q.**, Yang, J., … (2021). Critical role of temporal contexts in evaluating urban cellular automata models. *GIScience & Remote Sensing,* 58(6), 799-811. https://doi.org/10.1080/15481603.2021.1946261
- Chen, H., Wu, B., Yu, B., Chen, Z., **Wu, Q.**, Lian, T., Wang, C., Li, Q., & Wu, J. (2021). A New Method for Building-Level Population Estimation by Integrating LiDAR, Nighttime Light, and POI Data. *Journal of Remote Sensing*, Article ID 9803796. https://doi.org/10.34133/2021/9803796
- **Wu, Q.** (2021). lidar: A Python package for terrain and hydrological analysis using digital elevation models. *Journal of Open Source Software,* 6(59), 2965. https://doi.org/10.21105/joss.02965
- Wang, S., Alexander, P., **Wu, Q.**, Tedesco, M., & Shu, S. (2021). Characterization of ice shelf fracture features using ICESat-2 – a case study over the Amery Ice Shelf. *Remote Sensing of Environment*, 255, 112266. https://doi.org/10.1016/j.rse.2020.112266
- Wu, B., Yu, B., Shu, S., **Wu, Q.**, Zhao, Y., & Wu, J. (2021). A spatiotemporal structural graph for detecting land cover changes. *International Journal of Geographical Information Science,* 35(2), 397-425. https://doi.org/10.1080/13658816.2020.1778706

2020

- Shi, D., Shi, Y., **Wu, Q.**, & Fang, R. (2020). Multidimensional Assessment of Food Provisioning Ecosystem Services Using Remote Sensing and Agricultural Statistics. *Remote Sensing*, 12(23), 3955. https://doi.org/10.3390/rs12233955
- Wang, L., Xu, M., Liu, Y., Liu, H., Beck, R.A., …, & **Wu, Q.** (2020). Mapping Freshwater Chlorophyll-a Concentrations at a Regional Scale Integrating Multi-Sensor Satellite Observations with Google Earth Engine. *Remote Sensing*, 12(20), 3278. https://doi.org/10.3390/rs12203278
- Amani, M., Ghorbanian, A., Ahmadi, A., Kakooei, M., …, **Wu, Q.**, & Brisco, B. (2020). Google Earth Engine Cloud Computing Platform for Remote Sensing Big Data Applications: A Comprehensive Review. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 13, 5326–5350. https://doi.org/10.1109/JSTARS.2020.3021052
- Chen, W., Zhou, Y., **Wu, Q.**, Chen, G., Huang, X., & Yu, B. (2020). Urban building type mapping using geospatial data: a case study of Beijing, China. *Remote Sensing*, 12(17), 2805. https://doi.org/10.3390/rs12172805
- Aybar, C., **Wu, Q.**, Bautista, L., Yali, R., & Barja, A. (2020). rgee: An R package for interacting with Google Earth Engine. *Journal of Open Source Software*, 5(51), 2272. https://doi.org/10.21105/joss.02272
- **Wu, Q.** (2020). geemap: A Python package for interactive mapping with Google Earth Engine. *Journal of Open Source Software*, 5(51), 2305. https://doi.org/10.21105/joss.02305
- Rajib, A., Golden, H.E., Lane, C.R., & **Wu, Q.** (2020). Surface depression and wetland water storage improve major river basin hydrologic predictions. *Water Resources Research,* 56(7), e2019WR026561. https://doi.org/10.1029/2019WR026561
- Liu, X., Huang, Y., Xu, X., Li, X., …, **Wu, Q.**, Huang, K., Estes, L., & Zeng, Z. (2020). High-spatiotemporal-resolution mapping of global urban change from 1985 to 2015. *Nature Sustainability*, 3(7), 564-570. https://doi.org/10.1038/s41893-020-0521-x
- Berhane, T., Lane, C.R., Mengistu, S., Christensen, J.R., Golden, H.E., Qiu, S., Zhu, Z., & **Wu, Q.** (2020). Land-cover changes to surface-water buffers in the Midwestern USA: 25 years of Landsat analyses (1993-2017). *Remote Sensing*, 12(5), 754. https://doi.org/10.3390/rs12050754
- Wang, C., Chen, Z., Yang, C., Li, Q., **Wu, Q.**, Wu, J., Zhang, G., & Yu, B. (2020). Analyzing parcel-level relationships between Luojia 1-01 nighttime light intensity and artificial surface features across Shanghai, China: A comparison with NPP-VIIRS data. *International Journal of Applied Earth Observation and GeoInformation,* 85, 101989. https://doi.org/10.1016/j.jag.2019.101989

2019

- Zhao, K., Wulder, M. A., Hu, T., Bright, R., **Wu, Q.**, Qin, H., Li, Y., Toman, E., Mallick, B., Zhang, X., & Brown, M. (2019). Detect change-point, trend, and seasonality in satellite time series data to track abrupt changes and nonlinear dynamics: A Bayesian ensemble algorithm. *Remote Sensing of Environment*, 232, 111181. https://doi.org/10.1016/j.rse.2019.04.034
- Li, X., Zhou, Y., Meng, L., Asrar, G. R., Lu, C., & **Wu, Q.** (2019). A dataset of 30 m annual vegetation phenology indicators (1985–2015) in urban areas of the conterminous United States. *Earth System Science Data*, 11(2), 881-894. https://doi.org/10.5194/essd-11-881-2019
- Golden, H.E., Rajib, A., Lane, C.R., Christensen, J.R., **Wu, Q.**, & Mengistu, S. (2019). Non-Floodplain Wetlands Affect Watershed Nutrient Dynamics: A Critical Review. *Environmental Science & Technology*, 53 (13), 7203-7214. https://doi.org/10.1021/acs.est.8b07270
- **Wu, Q.**, Lane, C.R., Li, X., Zhao, K., Zhou, Y., Clinton, N., DeVries, B., Golden, H.E., & Lang, M.W. (2019). Integrating LiDAR data and multi-temporal aerial imagery to map wetland inundation dynamics using Google Earth Engine. *Remote Sensing of Environment*, 228, 1-13. https://doi.org/10.1016/j.rse.2019.04.015
- Wu, B., Yu, B., Yao, S., **Wu, Q.**, Chen, Z., & Wu, J. (2019). A surface network based method for studying urban hierarchies by nighttime light remote sensing data. *International Journal of Geographical Information Science*, 33(7), 1377-1398. https://doi.org/10.1080/13658816.2019.1585540
- **Wu, Q.**, Lane, C.R., Wang, L., Vanderhoof, M.K., Christensen, J.R., & Liu, H. (2019). Efficient Delineation of Nested Depression Hierarchy in Digital Elevation Models for Hydrological Analysis Using Level-Set Method. *JAWRA Journal of the American Water Resources Association*, 55(2), 354-368. https://doi.org/10.1111/1752-1688.12689
- Beck, R., Xu, M., Zhan, S., Johansen, R., Liu, H., Tong, S., … & **Wu, Q.** (2019). Comparison of satellite reflectance algorithms for estimating turbidity and cyanobacterial concentrations in productive freshwaters using hyperspectral aircraft imagery and dense coincident surface observations. *Journal of Great Lakes Research*, 45(3), 413-433. https://doi.org/10.1016/j.jglr.2018.09.001

2018

- Yu, B., Tang, M., **Wu, Q.**, Yang, C., Deng, S., Shi, K., … & Chen, Z. (2018). Urban built-up area extraction from log-transformed NPP-VIIRS nighttime light composite data. *IEEE Geoscience and Remote Sensing Letters*, 15(8), 1279-1283. https://doi.org/10.1109/LGRS.2018.2830797
- Berhane, T. M., Lane, C.R., **Wu, Q.**, Autrey, B.C., Anenkhonov, O., Chepinoga, V., & Liu, H. (2018). Decision-tree, rule-based, and random forest classification of high-resolution multispectral imagery for wetland mapping and inventory. *Remote Sensing*, 10(4), 580. https://doi.org/10.3390/rs10040580
- **Wu, Q.** (2018). GIS and Remote Sensing Applications in Wetland Mapping and Monitoring. In: Huang, B. (Ed.), *Comprehensive Geographic Information Systems*, Vol. 2, pp. 140-157. Oxford: Elsevier. https://doi.org/10.1016/B978-0-12-409548-9.10460-9
- Berhane, T.M., Lane, C.R., **Wu, Q.**, Anenkhonov, O., Chepinoga, V., Autrey, B.C., & Liu, H. (2018). Comparing pixel-and object-based approaches in effectively classifying wetland-dominated landscapes. *Remote Sensing*, 10(1), 46. https://doi.org/10.3390/rs10010046
- Wu, B., Yu, B., **Wu, Q.**, Chen, Z., Yao, S., Huang, Y., & Wu, J. (2018). An extended minimum spanning tree method for characterizing local urban patterns. *International Journal of Geographical Information Science*, 32(3), 450-475. https://doi.org/10.1080/13658816.2017.1384830

2017

- Ye, Z., Liu, H., Chen, Y., Shu, S., **Wu, Q.**, & Wang, S. (2017). Analysis of water level variation of lakes and reservoirs in Xinjiang, China using ICESat laser altimetry data (2003–2009). *PloS One*, 12(9), e0183800. https://doi.org/10.1371/journal.pone.0183800
- **Wu, Q.**, & Lane, C.R. (2017). Delineating wetland catchments and modeling hydrologic connectivity using lidar data and aerial imagery. *Hydrology and Earth System Sciences*, 21(7), 3579. https://doi.org/10.5194/hess-21-3579-2017
- Jia, Y., Huang, Y., Yu, B., **Wu, Q.**, Yu, S., Wu, J., & Wu, J. (2017). Downscaling land surface temperature data by fusing Suomi NPP-VIIRS and Landsat-8 TIR data. *Remote Sensing Letters*, 8(12), 1132-1141. https://doi.org/10.1080/2150704X.2017.1362125
- Chen, Z., Yu, B., Song, W., Liu, H., **Wu, Q.**, Shi, K., & Wu, J. (2017). A new approach for detecting urban centers and their spatial structure with nighttime light remote sensing. *IEEE Transactions on Geoscience and Remote Sensing*, 55(11), 6305-6319. https://doi.org/10.1109/TGRS.2017.2725917
- Wang, S., **Wu, Q.**, & Ward, D. (2017). Automated delineation and characterization of drumlins using a localized contour tree approach. *International Journal of Applied Earth Observation and GeoInformation*, 62, 144-156. https://doi.org/10.1016/j.jag.2017.06.006
- Beck, R., Xu, M., Zhan, S., Liu, H., Johansen, R., Tong, S., … & **Wu, Q.** (2017). Comparison of satellite reflectance algorithms for estimating phycocyanin values and cyanobacterial total biovolume in a temperate reservoir using coincident hyperspectral aircraft imagery and dense coincident surface observations. *Remote Sensing*, 9(6), 538. https://doi.org/10.3390/rs9060538
- Wu, B., Yu, B., **Wu, Q.**, Yao, S., Zhao, F., Mao, W., & Wu, J. (2017). A graph-based approach for 3D building model reconstruction from airborne LiDAR point clouds. *Remote Sensing*, 9(1), 92. https://doi.org/10.3390/rs9010092

2016

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- Liu, H., Wang, L., Sherman, D., Gao, Y., & **Wu, Q.** (2010). An object-based conceptual framework and computational method for representing and analyzing coastal morphological changes. *International Journal of Geographical Information Science*, 24(7), 1015-1041. https://doi.org/10.1080/13658810903270569

Grants

Funded

2026

- Advancing OPERA Product Accessibility and AI-Enabled Applications through Open-Source Geospatial Frameworks. **Sole PI**. *NASA Jet Propulsion Laboratory (JPL)*. 2/2026-9/2027. $80,000
- StateView Program Development and Operations for the State of Tennessee. **PI** with Michael Camponovo (Co-PI). *AmericaView*. 2/2026-9/2026. $10,000

2024

- Accelerating and enabling data science workflows for geospatial scientists and analysts. **Sole PI**. *Google Research*. 9/2024-8/2025. $25,000
- Geemap development and maintenance. **Sole PI**. *Google*. 4/2024-12/2024. $55,000

- StateView Program Development and Operations for the State of Tennessee. **PI** with Michael Camponovo (Co-PI). *AmericaView*. 12/2024-9/2025. $10,000
- Democratizing Geospatial Data Science for Agricultural Producers. **Co-PI** with Jinha Jung (PI) and Daniel Quinn. *National Agricultural Producer Data Cooperative (NAPDC)*. 3/2024-8/2025. $54,600

2023
- StateView Program Development and Operations for the State of Tennessee. **PI** with Liem Tran (Co-PI) and Michael Camponovo (Co-PI). *AmericaView*. 10/2023-9/2024. $10,000
- Integrating Earth Observations and Ecosystem Models for Improved Characterization and Conservation of Playa Wetlands in the High Plains. **Co-PI** with Adnan Rajib (PI). *USDA Natural Resources Conservation Service*. 8/2023-9/2026. $332,270

2022
- Geemap: Interactive mapping and intelligent analysis of geospatial big data with Google Earth Engine. **PI** with Liping Yang (Co-PI) and Emil Cherrington (Co-PI). *NASA E.7 Support for Open Source Tools, Frameworks, and Libraries*. 9/2022-7/2025. $308,947
- HydroFlame: An Earth Observation-integrated Hydrologic Modeling Framework for Post-wildfire Water Resource Management. **Co-PI** with Adnan Rajib (PI), Melanie Vanderhoof (Co-I), Lan Zhao (Co-I), and Nathan Korb (Co-I). *NASA Earth Science Applications: Water Resources*. 9/2022-8/2025. $824,020

2021
- Engaging Youth in NASA Space Science Imaging. **Collaborator** with Ping Wang (PI), Eugene Smith, Ganqing Jiang, and Michael Nicholl. *NASA Teams Engaging Affiliated Museums and Informal Institutions (2021 TEAM II)*. 2/2022-1/2023. $24,939

2020
- Evaluating Non-floodplain Wetlands for Flood-Risk Reduction and Nutrient Mediation in the Mississippi River Basin. **Co-PI** with Adnan Rajib (PI). *United States Department of Defense*. 10/2020-2/2025. $249,968
- Orchestrating the efforts to fight the opioid crisis in Tennessee with geospatial technologies. **Co-PI** with Liem Tran (PI) and Nicholas Nagle (Co-PI). *One UT Collaboration & Innovation*. 5/2020-5/2022. $49,972
- Fine-resolution wetland mapping using high-performance computing and deep learning. **PI** with Liem Tran. *Joint Institute for Computational Sciences*. 3/2020-2/2021.

2018
- AI for Earth: Wetland Mapping and Monitoring Using Geospatial Big Data and Deep Learning. **Sole PI**. *Microsoft Azure and Esri Award*. 2/2018-12/2018. $10,000

2017
- Modeling hydrologic connectivity of prairie wetlands using LiDAR data and aerial imagery. **Sole PI**. *American Association of Geographers (AAG) Research Grant*. 4/2017-12/2017. $500
- Mapping Prairie Wetlands and Modeling Hydrologic Connectivity Using Remote Sensing and GIS. **Sole PI**. *Transdisciplinary Areas of Excellence (TAE) Seed Grant, Binghamton University*. 1/2017-12/2017. $2,000

2016
- The Upstate Revitalization Initiative – Johnson City Redevelopment. **Co-PI** with John Frazier (PI). *Presidential Research Initiative Award, Binghamton University*. 6/2016-5/2017. $75,000

Pending
- 2026 – Integrated Monitoring and Prediction of Slope Movement Using Open-Source Remote Sensing and GeoAI for TDOT Infrastructure. **PI** with Zhengbo Wang (Co-PI). *Tennessee Department of Transportation*. 8/2026-7/2028. $250,000
- 2026 – Mangroves as Nature's Infrastructure: Species-Specific Die-Off Dynamics and Community Resilience in Florida. **Co-PI** with Le Wang (PI). *National Science Foundation*. 6/2026-5/2029. $43,899
- 2025 – Category III: Data to Science (D2S): Integrated Geospatial Data Systems and Services. **Co-PI** with Jinha Jung (PI). *National Science Foundation*. 8/2026-7/2028. $93,644
- 2025 – AIR-RESPOND: Airport-Integrated Resilience for Rapid Emergency Support, Planning, Operations, Networking, and Dispatch. **Co-PI** with Zhenbo Wang (PI). *National Science Foundation*. 6/2025-5/2028. $738,663

Submitted But Not Funded
- 2024 – Collaborative Research: SRS RN: Greater Resilient, Equitable Energy Network for All (Green4All). **Co-PI** with Chien-Fei Chen (PI). *National Science Foundation*. 9/2025-8/2030. $4,209,126
- 2024 – SAMGeo: Empowering Remote Sensing Image Segmentation with Geo-Foundation Models. **PI** with Gengchen Mai (Co-PI) and Bingqing Liu (Co-PI). *NASA*. 1/2025-12/2027. $803,082
- 2023 – DISES: Suburban Food-Energy-Water Nexus for Climate-Smart Regional Sustainable Development. **Co-PI** with Jie Zhuang (PI), Shelli Rampold, Zibei Chen, and Emine Fidan. *National Science Foundation*. 7/2024-6/2028. $1,800,000

- 2023 – POSE: Phase I: D2S (Data to Science) Building Open-Source Ecosystem for Big Geoscience Data-Driven Agricultural Research. **Co-PI** with Jinha Jung (PI), Anjin Chang, and Zhen Yu Qian. *National Science Foundation*. 3/2024-2/2025. $300,000
- 2023 – Framework: Data to Science Engine (D2SE) – A Data-driven Open Science Community for Sustained Innovation. **Co-PI** with Jinha Jung (PI). *National Science Foundation*. 8/2024-7/2028. $298,110
- 2022 – Human Dynamics of Scientific Knowledge. **Co-PI** with Shih-Lung Shaw (PI) and Shellen Wu (Co-PI). *National Science Foundation*. 8/2022-7/2025. $477,694
- 2021 – Leveraging multi-source satellite imagery and cloud computing for continuous monitoring of forest disturbance in Amazonia. **PI** with Yulong Zhang (Co-PI). *UTK ISSE Seed Grant Funding*. 7/2021-6/2022. $49,824
- 2021 – Human Dynamics of Scientific Knowledge Creation. **Co-PI** with Shellen Wu (PI) and Shih-Lung Shaw (Co-PI). *National Science Foundation*. 8/2021-7/2024. $442,170
- 2021 – Integration of data and modeling approaches for quantifying synergistic interactions between climate and land-use change on a critical region of North American migratory bird habitat. **Co-PI** with Owen Mckenna. *USGS John Wesley Powell Center for Analysis and Synthesis*. 10/2021-9/2023. $153,715
- 2021 – Improving the utility and sustainability of the geemap Python package for interactive mapping and analysis with Google Earth Engine. **Sole PI**. *Google Research Scholar Program*. 4/2021-3/2022. $60,000
- 2020 – Integrating multi-satellite observations and high-resolution aerial imagery for monitoring surface water and wetland inundation dynamics. **Sole PI**. *NASA Early Career Investigator Program in Earth Science*. 3/2021-3/2024. $337,199
- 2020 – Energy Consumption, Air Quality, and Chronic Pulmonary Diseases: Development of Scalable Data Objects and Intelligent Models for Epidemiology and Environmental Challenges. **Co-PI** with Hong-Jun Yoon (PI) and Hyun Kim (Co-PI). *ORI@UT Seed Program*. 1/2021-12/2021. $200,000
- 2020 – Operational Wetland Mapping and Monitoring Using a Combination of Cloud Computing, Deep Learning, and Geospatial Big Data. **Sole PI**. *ORAU Ralph E. Powe Junior Faculty Enhancement Award*. 6/2020-5/2021. $10,000
- 2019 – Optimal incentive payment to store forest carbon when climate and anthropogenic disturbances affect tree species diversity. **Co-PI** with Seong-Hoon Cho (PI) and Sheng-I Yang (Co-PI). *One UT Collaboration and Innovation Grant*. 5/2020-4/2021. $50,000
- 2019 – Mapping Surface Water Dynamics in Tennessee Using High-Resolution Aerial Imagery and LiDAR Data. **PI** with Liem Tran (Co-PI). *Tennessee Water Resources Research Center (TNWRRC)*. 3/2020-2/2021. $34,608
- 2019 – Exploring the Interconnectedness of Spatial Dependence and Spatial Heterogeneity with an Integrated Cross-Scale Analysis Framework. **Co-PI** with Liem Tran (PI) and Nicholas Nagle (Co-PI). *National Science Foundation, Geography and Spatial Sciences Program*. 5/2020-4/2022. $379,004
- 2019 – SCC-PG: Sustainable Economic Development for Distressed Rural Communities: Forest Resource-based Community Engagement and Support. **Senior Personnel** with Shih-Lung Shaw (PI) and Michael Berry. *National Science Foundation, Smart and Connected Communities Program*. 7/2020-6/2021. $80,572
- 2019 – Dynamics of the opioid crisis and socio-economic and environmental disparities across the State of Tennessee under multi-level interactions between the human and environment systems. **Senior Personnel** with Liem Tran (PI), Laurie Meschke, Christy Leppanen, and Kristina Kintziger. *National Science Foundation, Dynamics of Integrated Socio-Environmental Systems (CNH2)*. 8/2020-7/2023. $1,450,063
- 2019 – Optimal incentive payment to store forest carbon under change in tree species diversity by climate and anthropogenic disturbances. **Co-PI** with Seong-Hoon Cho (PI) and Sheng-I Yang (Co-PI). *University of Tennessee Interdisciplinary Research Seed Program*. 5/2020-4/2021. $69,724
- 2019 – Integrating ICESat-2 altimetry observations with multisource remote sensing data for improved characterization of ice shelf rifting and calving processes. **Collaborator** with Shujie Wang (PI). *NASA Program: Studies with ICESat-2*. 1/2020-12/2021. $205,000
- 2019 – From sensors to decisions: Leveraging multi-source Earth observation data, geo-analytics, and agroecosystem modeling to support agriculture management and monitoring in the Hindu Kush-Himalayan Region. **Co-PI** with Kaiguang Zhao (PI). *NASA SERVIR Applied Sciences Team*. 9/2019-8/2022. $202,000
- 2018 – Integrating LiDAR data, multisensor remote sensing imagery, and graph theory for modeling and quantifying wetland hydrologic connectivity. **PI** with Charles Lane (Co-PI), Chengquan Huang (Co-PI), Ben DeVries (Co-PI), and Mark Rains (Co-PI). *NASA Terrestrial Hydrology Program*. 1/2018-12/2020. $416,661
- 2018 – Integrating LiDAR data and graph theory to simulate wetland inundation dynamics and characterize intermittent hydrologic connectivity. **Sole PI**. *CUAHSI Hydroinformatics Innovation Fellowship*. 1/2019-12/2019. $5,000
- 2016 – Ecological Monitoring of Wetlands and Amphibian Populations: An Integrated Approach Using Field Work and Drone Technology. **Co-PI** with Jessica Hua (PI). *Dr. Scholl Foundation*. 7/2017-6/2018. $25,000
- 2016 – Assessing the Responses of Wetland Organisms to Contaminants: An Integrated Approach Using Toxicological Assessments and Drone Technology. **Co-PI** with Jessica Hua (PI). *New York State Water Resources Institute*. 3/2017-2/2018. $10,000

Open-Source Software

Creator and maintainer of 100+ open-source geospatial software packages under Open Geospatial Solutions.

- **anymap**: Interactive mapping with any mapping backend (opengeos/anymap)
- **geemap**: Interactive mapping with Google Earth Engine (gee-community/geemap)
- **geoai**: Integrating AI with geospatial data analysis and visualization (opengeos/geoai)
- **geospatial**: A Python meta-package for geospatial analysis and visualization (opengeos/geospatial)
- **geospatial-ml**: Machine learning with geospatial data (opengeos/geospatial-ml)
- **HyperCoast**: Visualizing and analyzing hyperspectral data in coastal environments (opengeos/HyperCoast)
- **leafmap**: Interactive mapping and geospatial analysis with minimal coding (opengeos/leafmap)
- **lidar**: Terrain and hydrological analysis using digital elevation models (opengeos/lidar)
- **mapwidget**: Custom map widgets for Jupyter notebooks (opengeos/mapwidget)
- **open-buildings**: Working with open building datasets (opengeos/open-buildings)
- **pygis**: A Python package for geospatial analysis (opengeos/pygis)
- **segment-geospatial**: Segmenting geospatial data with the Segment Anything Model (SAM) (opengeos/segment-geospatial)
- **whitebox-python**: Python frontend for WhiteboxTools geospatial analysis (opengeos/whitebox-python)
- **whiteboxgui**: GUI for WhiteboxTools geospatial analysis (opengeos/whiteboxgui)
- **geospatial-data-catalogs**: A collection of geospatial data catalogs (opengeos/geospatial-data-catalogs)
- **aws-open-data**: AWS open data registry (opengeos/aws-open-data)
- **aws-open-data-geo**: AWS open geospatial data (opengeos/aws-open-data-geo)
- **aws-open-data-stac**: AWS open data STAC catalogs (opengeos/aws-open-data-stac)
- **Earth-Engine-Catalog**: Google Earth Engine data catalog (opengeos/Earth-Engine-Catalog)
- **NASA-CMR-STAC**: NASA CMR STAC catalogs (opengeos/NASA-CMR-STAC)
- **NASA-Earth-Data**: NASA Earth data resources (opengeos/NASA-Earth-Data)
- **stac-index-catalogs**: STAC index catalogs (opengeos/stac-index-catalogs)
- **maxar-open-data**: Maxar open data for disaster response (opengeos/maxar-open-data)
- **datasets**: Geospatial datasets (opengeos/datasets)
- **data**: Sample data for geospatial analysis (opengeos/data)
- **ee-tile-layers**: Earth Engine tile layers for web mapping (opengeos/ee-tile-layers)
- **Basemaps**: Basemap layers for QGIS (opengeos/qgis-basemaps)
- **CDSE**: Copernicus Data Space Ecosystem plugin (opengeos/qgis-cdse-plugin)
- **Earth Engine Data Catalogs**: Earth Engine data catalogs for QGIS (opengeos/qgis-gee-data-catalogs-plugin)
- **Geemap**: Geemap plugin for QGIS (opengeos/qgis-geemap-plugin)
- **GeoAI**: GeoAI plugin for QGIS (opengeos/geoai)
- **HyperCoast**: Hyperspectral data analysis for QGIS (opengeos/HyperCoast)
- **Leafmap**: Leafmap plugin for QGIS (opengeos/qgis-leafmap-plugin)
- **Map**: Interactive map plugin for QGIS (opengeos/qgis-map)
- **Maxar Open Data**: Maxar open data plugin for QGIS (opengeos/qgis-maxar-plugin)
- **NASA Earthdata**: NASA Earthdata plugin for QGIS (opengeos/qgis-nasa-earthdata-plugin)
- **NASA OPERA**: NASA OPERA products plugin for QGIS (opengeos/qgis-nasa-opera-plugin)
- **Notebook**: Jupyter notebook integration for QGIS (opengeos/qgis-notebook-plugin)
- **Plugin Template**: Template for creating QGIS plugins (opengeos/qgis-plugin-template)
- **SamGeo**: Segment Anything Model plugin for QGIS (opengeos/qgis-samgeo-plugin)
- **STAC**: STAC catalog browser for QGIS (opengeos/qgis-stac-plugin)
- **Terrascope**: Terrascope data plugin for QGIS (opengeos/qgis-terrascope-plugin)
- **Timelapse**: Timelapse animation plugin for QGIS (opengeos/qgis-timelapse-plugin)
- **Whitebox AI Agent**: WhiteboxTools AI agent for QGIS (opengeos/qgis-whitebox-agent)
- **maplibre-gl-components**: Reusable UI components for MapLibre GL JS (opengeos/maplibre-gl-components)
- **maplibre-gl-earth-engine**: Google Earth Engine integration for MapLibre GL JS (opengeos/maplibre-gl-earth-engine)
- **maplibre-gl-extend**: Extension utilities for MapLibre GL JS (opengeos/maplibre-gl-extend)
- **maplibre-gl-geo-editor**: Geometry editor for MapLibre GL JS (opengeos/maplibre-gl-geo-editor)
- **maplibre-gl-html-widget**: HTML widget for MapLibre GL JS (opengeos/maplibre-gl-html-widget)

- **maplibre-gl-layer-control**: Layer control for MapLibre GL JS (opengeos/maplibre-gl-layer-control)
- **maplibre-gl-layer-manager**: Layer manager for MapLibre GL JS (opengeos/maplibre-gl-layer-manager)
- **maplibre-gl-noaa-lidar**: NOAA LiDAR data viewer for MapLibre GL JS (opengeos/maplibre-gl-noaa-lidar)
- **maplibre-gl-lidar**: LiDAR data viewer for MapLibre GL JS (opengeos/maplibre-gl-lidar)
- **maplibre-gl-planetary-computer**: Microsoft Planetary Computer integration for MapLibre GL JS (opengeos/maplibre-gl-planetary-computer)
- **maplibre-gl-plugin-template**: Template for creating MapLibre GL JS plugins (opengeos/maplibre-gl-plugin-template)
- **maplibre-gl-splat**: 3D Gaussian splatting for MapLibre GL JS (opengeos/maplibre-gl-splat)
- **maplibre-gl-storymaps**: Story maps for MapLibre GL JS (opengeos/maplibre-gl-storymaps)
- **maplibre-gl-streetview**: Street view integration for MapLibre GL JS (opengeos/maplibre-gl-streetview)
- **maplibre-gl-swipe**: Swipe comparison for MapLibre GL JS (opengeos/maplibre-gl-swipe)
- **maplibre-gl-time-slider**: Time slider for MapLibre GL JS (opengeos/maplibre-gl-time-slider)
- **maplibre-gl-typescript-examples**: TypeScript examples for MapLibre GL JS (opengeos/maplibre-gl-typescript-examples)
- **maplibre-gl-usgs-lidar**: USGS LiDAR data viewer for MapLibre GL JS (opengeos/maplibre-gl-usgs-lidar)
- **whiteboxR**: R frontend for WhiteboxTools geospatial analysis (opengeos/whiteboxR)
- **WhiteboxTools-ArcGIS**: WhiteboxTools plugin for ArcGIS (opengeos/WhiteboxTools-ArcGIS)
- **Depression Identification Analyst**: Identifying surface depressions from DEMs (https://doi.org/10.6084/m9.figshare.8866178)
- **Wetland Hydrology Analyst**: Analyzing wetland hydrology (https://doi.org/10.6084/m9.figshare.8866025)
- **Level-Set Toolbox**: Level-set method for depression analysis (https://doi.org/10.6084/m9.figshare.8865839)
- **Drumlin Extraction Toolbox**: Automated delineation of drumlins (https://doi.org/10.6084/m9.figshare.8866400)
- **streamlit-geospatial**: Geospatial web applications with Streamlit (opengeos/streamlit-geospatial)
- **streamlit-map-template**: Streamlit map application template (opengeos/streamlit-map-template)
- **solara-geemap**: Geemap web app with Solara (opengeos/solara-geemap)
- **solara-geospatial**: Geospatial web applications with Solara (opengeos/solara-geospatial)
- **solara-template**: Solara application template (opengeos/solara-template)
- **solara-maxar**: Maxar open data viewer with Solara (opengeos/solara-maxar)
- **voila-geospatial**: Geospatial dashboards with Voila (opengeos/voila-geospatial)
- **geospatial-dataviz**: Geospatial data visualization (opengeos/geospatial-dataviz)
- **surface-water-app**: Surface water mapping application (opengeos/surface-water-app)
- **Awesome-GEE**: A curated list of Google Earth Engine resources (opengeos/Awesome-GEE)
- **python-geospatial**: A collection of Python packages for geospatial analysis (opengeos/python-geospatial)

Teaching

Self-Paced Online Courses

- GEOG 312: Introduction to GIS Programming, Website, Enroll
- GEOG 510: Geographic Software Design, Website, Enroll

University of Tennessee, Knoxville

- GEOG 111: Our Digital Earth (Spring 2020; Fall 2021)
- GEOG 312: First Steps in GIS Programming (Fall 2019, 2021, 2024)
- GEOG 411: Intermediate GIS (Fall 2022, 2023; Spring 2024)
- GEOG 414: Spatial Data Management (Spring 2020, 2021; Fall 2022, 2023)
- GEOG 422: Geographic Software Design (Spring 2023, 2024)
- GEOG 501: Colloquium in Geography (Spring 2021)
- GEOG 504: Introduction to Geographical Research (Fall 2024)
- GEOG 505: Directed Research (Fall 2019)
- GEOG 510: Geographic Software Design (Spring 2021, 2023, 2024, 2025)

Binghamton University

- GEOG 121: Physical Geography (Spring 2016, 2017)
- GEOG 221: Global Climate Change (Fall 2015, 2016, 2017, 2018; Spring 2019)
- GEOG 503: Programming in GIS (Fall 2015, 2018; Spring 2017)
- GEOG 533: Statistical Techniques for Geography (Spring 2016, 2019; Fall 2016, 2017)

- GEOG 597: Independent Study (Spring 2016, 2018; Fall 2017, 2018)
- GEOG 599: Research-Thesis (Spring 2016, 2017, 2018, 2019; Fall 2017, 2018)

University of Cincinnati (Teaching Assistant)

- GEOG 6091: Advanced GIS (Fall 2013)
- GEOG 1001: Introduction to Physical Geography (Spring 2013)
- GEOG 6089: Digital Terrain and Watershed Analysis (Fall 2012)
- GEOG 583: Intermediate Remote Sensing (Spring 2012)
- GEOG 587: Natural Hazards (Fall 2011)
- GEOG 140: Earth from Space (Fall 2010)

Mentoring

Current PhD Advisees at UTK

- Yinan Feng: Fall 2026: Building footprint extraction
- Andy Zhang: Spring 2027: Energy geography
- Kh Shakibul Islam: Spring 2027: Wetland mapping

Current M.A. Thesis Committees at UTK

- Jumbo Wang: Spring 2027: Post-disaster street view image generation
- Dryver Finch: Summer 2026: Using Planet 3-meter imagery to better understand the dynamics of Anthrax on the West Texas landscape

Current Ph.D. Dissertation Committees at UTK

- Yung-ming Tsai: Geography & Sustainability: Geography in a Hybrid Physical-Virtual World–Model and Analysis for Hybrid Space and Place in GIScience
- Hsiang-Chun Chen: Geography & Sustainability: Transportation and human dynamics
- Wanhee Kim: Geography & Sustainability: TBA
- Shabiha Hossain: Geography & Sustainability: TBA
- Mahnaz Meem: Geography & Sustainability: TBA
- Emmanuel Afriyie: Geography & Sustainability: TBA
- Mabood Farhadi: Biosystems Engineering & Soil Science: Leveraging Satellite Remote Sensing for Agricultural Monitoring: Crop Identification, Irrigation Mapping, and Irrigation Event Detection

Past Advisees & Committees

Past M.A. Advisees at UTK (3)

- Tyler Hilyer: 2020–2021
- Dakotah Maguire: Graduated: Spring 2022. Thesis: *Statistical and Spatial Analysis of Hurricane-Induced Power Outage and Restoration.* Placement: Geospatial Data Engineer at the Oak Ridge National Laboratory.
- Kenny Moss: Graduated: Summer 2020. Thesis: *Identifying Smokestacks in Remotely Sensed Imagery via Deep Learning Algorithms.* Placement: Research Scientist at Oak Ridge National Laboratory.

Past M.A. Thesis Committees at UTK (7)

- Jacob Dein: Graduated: Summer 2025. Department of Geography. Dissertation: *Scale Dependence of Bird Distributions in London*
- Angela Price: Graduated: Spring 2025. Department of Biosystems Engineering and Soil Science. Thesis: *The Food Desert Reduction Roadmap: A Food-Energy-Water Nexus Guide for the Appalachian Region*
- Nathan Sturgill: Graduated: Spring 2025. Thesis: *Effects of the Opioid Epidemic on Urban and Rural Counties in Appalachia*
- Zachary Dorminey: Graduated: Summer 2024. Thesis: *A multi-metric approach to Fay-Herriot small area estimation of forests*
- Aakriti Sapkota: Graduated: Summer 2023. Thesis: *Understanding wildfire susceptibility in Nepal in the pre-monsoon season using the Maxent model*
- Morgan Steckler: Graduated: Spring 2023. Thesis: *Unsupervised machine learning of tornado-producing storms in the southeastern United States*
- Alyssa Cannistraci: Graduated: Fall 2020. Thesis: *Tweet diffusion over space and time: A comparison of a winter-weather and tornado-outbreak case study*

Past Ph.D. Dissertation Committees at UTK (6)

- Russ Limber: Graduated: Spring 2025. UTK Bredesen Center. Dissertation: *Modeling River Ice Breakup Throughout Interior Alaska*
- Matthew Longmire: Graduated: Summer 2024. Department of Entomology and Plant Pathology. Dissertation: *Ecological Impact Assessment of Laurel Wilt Disease and Insect Diversity of Sassafras and Northern Spicebush*

- Stephanie Insalaco: Graduated: Spring 2024. Department of Geography. Dissertation: *A Holistic Approach to Understanding Ecosystem Decline in Mosquito Lagoon, Florida*
- Probal Saha: Department of Civil and Environmental Engineering. Dissertation: *Using satellite-derived and model soil moisture to estimate the irrigation withdrawal*
- Jimmy Feng: Graduated: Fall 2022. Dissertation: *Access beyond geographic accessibility: understanding opportunities to human needs in physical and mental space*
- Adam Alsamadisi: Graduated: Summer 2020. Dissertation: *The Nexus of Biogeography and GIScience: Using Emerging Big Data Sources and Multiscale Analysis for Species Distribution Models*

Past Ph.D. Dissertation Committees at Other Universities (2)

- Di Wu: Graduated: Summer 2024. Southern Illinois University. Dissertation: *Improving Hydrologic Connectivity Delineation Based on High-Resolution DEMs and Geospatial Artificial Intelligence*
- Sarigai Sarigai: Graduated: Spring 2024. University of New Mexico. Dissertation: *UniGeoaptialEye: A universal computational and visual framework for sensing geospatial big data using geoAI and geovisualization*

Visiting Scholars (1)

- Donghui Shi: Tongji University, Shanghai, China (2019–2021)

Past M.A. Advisees at Binghamton University (12)

- Duoduo Li: 2018–2019
- Abraham Redie: 2018–2019
- Huihai Wang: 2018–2019
- Yurui Zhang: 2018–2019
- Jian Xu: M.A., 2019. Thesis: *Mapping vegetation dynamics (1985–2017) using Google Earth Engine: A case study in Wuhan, China.* Placement: PhD student at San Diego State University
- Yanan Wu: M.A., 2019. Thesis: *Integration of Earth observations and in situ data for analyzing lake level changes in Minnesota (1990–2016).* Placement: PhD student at the University of Texas at Dallas
- Zeliu Zheng: M.A., 2018. Thesis: *Evaluation of migrants' socio-spatial segregation in cities of China.* Placement: PhD student at Louisiana State University
- Bryan Goodrich: M.A., 2018. Thesis: *Characterizing sectors of the economy in the United States using nighttime light data.*
- Courtney Zirkel: M.A., 2018. Thesis: *After the Paint Dries: The Geography of Art in a Gentrifying Bushwick, Brooklyn.* Placement: Tax Mapper at Nassau County, NY
- Jiaxin Jiang: M.A., 2017. Thesis: *Vernal pool detection using high-resolution LiDAR data and aerial imagery in Hubbardston, Massachusetts.*
- Zhengjie Xie: M.A., 2017. Thesis: *Mapping solar radiation potential: A case study in the midtown Manhattan of New York City.* Placement: Consultant at Futurmaster
- Qi Zuo: M.A., 2017. Thesis: *The impacts of climate and land use changes on streamflow in Minnesota.* Placement: China Science Map-Universe Technology

Past M.A. Thesis Committees at Binghamton University (12)

- Winnie Ngare: Fall 2019
- Brianna Mcadams: Spring 2019
- Amber Jacobson: Spring 2019
- Xiaoxu Pan: Spring 2019
- Yalin Yang: Spring 2019
- Juan Cordova: Spring 2018
- Daniella Madubuike: Spring 2018
- Shane Tripp: Spring 2017
- Jorge Zambrana: Spring 2017
- Huiyu Lin: Spring 2016
- Yiding Cao: Spring 2016
- Alex Simmons: Spring 2016

Past Undergraduate Advisees at Binghamton University (1)

- Tiara A. Rei: Geography Major. Graduated: Fall 2016

Workshops

2025

- Open Source Geospatial Workflows in the Cloud: Interactive visualization of raster and vector data. *AGU Fall Meeting 2025*. New Orleans, LA. December 18, 2025 (1 hour)
- Open Source Geospatial Workflows in the Cloud: Integrating artificial intelligence with geospatial data analysis and visualization. *AGU Fall Meeting 2025*. New Orleans, LA. December 18, 2025 (1 hour)
- Open Source Pipeline to Integrate Drone and Satellite Geospatial Data Products for Ag Apps Workshop. *CANVAS 2025*. Salt Lake City, UT. November 10, 2025 (4 hours)
- Unlocking the Power of GeoAI with Python. *TNView webinar*. September 12, 2025 (2 hours)
- Computer Vision and Artificial Intelligence for Large-Scale Earth Observation Data. *The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)*. Nashville, TN. June 12, 2025 (6 hours)
- Open Science Workshop on Open Code, Open Data, Open Access Funding, Open Results, and Open Publishing. March 10 to April 21, 2025 (5 hours)
- Object Detection from Remote Sensing Imagery with GeoAI. *The 8th Symposium on Geospatial Big Data and Cloud Computing*. April 12, 2025 (1.5 hours)
- Geospatial Data Analysis and Visualization with Earth Engine. *The 8th Symposium on Geospatial Big Data and Cloud Computing*. April 11, 2025 (1.5 hours)
- Modeling population dynamics with AI: A hands-on workshop with the Population Dynamics Foundation Model. *The International Telecommunication Union (ITU)* AI for Good Seminar Series. Feb. 18, 2025 (1.5 hours)
- Mastering remote sensing image segmentation with AI: A hands-on workshop with the Segment Anything Model. *The International Telecommunication Union (ITU)* AI for Good Seminar Series. Feb. 5, 2025 (1.5 hours)

2024

- An Introduction to Cloud-Based Geospatial Analysis with Earth Engine and Geemap. *The American Geophysical Union (AGU) Fall Meeting*. Washington DC. Dec. 9, 2024 (3 hours)
- Cloud Computing and 3D Mapping with Geemap and Leafmap. *Houston Area GIS Day*. Houston, TX. Nov. 21, 2024 (6 hours)
- Open Source Pipeline to Integrate Drone and Satellite Data. *FOSS4G NA*. St. Louis, MO. September 9, 2024 (3 hours)
- Cloud Computing and 3D Mapping with Geemap and Leafmap. *Research Center for Humanities and Social Sciences*, *Taiwan*. August 8, 2024 (4 hours)
- Cloud Computing with Google Earth Engine and GeoAI. *Symposium on Spatiotemporal Data Science: GeoAI for Social Sciences*. Virginia Tech. July 23, 2024 (1.5 hours)
- From Satellites to Solutions – Drought Monitoring with Google Earth Engine. *AMS SatMOC Virtual Satellite Short Course*. July 16, 2024 (3 hours)
- Intro to Earth Engine in Python. *2024 Annual Indiana GIS Conference*. Michigan City, Indiana. May 15, 2024 (6 hours)
- Cloud Computing with Google Earth Engine and Geemap. *TNGIC Annual Conference*. Burns, TN. April 9, 2024 (4 hours)
- Geospatial Cloud Computing with the GEE Python API. *University of Alaska Fairbanks*. Fairbanks, AK. March 21-22, 2024 (8 hours)

2023

- An Introduction to Cloud-Based Geospatial Analysis with Earth Engine and Geemap. *The American Geophysical Union (AGU) Fall Meeting*. San Francisco, California. Dec. 10, 2023 (4 hours)
- Interactive Cloud Computing with Google Earth Engine and Geemap. *NC State GIS Week*. Raleigh, NC. Nov. 17, 2023 (2 hours)
- Automated image segmentation with segment-geospatial. *Annual GIS Day at Purdue University*. West Lafayette, IN. Nov. 9, 2023 (2 hours)
- Intro to Earth Engine in Python. *Geo for Good Summit*. Mountain View, CA. Oct. 9, 2023 (5 hours)
- Interactive cloud computing with Google Earth Engine and geemap. *The City+2023 International Conference*. Perth, Australia. Sept. 9, 2023 (1 hour)
- An Introduction to Cloud-Based Geospatial Analysis with Earth Engine and Geemap. *SciPy 2023*. Austin, Texas. Jul. 10-12, 2023 (4 hours)
- Interactive Geospatial Analysis and Data Visualization with Geemap and Leafmap. *EarthCube 2023*. Los Angeles, California. Jun. 27-28, 2023 (1 hour)
- Interactive cloud computing with Google Earth Engine and geemap. *The AmericaView Membership Meeting*. Lafayette, Louisiana. Mar. 13, 2023 (2 hours)

2022

- Creating Satellite Timelapse Animations and Analyzing Global Land Cover Datasets. *The Fifth Training Workshop on Geospatial Big Data and Cloud Computing*. Nov. 20, 2022 (3 hours)
- Introduction to Earth Engine and Geemap. *Nagoya University, Japan*. Sept. 26, 2022 (4 hours)
- Google Earth Engine and its applications in ecology. *East China Normal University*. Aug. 1-5, 2022 (20 hours)
- Interactive mapping and analysis of geospatial big data using geemap and Google Earth Engine. *Society for Range Management 2022 Annual Meeting*. Feb. 8, 2022 (60 mins)

2021

- Interactive Mapping and Geospatial Analysis with Leafmap and Jupyter. *YouthMappers*. Nov. 9, 2021 (90 mins)
- Interactive Mapping and Geospatial Analysis with Leafmap and Jupyter. *The 3rd ACM SIGSPATIAL International Workshop on Geospatial Data Access and Processing APIs*. Nov. 2, 2021 (30 mins)
- Using Leafmap for Geospatial Analysis and Data Visualization. *FOSS4G 2021*. Sept. 27, 2021 (4 hours)
- Geospatial analysis and cloud computing using open-source GIS. *China University of Mining and Technology*. July 12-16, 2021 (10 hours)
- Introduction to Google Earth Engine and geemap. *The Donana Biological Station, Spanish National Research Council, Spain*. May 12-14, 2021 (15 hours)
- Interactive mapping and analysis of geospatial big data using geemap and Google Earth Engine. *GeoPython 2021*. April 22, 2021 (1.5 hours)

2020

- Big Data in Watersheds: Integrating Wetlands and Floodplains in Hydrologic Modeling. By Adnan Rajib and Qiusheng Wu. *The 7th Interagency Conference on Research in the Watersheds (ICRW)*. November 16, 2020 (3 hours)

2017

- LiDAR, Google Earth Engine & R Statistics. *Sun Yat-sen University*. July 19-21, 2017

2012

- Ohio URISA LiDAR Workshop. *University of Cincinnati*. November 14, 2012
- Ohio URISA Imagery Workshop. *University of Cincinnati*. November 7, 2012

2010

- Ohio URISA LiDAR Workshop. *University of Cincinnati*. June 24, 2010

Invited Talks

(Total: 131; Keynotes: 10)

2026

- Open-Source Geospatial Workflows in Python: From Data Access to Interactive Mapping and GeoAI. *US EPA Open Source Geo Group*. June 11, 2026
- Working with HLS Data in QGIS: Access, Visualization, and Analysis. *NASA's Satellite Needs Working Group (SNWG) HLS Workshop*. May 11, 2026
- Machine Learning and Open-Source tools for Remote Sensing and Geospatial Analysis. *Guest lecture at MIT, Applied Remote Sensing of the Earth course*. May 4, 2026
- Open-Source GeoAI in Action. *GeoAI Working Group Meeting*. April 29, 2026
- Open-Source GeoAI for Earth Observation: Practical Tools for AI-Driven Analysis and Visualization. *Emirati Society of GIS and Remote Sensing (ESGRS) Webinar Series*. April 23, 2026
- Bringing GeoAI to QGIS: Deep Learning Workflows with the Open-Source GeoAI Plugin. *QGIS US Users Group Meeting*. April 21, 2026
- Democratizing GeoAI: Open-Source Tools for AI-Powered Geospatial Analysis and Visualization. *Department of Geography, University at Buffalo*. April 17, 2026
- Leafmap and QGIS: Unlocking TerraScope Geospatial Data. *VITO Radar Insights Seminar Series*. March 5, 2026
- GeoAI: Democratizing Artificial Intelligence for Geospatial Data Science. *Earth and Energy Sciences Seminar, University of Louisiana at Lafayette*. February 11, 2026
- Democratizing GeoAI: Open-Source Tools for AI-Powered Geospatial Analysis and Visualization. *FOSS4G Asia*. January 22, 2026 **(Keynote)**

2025

- GeoAI: Integrating AI with Geospatial Data for Advanced Analysis and Visualization. *GIS Awareness Week, AIRC x Ecologik Institute*. November 23, 2025
- GeoAI: Integrating AI with Geospatial Data for Advanced Analysis and Visualization. *GIS Centre for Health, World Health Organization*. November 20, 2025
- Open Geospatial Data Science in Action: From Interactive Visualization to Scalable Analytics. *School of Integrative Plant Science, Cornell University*. October 30, 2025
- GeoAI: Integrating AI with Geospatial Data for Advanced Analysis and Visualization. *NASA JPL*. October 22, 2025
- Open Publishing in Action: Creating Interactive Books with Jupyter Book and MyST Markdown. *International Open Access Week*. October 21, 2025
- Visualizing NASA OPERA datasets with Leafmap. *NASA OPERA 5th Stakeholder Engagement Workshop*. September 11, 2025
- Automating surface water mapping with AI tools. *Australian Water School*. July 22, 2025

- An Introduction to the GeoAI Python Package: Bridging AI and Geospatial Analysis. *The 16th ISDE International Lectures*. July 10, 2025
- An Introduction to the GeoAI Python Package: Bridging AI and Geospatial Analysis. *MDPI Webinar*. June 25, 2025
- Open Geospatial Data Science in Action: Interactive Visualizations and Data Analytics. *Virginia Tech's Virtual Speaker Series: Data Science Tools in Action*. June 16, 2025
- Open-source tools and open-access data for environmental monitoring – A Demonstration Session. *URISA Alberta Webinar Series*. May 30, 2025
- Open-access geospatial data and open-source AI for disaster response. *Meta's AI and Data for Hurricane Response Workshop*. Austin, TX. May 16, 2025
- Open-Source Software Tools for Interactive Cloud Computing and GeoAI. *Department of Geography, Oklahoma State University*. April 21, 2025
- An Introduction to the GeoAI Python Package: Bridging AI and Geospatial Analysis. *Department of Geography, University of Wisconsin, Madison*. April 15, 2025
- An Introduction to the GeoAI Python Package: Bridging AI and Geospatial Analysis. *The 8th Symposium on Geospatial Big Data and Cloud Computing*. April 11, 2025

2024

- Introduction to the Segment Anything Model (SAM) and SAMGeo. *Taylor Geospatial Institute (TGI) GeoAI Working Group Meeting*. Dec. 5, 2024
- Advancing Remote Sensing Image Segmentation with the Segment Anything Model and SAMGeo. *Houston Area GIS Day.* Houston, TX. Nov. 22, 2024
- Remote Sensing Image Segmentation with SAMGeo. *Department of Geography, The Pennsylvania State University.* Nov. 20, 2024
- Cloud-Native Geospatial in Modern GIS Education. *Cloud-Native Geospatial Forum Virtual Conference.* Nov. 13, 2024 **(Keynote)**
- Open-Source Python Package and Software Development in Geospatial Data Science. *MIT Urban Mobility Lab.* Nov. 6, 2024
- Advancing GeoAI: Harnessing Google Gemini for Geospatial Data Exploration and SAM2 for Remote Sensing Image Segmentation. *The 7th ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery.* Atlanta, GA. October 29, 2024 **(Keynote)**
- Navigating the Intersection of Geospatial Data, Cloud Computing, and Open-Source Solutions. *The Bell Edwards Geographic Data Institute (BEGIN), University of St Andrews, UK.* September 24, 2024
- Geospatial Data Visualization and Analysis in the Cloud: An Open-Source Approach. *H-GAC's Geographic Data Workgroup Meeting.* August 7, 2024
- Mapping Surface Water Dynamics with Cloud Computing and Open Source Software. *UNU-INWEH Science Talk.* July 24, 2024
- Mapping Surface Water Dynamics with Cloud Computing and Open Source Software. *American Institute of Hydrology (AIH).* July 18, 2024
- Cloud Computing and Geovisualization with Open-Source Software. *King's College London.* July 2, 2024 **(Keynote)**
- Cloud Computing and Geovisualization with Open-Source Software. *Guangzhou University.* June 27, 2024
- An Introduction to Geemap. *GEE Developers Nairobi Meetup.* May 23, 2024
- Democratizing Cloud Computing with Open-Access Geospatial Data and Open-Source Tools. *Department of Earth & Environment, Boston University.* Boston, MA. May 1, 2024
- Geospatial Analytics and AI: Leveraging Open Source for Social Good. *AWS Atlassian Geek Talk Series.* March 26, 2024
- Cloud-Based Geospatial Analytics and AI: Unlocking the Power of Open-Source Tools for Environmental Monitoring. *University of Louisiana at Lafayette.* Lafayette, LA. March 14, 2024
- Harnessing Open Source Tools for Cloud-based Geospatial Analysis and Visualization. *Amazon Physical Stores Science Monthly Meeting.* March 7, 2024
- Interactive Search and Visualization of NASA Earth Data. *NASA DAACs Tech Spotlight.* February 26, 2024

2023

- Spatially Empowered: The Geospatial Journey of my Career. *Center for Geospatial Analytics, North Carolina State University.* Raleigh, NC. November 17, 2023
- Open Geospatial Data Science: Making it Accessible to Everyone. Annual *GIS Day at the University of Texas at Austin.* Austin, TX. November 15, 2023 **(Keynote)**
- Exploring the Power of Cloud Computing and Geospatial Analysis: A Beginner's Guide for Everyone. Annual *GIS Day at Purdue University.* West Lafayette, IN. November 9, 2023 **(Keynote)**
- Interactive Geospatial Analysis with Cloud Computing and Open Source Software. *GeoMundus.* October 21, 2023 **(Keynote)**
- Automatic Segmentation of Remote Sensing Imagery with the Segment Anything Model. *TNGIC East Fall Forum 2023*. Chattanooga, TN. October 17, 2023 **(Keynote)**
- Extending Earth Engine's Python experience with geemap. *Geo for Good Summit. Mountain View, CA.* October 11, 2023
- Exploring the Power of Cloud Computing and Geospatial Analysis: A Beginner's Guide for Everyone. *Data Science Symposium at the University of Colorado, Denver.* October 6, 2023 **(Keynote)**

- Fellowship and Award Opportunities for Tennessee Students Working on Remote Sensing Projects. *TNGIC Webinar.* October 3, 2023
- Panel on Training the Next Generation of Geospatial Experts. *Clark Center for Geospatial Analytics Strategic Launch Workshop.* Worcester, MA. September 27, 2023
- Automatic Segmentation of Remote Sensing Imagery with the Segment Anything Model. *Department of Geography & Atmospheric Science, University of Kansas*. September 15, 2023
- An introduction to Earth Engine and geemap. *Geography & Environmental Studies, University of New Mexico.* September 12, 2023
- From Earth to the Cloud: Harnessing Open Source Tools for Cloud-based Geospatial Analysis. *Bureau of Economic Geology, University of Texas, Austin.* September 8, 2023
- Google Earth Engine and its Applications to Earth System Observation and Analysis. *College of Agriculture and Life Sciences, Cornell University.* August 23, 2023
- Automated Segmentation of Remote Sensing Imagery with the Segment Anything Model. *Tensorflow Working Group.* August 9, 2023
- Interactive cloud computing and geospatial analysis with geemap and samgeo. *Department of Interior Remote Sensing Workgroup.* July 31, 2023
- Exploring the Power of Cloud Computing and Geospatial Analysis: A Beginner's Guide for Everyone. *IEEE GRSS Moroccan Chapter Webinar.* June 13, 2023
- Unlocking the Power of Deep Learning Applications Using ArcGIS. *Esri Education Webinar.* May 25, 2023
- Exploring the Power of Cloud Computing and Geospatial Analysis: A Beginner's Guide for Everyone. *Department of Geography & Sustainability, University of Tennessee.* April 27, 2023
- Introduction to Google Earth Engine Python API and geemap. *University of Wyoming.* April 4, 2023
- Geospatial Cloud Computing and Data Visualization with Open Source Software. *Department of Geography & Earth Sciences, University of North Carolina, Charlotte*. March 31, 2023
- Wetland Mapping with Cloud Computing and Open-Source Software. *Department of Civil & Environmental Engineering, Louisiana State University*. March 3, 2023
- Interactive Mapping and Geospatial Analysis with Leafmap. *Department of The Interior Open Source Geospatial Software Subcommittee Meeting*. February 23, 2023
- Cloud Computing and Interactive Mapping with Earth Engine and Geemap. *NASA PO.DAAC Brown-bag seminar*. February 1, 2023
- Interactive computing and data visualization with Earth Engine and geemap. *The Google Earth Engine Team's Lunch and Learn*. January 30, 2023
- Interactive Cloud Computing with Earth Engine and Geemap. *AmericaView's Earth Sensors and Research Committee Meeting*. January 26, 2023
- Estimating flood extent using Google Earth Engine and geemap. *MindsBehindMaps YouTube channel*. January 23, 2023
- Introduction to geemap and leafmap. *FEMA Actuarial and Catastrophic Modeling Branch*. January 13, 2023

2022

- A Comparative Analysis of Global Land Cover Datasets. *Digital Twin and GeoAI workshop*. *The State Key Laboratory of Resources and Environmental Information System (LREIS), Chinese Academy of Sciences*. December 21, 2022
- Introduction to the Dynamic World Global Land Cover Datasets. *The Fifth Training Workshop on Geospatial Big Data and Cloud Computing*. November 18, 2022
- Cloud Computing and Interactive Mapping with Geemap and Leafmap. *Geography & Atmospheric Science, University of Kansas*. November 16, 2022
- Creating Satellite Timelapse Animations Using Earth Engine and Geemap. *Omdena*. October 27, 2022
- Cloud Computing and Data Visualization with Earth Engine and Geemap. *Department of Geosciences, Auburn University*. October 24, 2022
- Cloud Computing and Interactive Mapping with Earth Engine and Geemap. *Manitoba GIS Users Group Annual Conference*. October 18, 2022 **(Keynote)**
- Interactive Cloud Computing and Data Visualization with Earth Engine and Geemap. *Department of Geological and Environmental Sciences, Appalachian State University*. September 30, 2022
- Cloud Computing and Interactive Mapping with Earth Engine and Geemap. *Department of Atmospheric and Earth Science, The University of Alabama in Huntsville*. September 21, 2022
- Introduction to Tennessee View. *The Memphis Area Geographic Information Council (MAGIC)*. September 20, 2022
- Cropland mapping with Google Earth Engine and geemap. *The African Boot Camp: Application of GIS in Agriculture*. September 15, 2022
- LiDAR data analysis and visualization with whitebox and leafmap. *LiDAR workshop on forest ecology, Peking University.* July 28, 2022
- Automated surface water mapping with cloud computing and open-source software. *Virtual Summit in Data Science and Open Science for Aquatic Research (DSOS)*. July 28, 2022
- Interactive mapping and geospatial analysis with geemap and leafmap. *EDF RE Python User Group Meeting*. July 7, 2022

- Reproducible Hydrologic Science with Cloud Computing and Open-source Software. *American Geophysical Union (AGU) Frontiers in Hydrology Meeting*. June 23, 2022
- Introduction to Tennessee View. *The Tennessee Geographic Information Council (TNGIC)*. June 7, 2022
- Using Python for geospatial analysis and interactive mapping. *Geomatics Department at the University of Sine Saloum, Senegal*. May 27, 2022
- Introduction to Google Earth Engine Python API and geemap. *University of Wyoming*. April 5, 2022
- Cloud Computing Platforms for Big Geospatial Data. *NASA Open Source Science for the Earth System Observatory Mission Science Data Processing Study Workshops*. March 1, 2022
- Open Geospatial Data Science with Geemap and Leafmap. *University of El Salvador*. Jan. 26, 2022

2021

- Introducing geemap and interactive web apps. *Geo for Good 2021 Virtual Meetup – Makerspace*. Nov. 19, 2021
- Introducing geemap for geospatial big data analysis. *College of Forest Resources and Environmental Science, Michigan Technological University*. Oct. 18, 2021
- Interactive Mapping and Geocomputation with Geemap and Leafmap. School of Surveying and Geospatial Sciences, *Technical University of Kenya*. Oct. 4, 2021
- Interactive cloud computing using Google Earth Engine and geemap. *Warnell School of Forestry and Natural Resources, University of Georgia*. Sept. 24, 2021
- Interactive Mapping and Geospatial Analysis in the Cloud Using Open-Source GIS. *Canadian Geotechnical Society Webinar*. June 24, 2021
- Introduction to Google Earth Engine Python API and geemap. *University of Wyoming*. March 25, 2021
- Interactive mapping and analysis of geospatial big data in the cloud with geemap and whitebox. *Iowa State University*. Feb. 26, 2021
- Interactive mapping and cloud computing with Google Earth Engine and geemap. *Remote Sensing IGEP Spring Seminar, Virginia Tech*. Feb. 22, 2021
- Interactive mapping and cloud computing with Google Earth Engine and geemap. *Department of Geology and Geography, Georgia Southern University*. Feb. 18, 2021
- Mapping Wetland Inundation Dynamics in the Prairie Pothole Region using Google Earth Engine. *NWI New Mapping Technologies Workshop*. Jan. 26, 2021
- Introduction to geemap: Interactive mapping and cloud computing with Google Earth Engine. *China University of Mining and Technology*. Jan. 10, 2021
- Introduction to Google Earth Engine and geemap. *MDPI Remote Sensing & IJGI Webinar*. Jan. 8, 2021

2020

- Using Google Earth Engine and geemap for interactive mapping and analysis of large-scale geospatial datasets. *The National Geographic Institute of Colombia*. Nov. 26, 2020
- Introduction to Earth Engine and geemap. *College of Forest Resources and Environmental Science, Michigan Technological University*. Nov. 13, 2020
- Earth Engine and geemap. *Tech Talk Lunch and Learn, New Light Technologies, Inc. (NLT)*. Nov. 10, 2020
- Integrating LiDAR data and multi-temporal aerial imagery to map wetland inundation dynamics using Google Earth Engine. *Peking University*. Nov. 8, 2020
- Google Earth Engine and its Applications to Earth System Observation and Analysis. *Dr. Hanqin Tian's Research Group, Auburn University*. Oct. 29, 2020
- Introduction to geemap: A Python package for interactive mapping and analysis with Earth Engine. *Geo for Good Summit 2020 Public Sector Tract Lightning Talk*. Oct. 21, 2020
- Fine-resolution mapping of wetland inundation dynamics using Google Earth Engine. *School of Forestry and Wildlife Sciences, Auburn University*. Oct. 20, 2020
- Interactive mapping and analysis with Google Earth Engine and open-source GIS. *Department of Geography, University of Cincinnati*. Oct. 2, 2020
- Using Google Earth Engine for interactive mapping and analysis of large-scale geospatial datasets. *Department of Geography, Penn State University*. Sept. 25, 2020
- Cloud computing and interactive mapping with geemap, Google Earth Engine, and QGIS. *NASA's International Space Apps Challenge*. Sept. 19, 2020
- Introduction to geemap. *Earth Engine Virtual Meetup*. Sept. 9, 2020
- Using Earth Engine for spatiotemporal analysis and interactive mapping of geospatial big data. *The 1st Global Young Scientist Forum (GYSF).* August 19, 2020
- Using Earth Engine for geospatial time-series analysis: A case study of automated surface water mapping. GeoInsider webinar. July 2, 2020

- Mapping surface water and wetland inundation dynamics using Google Earth Engine. Workshop on machine learning and data fusion for aerial imagery interpretation of land use change. *Northwestern University*. June 10-11, 2020
- Cloud computing and interactive mapping with Earth Engine and open-source GIS. GeoInsider webinar. May 28, 2020
- Using the geemap Python package for interactive mapping with Google Earth Engine. Earth Engine Virtual Meetup. May 6, 2020

2019

- Integration of LiDAR data and aerial imagery for mapping surface water and wetland inundation dynamics. *Appalachian State University.* Boone, North Carolina. November 7, 2019
- Mapping wetland inundation dynamics using Google Earth Engine. *NWI New Mapping Technologies Workshop*. Minneapolis, Minnesota. September 17, 2019
- Mapping wetland inundation dynamics and wetland change using Google Earth Engine. *Wetland Mapping Consortium (WMC) Webinar*. August 21, 2019
- Integration of LiDAR data and aerial imagery for mapping surface water and wetland inundation dynamics. *University of Tennessee.* Knoxville, Tennessee. January 15, 2019

2018

- Integrating LiDAR data and graph theory for terrain analysis and hydrologic connectivity modeling. *University at Buffalo*. Buffalo, New York. May 7, 2018
- Wetland Mapping and Hydrologic Connectivity Modeling Using Multisource Remote Sensing Data. School of Environment and Natural Resources, *The Ohio State University*. Columbus, Ohio. January 9, 2018

2017

- Extracting terrain features and modeling wetland hydrology using LiDAR data. *East China Normal University*. Shanghai, China. July 24, 2017
- Mapping depressional wetlands and modeling hydrologic connectivity using LiDAR data and aerial imagery. *Guangdong Provincial Hydrology Bureau*. Guangzhou, China. July 6, 2017
- Mapping depressional wetlands and modeling hydrologic connectivity using LiDAR data and aerial imagery. School of Geography and Planning, *Sun Yat-sen University*. Guangzhou, China. June 28, 2017
- Environmental Monitoring and Analysis with Geospatial Big Data Powered by Google Earth Engine. In the *Data Science Seminar*. Department of Mathematical Sciences, Binghamton University. April 20, 2017
- GIS and Remote Sensing Applications in Wetland Mapping and Monitoring. In the *Sustainable Communities TAE Colloquium*. Binghamton University. February 2, 2017

2016

- Modeling hydrologic connectivity in wetland landscape using high-resolution LiDAR data. In the *Geography Department Colloquium,* Binghamton University. New York. February 8, 2016

2015

- An automated method to extract surface depressions from LiDAR DEMs. In the *U.S. Environmental Protection Agency (EPA) Office of Research and Development (ORD) Geospatial Sciences User Group Meeting*. Cincinnati, Ohio. July 15, 2015
- Hydrologic and Ecological Analysis of Topographic Structure and Wetland Landscape. In the *School of Architecture & Spatial Sciences Institute*, *University of Southern California*. Los Angeles, California. March 30, 2015
- Contour mapping of depressions in the Prairie Pothole Region. In the *U.S. EPA-USGS Prairie Pothole Collaborative Research Meeting*. USGS, Denver Federal Center, Lakewood, Colorado. March 24, 2015

2014

- Depression analysis in the Pipestem Watershed, North Dakota. In the *U.S. EPA-USGS Prairie Pothole Collaborative Research Webinar*. U.S. EPA, Cincinnati, Ohio. December 3, 2014

2012

- LiDAR remote sensing: technology, data analysis and applications. In the *Ohio Urban & Regional Information Systems Association (URISA) Workshop*. University of Cincinnati. Cincinnati, Ohio. November 14, 2012
- Visualization and analysis of remote sensing imagery in Google Earth and ArcGIS. In the *Ohio Urban & Regional Information Systems Association (URISA) Workshop*. University of Cincinnati. Cincinnati, Ohio. November 7, 2012

2010

- Volumetric change analysis and feature extraction: coastal erosion and deposition volumes, buildings and tree extraction. In *Ohio Urban & Regional Information Systems Association (URISA) Workshop*. University of Cincinnati. Cincinnati, Ohio. June 24, 2010

Conference Proceedings

- **Wu, Q.** (2021). Interactive mapping and geospatial analysis with Leafmap and Jupyter. *In Proceedings of the 3rd ACM SIGSPATIAL International Workshop on APIs and Libraries for Geospatial Data Science (SpatialAPI '21)*. Association for Computing Machinery, New York, NY, USA, Article 1, 1-2. https://doi.org/10.1145/3486189.3490015

Conference Presentations

2025

- **Wu, Q.** (2025). Wetland Mapping with Multi-temporal Aerial Imagery and GeoAI. AGU Fall Meeting. New Orleans, LA. December 18, 2025 (invited)
- **Wu, Q.** (2025). Interactive Charting and 3D Mapping with Earth Engine Data. *Geo for Good Summit NYC*. August 26, 2025
- **Wu, Q.** (2025). SamGeo: A Python Package for Segmenting Geospatial Data with Meta's Segment Anything Model (SAM). *Meta's Open Source AI Summit*. Austin, TX. May 14, 2025

2024

- **Wu, Q.** (2024). Interactive Analysis and Visualization of Geospatial Data with Leafmap. *FOSS4G NA 2024*. St Louis, MO. September 10, 2024
- **Wu, Q.**, Braaten, J., & Roy, S. (2024). Bridging the gap between Earth Engine and the Scientific Python Ecosystem. *SciPy 2024*. Tacoma, WA. July 11, 2024
- **Wu, Q.** (2024). SAMGeo: Automated Segmentation of Remote Sensing Imagery with the Segment Anything Model. *SciPy 2024*. Tacoma, WA. July 11, 2024
- **Wu, Q.** (2024). Interactive Visualization of Geospatial Data with Leafmap. *TNGIC Annual Conference 2024*. Burns, TN. April 11, 2024

2023

- **Wu, Q.**, & Osco, L.P. (2023). Empowering Remote Sensing Image Analysis with Automated Segmentation using the Segment Anything Model. *AGU Fall Meeting 2023*. San Francisco, CA. December 11-15, 2023 (**Invited**)
- **Wu, Q.**, & Greenberg, S. (2023). Interactive Analysis of Satellite Imagery with Earth Engine and Geemap. *SciPy 2023*. Austin, TX. July 12-14, 2023
- **Wu, Q.**, Rajib, A., Lane, C.R., Christensen, J.R., & Golden, H.E. (2023). Developing a national dataset of surface depressions and potential water storage. The 8th Interagency Conference on Research in the Watersheds (ICRW). Corvallis, OR. June 5, 2023

2022

- **Wu, Q.** (2022). Introducing the geospatial Python package for interactive mapping and data visualization. In *Geoinformatics 2022*. August 15, 2022
- **Wu, Q.** (2022). Using leafmap to visualize COG and STAC with minimal coding. In the *Cloud-Native Geospatial Outreach Day*. April 20, 2022

2021

- **Wu, Q.** (2021). Open Geospatial Data Science with Geemap and Leafmap. In the 2021 *American Geophysical Union (AGU) Fall Meeting*. December 17, 2021
- **Wu, Q.** (2021). Interactive mapping and geospatial analysis using the open-source leafmap Python package. *TNGIC Fall Forum*. Nov. 3, 2021
- **Wu, Q.** (2021). Automatic mapping of wetland inundation dynamics in the Prairie Pothole Region using Google Earth Engine. *Society of Wetland Scientists Meeting*. June 1, 2021

2020

- **Wu, Q.** (2020). Fine-Resolution Mapping of Wetland Inundation Dynamics in the Prairie Pothole Region of the United States. In the *2020 American Geophysical Union (AGU) Fall Meeting*. December 7, 2020
- **Wu, Q.**, Lane, C.R., Lang, M., & Golden, H.E. (2020). Fine-resolution mapping of surface water and wetland inundation dynamics in the Prairie Pothole Region. In the *7th Interagency Conference on Research in the Watersheds (ICRW)*. Nov. 16, 2020
- **Wu, Q.**, & Erickson, T. (2020). How does Jupyter enable interactive mapping and analysis of planetary-scale geospatial datasets? In the *JupyterCon Online Conference*. October 12, 2020
- **Wu, Q.** (2020). Automated mapping of surface water in the state of Tennessee using Google Earth Engine cloud computing. *The Tennessee Geographic Information Council (TNGIC) Virtual Fall Forum*. October 7, 2020

2019

- Camponovo, M., & **Wu, Q.** (2019). An Exploration of the Washington Post Opioid Dataset for Tennessee. In the *Engagement and Outreach Conference at the University of Tennessee*. Knoxville, TN. October 29, 2019
- Camponovo, M., & **Wu, Q.** (2019). Opioids in Tennessee: An Exploration of the Washington Post Opioid Dataset for Tennessee. In the *Eastern Regional Tennessee Geographic Information Council (TNGIC) Forum*. Knoxville, TN. October 17, 2019

- **Wu, Q.** (2019). Efficient delineation of nested depression hierarchy in digital elevation models for hydrological analysis using level-set method. In the *Annual Meeting of the American Association of Geographers (AAG)*. Washington D.C. April 3, 2019

2018

- **Wu, Q.**, & Lane, C.R. (2018). Integrating LiDAR data and Google Earth Engine for mapping watershed-scale wetland hydrological dynamics. In the *6th Interagency Conference on Research in the Watersheds (ICRW)*. Shepherdstown, WV. July 23, 2018

2017

- **Wu, Q.** (2017). A new approach for handling nested depressions in digital elevation models for hydrological analysis. In the *25th International Conference on Geoinformatics*. Buffalo, NY. August 2, 2017
- **Wu, Q.** (2017). Application of spatial statistics in crime analysis using R. In the *4th International Conference on Crime Geography and Crime Analysis*. Guangzhou, China. July 6, 2017
- **Wu, Q.**, & Lane, C.R. (2017). A novel algorithm for delineating wetland depressions and mapping surface hydrologic flow pathways using LiDAR data. In the *2017 American Water Resources Association (AWRA) Spring Specialty Conference*. Snowbird, Utah. April 30, 2017
- **Wu, Q.**, (2017). Mapping Depressional Wetlands and Surface Water Pathways Using LiDAR Data. In the *Annual Meeting of the American Association of Geographers (AAG)*. Boston, Massachusetts. April 5, 2017

2016

- **Wu, Q.**, & Lane, C.R. (2016). Delineation of Nested Wetland Catchments and Modeling of Hydrologic Connectivity Using LiDAR Data and Aerial Imagery. In the *2016 American Geophysical Union (AGU) Fall Meeting*. San Francisco, California. December 12, 2016
- **Wu, Q.** (2016). Automated delineation of karst sinkholes from LiDAR-derived digital elevation models. In the *Annual Meeting of the American Association of Geographers (AAG)*. San Francisco, California. March 29, 2016

2015

- **Wu, Q.** (2015). Automated sinkhole mapping based on high-resolution topographic data. In the *Annual Meeting of the Middle States Division of the American Association of Geographers (AAG)*. Binghamton, New York. Oct. 2, 2015
- **Wu, Q.**, & Lane, C.R. (2015). Depressional Wetland Mapping in the Prairie Pothole Region. In *Esri User Conference*. San Diego. July 20, 2015
- **Wu, Q.**, & Liu, H. (2015). A localized contour tree method for deriving topological and geometric information of surface depressions based on LiDAR digital elevation models. In Remote Sensing Specialty Group's Student Paper Competition, *Annual Meeting of the American Association of Geographers (AAG)*. Chicago. April 21, 2015 (**Finalist**)

2014

- Liu, H., **Wu, Q.**, & Gao, Y. (2014). Coastal geomorphological change analysis based on big LiDAR remote sensing data. In the *22nd International Conference on Geoinformatics*. Kaohsiung, Taiwan. June 25, 2014
- **Wu, Q.**, & Liu, H. (2014). Kriged Kalman filtering for spatiotemporal soil moisture estimation. In the *Annual Meeting of the American Association of Geographers (AAG)*. Tampa, Florida. April 8, 2014

2013

- **Wu, Q.**, & Liu, H. (2013). Evaluation of SMOS Level 3 soil moisture products over the continental U.S. using in situ monitoring networks. In the *Annual Meeting of the American Association of Geographers (AAG)*. Los Angeles. April 9, 2013
- **Wu, Q.**, & Liu, H. (2013). Evaluation of SMOS Level 3 soil moisture products using the International Soil Moisture Network. In *University of Cincinnati 2013 Graduate School Poster Forum's Student Poster Competition*. University of Cincinnati. March 1, 2013 (**Winner, 1st Place**)

2012

- Liu, H., & **Wu, Q.** (2012). Assessment of storm-induced coastal morphological changes and damage using repeat LiDAR remote sensing surveys. In *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. Munich, Germany. July 22, 2012
- **Wu, Q.**, & Liu, H. (2012). Analysis of spatiotemporal variability of soil moisture in the Ohio River Basin using L-band passive microwave data. In the *Annual Meeting of the American Association of Geographers (AAG)*. New York. February 24, 2012

2011

- **Wu, Q.**, Liu, H., & Gao, Y. (2011). A scale-space approach to beach profile feature extraction and change analysis. In the *Annual Meeting of the American Association of Geographers (AAG)*. Seattle, Washington. April 12, 2011

2010

- **Wu, Q.**, & Liu, H. (2010). Object-oriented representation and analysis of coastal changes for hurricane-induced damage assessment. In the *OhioView SATELLITES Geospatial Technology Conference Student Poster Competition*. Perrysburg, Ohio. April 27, 2010 (**Winner, 2nd Place**)

- **Wu, Q.**, & Liu, H. (2010). Object-oriented representation and analysis of coastal changes for hurricane-induced damage assessment. In the Geographic Information Systems and Science Specialty Group's Student Paper Competition, *Annual Meeting of the American Association of Geographers (AAG)*. Washington D.C. April 14, 2010 (**Winner, 1st Place**)

Professional Services

- 2024–2026: Cloud-Native Geospatial Forum (CNG) Founding Editorial Board Member
- 2023–2025: NASA Lifelines Advisory Committee
- 2022–2023: NASA Transform to Open Science (TOPS) Community Panelist

Institutional Services

Department of Geography & Sustainability, UTK

- 2024–present: Director of Graduate Studies
- 2023: Chair, GIS Lab Manager Search Committee
- 2022–2024: Member, Strategic Planning Committee
- 2021–2024: Associate Director, Graduate Program/Admission Committee
- 2020–present: Chair & Webpage Editor, Web Page and Social Media Committee
- 2019–present: Member, Technology/Tech Fee Committee
- 2019–present: UCGIS delegate
- 2021: Physical Geographer Search Committee
- 2021: Coordinator, Visiting Speakers/Colloquium 501 (Spring 2021)
- 2019–2021: Member, Special Event Coordinating Committee
- 2020–2022: Team Leader, Big Orange Family Campaign
- 2019–2020: Member, Graduate Program/Admission Committee
- 2019–2020: Member, Curriculum Committee
- 2019–2020: Community Urban Geography Search Committee

University of Tennessee

- 2026–present: Steering Committee Member, Federal Statistical Research Data Center
- 2023: Reviewed 18 nominations for the 2023–2024 Endowed Graduate School Fellowships

Department of Geography, Binghamton University

- 2018–2019: Graduate Program Director
- 2018–2019: Chair, Graduate Committee
- 2017–2019: Geography Library Representative
- 2015–2019: Member, GIS Committee
- 2015–2019: Member, Honors Committee
- 2017–2018: Visiting Assistant Professor Search Committee
- 2016–2018: Graduate Co-Director
- 2015–2018: Member, Graduate Committee
- 2015–2018: Member, Sustainability Committee
- 2015–2019: Organizer, website designer, & webmaster for Annual GIS Day

Binghamton University

- 2018–2019: Affiliated Faculty, Chesapeake Watershed Unit of the Cooperative Ecosystem Studies Units (CESU)
- 2017–2019: Member, Organized Research Center for Imaging, Acoustics, and Perception Science (CIAPS)
- 2017–2019: Member, Data Science Transdisciplinary Working Group
- 2015–2019: Member, Sustainable Communities Transdisciplinary Areas of Excellence
- 2016: Departmental Representative, Spring 2016 Commencement Ceremony

Disciplinary Services

Services on Professional Society Committees

- 2022–2025: Member, Research Committee, UCGIS
- 2022–2025: Member, Education Committee, UCGIS
- 2021–2024: Member, Membership Committee, American Association of Geographers (AAG)
- 2021–2025: Chair, Education Committee, International Association of Chinese Professionals in Geographic Information Sciences (CPGIS)
- 2012–2013: Student Councilor, GIS Specialty Group, AAG. Reviewed 26 student papers for the AAG GIS Specialty Group Student Paper Competition

Journal Editorial Boards

- 2023–2025: Associate Editor, *International Journal of Applied Earth Observation and Geoinformation*, **256**
- 2016–2025: Associate Editor, *Wetlands*, Springer Nature, **114**
- 2022–2024: Editorial Board Member, *Journal of Remote Sensing*, **8**
- 2018–2023: Associate Editor, *Remote Sensing*, MDPI, **156**
- 2016–2019: Editor, *Cogent Geoscience*, Taylor & Francis, **2**
- 2016–2018: Editorial Board Member, *Remote Sensing*, MDPI, **50**

Journal Themed Issues

- 2026–2027: Guest Editor, *Remote Sensing of Environment*, Special Issue – Geospatial Foundation Models for Advancing Remote Sensing of Environment, Le Wang, Sujit Roy, Fuxun Yu, Chunyuan Diao
- 2022–2023: Guest Editor, *Frontiers in Marine Science*, Special Issue – Remote Sensing for Coastal Sustainability, Chao Chen, Xiyou Hou
- 2021–2022: Guest Editor, *Remote Sensing*, Special Issue – Remote Sensing and Geospatial Approaches for Studying the Environment Affected by Human Activities, Jun Li, Xinyi Shen, Chengye Zhang
- 2021–2022: Guest Editor, *Journal of Remote Sensing*, Special Issue – Remote Sensing for Environmental and Societal Changes using Google Earth Engine, Jingwei Dong, Nicholas Clinton, Gennadii Donchyts, Le Yu, Yelu Zeng
- 2020–2021: Guest Editor, *Remote Sensing*, Special Issue – Remote Sensing of Dryland River Systems, Jiaguang Li, Laurence Hawker, Stephen Tooth
- 2020–2021: Guest Editor, *Remote Sensing*, Special Issue – Remote Sensing for Wetland Inventory, Mapping and Change Analysis, Meisam Amani, Brian Brisco
- 2019–2020: Guest Editor, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, Special Issue – Cloud Computing in Google Earth Engine for Remote Sensing, Meisam Amani, Xiangming Xiao, Le Yu, Murali Gumma
- 2016–2017: Guest Editor, *Remote Sensing*, Special Issue – Remote Sensing of Climate Change and Water Resources, Charles Lane, Melanie Vanderhoof, Chunqiao Song
- 2016–2017: Guest Editor, *Remote Sensing*, Special Issue – Remote Sensing for 3D Urban Morphology, Bailang Yu, Lei Wang

Journal Reviewer

Reviewed **184** times for 43 journals since 2015 (Verified Review Record)

- 34: *Remote Sensing*
- 15: *GIScience & Remote Sensing*
- 13: *Wetlands*
- 9: *Remote Sensing of Environment*
- 8: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*
- 8: *ISPRS International Journal of Geo-Information*
- 8: *Transactions in GIS*
- 6: *Sustainability*
- 5: *Annals of the American Association of Geographers*
- 5: *International Journal of Remote Sensing*
- 5: *Remote Sensing Letters*
- 4: *Computers & Geosciences*
- 4: *Journal of Hydrology*
- 3: *Annals of GIS*
- 3: *Catena*
- 3: *International Journal of Geographical Information Science*
- 3: *ISPRS Journal of Photogrammetry and Remote Sensing*
- 3: *Journal of Geographic Information System*
- 3: *Journal of Spatial Science*
- 3: *Journal of The American Water Resources Association*
- 3: *Physical Geography*
- 3: *Water*
- 2: *Frontiers of Earth Science*
- 2: *Geomorphology*
- 2: *Hydrological Sciences Journal*
- 2: *Hydrology and Earth System Sciences*
- 2: *International Journal of Applied Earth Observation and Geoinformation*
- 2: *Journal of Coastal Research*
- 2: *Journal of Meteorological Research*

- 2: *Remote Sensing Applications: Society and Environment*
- 2: *Sensors*
- 1: *Applied Geography*
- 1: *Computational Urban Science*
- 1: *Computers, Environments and Urban Systems*
- 1: *Earth System Science Data*
- 1: *EGUsphere*
- 1: *International Journal of Geospatial and Environmental Research*
- 1: *Journal of Applied Remote Sensing*
- 1: *Journal of Earth Observation and Geospatial Applications*
- 1: *Journal of Geophysical Research – Earth Surface*
- 1: *Journal of Hydrologic Engineering*
- 1: *Journal of Mountain Science*
- 1: *Scientific Reports*
- 1: *Stochastic Environmental Research and Risk Assessment*
- 1: *Tehnicki Vjesnik – Technical Gazette*
- 1: *WIREs Water*

Grant/Workshop Proposal Reviewer

- 2025: Louisiana Board of Regents Support Fund, 1
- 2024: NASA ROSES 2023, 1
- 2024: Seed grant at School of Emerging Technologies (SET) at Towson University, 1
- 2023: NASA FINESST Program, 1
- 2023: US EPA Chesapeake Bay Program, 3
- 2023: Natural Sciences and Engineering Research Council of Canada (NSERC), 1
- 2022: UTK Global Catalyst Faculty Research Grants, 3
- 2022: Amazon Research Awards program, 4
- 2022: NASA Terrestrial Hydrology Program Panelist, 9
- 2021: National Science Foundation (NSF), 1
- 2020: International Center for Integrated Mountain Development (ICIMOD), 1
- 2020: U.S. Army Corps of Engineers' Engineer Research and Development Center (ERDC), 1
- 2019: NASA Postdoctoral Program, 2

Tenure Promotion Reviewer

- 2025: Cornell University, 1

Conference Manuscript/Proposal Reviewer

- 2024: ICLR 2024 Workshop on Machine Learning for Remote Sensing, 5
- 2023: ICLR 2023 Workshop on Machine Learning for Remote Sensing, 3

International Conference Session Organizer

- 2025: Session Convener, Open Source Geospatial Workflows in the Cloud. AGU Fall Meeting 2025. New Orleans, LA. December 15–19, 2025
- 2019: Session Organizer, Emerging Spatial Techniques for Hydrological and Hydrogeological Modeling, AAG. Washington, D.C., April 3, 2019
- 2017: Session Chair, Spatial Analysis and Optimization, The 25th International Conference on Geoinformatics. Buffalo, New York. August 2, 2017
- 2017: Session Organizer, Using GIS and Remote Sensing Approaches to Inform Aquatic System Connectivity, AWRA 2017 Specialty Conference. Snowbird, Utah. April 30, 2017
- 2016: Session Chair, Immigrant Receptivity, Race, Ethnicity & Place Conference. Kent State University. September 21, 2016

Other Service Activities

- 2020–2021: Space Apps Challenge 2021 Judge. Reviewed 6 projects

Media & Outreach

Social Media

Total followers: 230K+

- LinkedIn (@giswqs): 90K+

- YouTube (@giswqs): 60K+
- Twitter (@giswqs): 50K+
- Facebook (@opengeos): 18K+
- GitHub (@giswqs): 8K+
- Bluesky (@giswqs.bsky.social): 4K+

Media Coverage

- 2026-04-17: The NDS Show - The AI Revolution in Geospatial Intelligence (Why Everything Is About to Change)
- 2026-03-02: Spatial Signals Podcast: Sleep Is Highly Overrated with Qiusheng Wu
- 2025-09-10: Mat Forrest – From Leafmap to GeoAI: Open Source, Education, and What's Next with Dr. Qiusheng Wu
- 2025-09-03: AWS Public Sector Blog - Interactive access and visualization of geospatial data from the AWS Open Data Program
- 2025-08-05: CNG Editorial Board Spotlight – Q&A
- 2025-07-02: The Leanpub Podcast Feat. Qiusheng Wu, Author of Introduction to GIS Programming
- 2024-05-06: MotherDuck Monthly Newsletter – Featured Community Member
- 2024-04-30: Building Interactive Geospatial Web Apps with Leafmap and Streamlit
- 2024-03-15: MindsBehindMaps podcast – Qiusheng Wu: Building & Sharing Open Source Software
- 2024-03-11: Cloud-Native Geospatial Foundation blog post
- 2024-01-09: MapScaping Podcast – Geemap
- 2023-10-26: Python Powers Up: The Rise of the Python API for Earth Engine
- 2023-10-24: Exploring Geospatial Data Visualization
- 2023-08-29: 99 Data Influencers to Follow 2023
- 2023-06-15: International Geospatial Innovation Award
- 2023-06-05: Awesome People in EO
- 2023-03-14: How to use free satellite data to monitor natural disasters and environmental changes
- 2022-11-04: UTK Global Engagement Champion
- 2022-10-24: UTK News – Amazon Selects Professor to Tackle High-Impact Technical Challenges
- 2022-07-21: Using Streamlit to build a popular geospatial application
- 2022-02-28: Interview with NASA Landsat Science
- 2021-12-25: Creating satellite timelapse with Streamlit and Earth Engine
- 2021-11-08: Streamlit App of the Month
- 2021-03-18: MapScaping Podcast – Introducing Google Earth Engine
- 2020-07-19: The 1st Global Young Scientist Forum
- 2020-05-18: PyDev of the Week, Mouse vs Python