

ZHENLONG LI

Associate Professor, Department of Geography
Director, Geoinformation and Big Data Research Laboratory
The Pennsylvania State University
202 Walker Building
University Park, PA 16802, USA
Email: zhenlong@psu.edu
<https://sites.psu.edu/giscience>
[Google Scholar](#) | [ResearchGate](#)

EDUCATION

- **Ph.D.** 2012 – 2015 Earth Systems and Geoinformation Sciences (with Distinction), George Mason University, VA, USA
- **M.S.** 2008 – 2010 Earth System Science, George Mason University, VA, USA
- **B. S.** 2002 – 2006 GIS and Remote Sensing, Wuhan University, China

PROFESSIONAL EXPERIENCE

- 2024 – present: Associate Professor, Department of Geography, The Pennsylvania State University
- 2024 – present: Director, Geoinformation and Big Data Research Lab, The Pennsylvania State University
- 2020 – 2023: Associate Professor, Department of Geography, University of South Carolina
- 2022 – 2023: Director, Center for GIScience and Geospatial Big Data (CeGIS), University of South Carolina
- 2015 – 2020: Assistant Professor, Department of Geography, University of South Carolina, Columbia, SC, USA
- 2022 – 2023: Co-Lead of Social Media Core and Founding Core Member (since 2019), USC Big Data Health Science Center
- 2021-2022: Director of Undergraduate Studies, Department of Geography, University of South Carolina, Columbia, SC, USA
- 2015 – 2023: Director, Geoinformation & Big Data Research Laboratory (GIBD), Department of Geography, University of South Carolina; Faculty Member, Hazards &

Vulnerability Research Institute; Faculty Associate, South Carolina Smart State Center for Healthcare Quality

- 2012 - 2015: Graduate Research and Teaching Assistant, Department of Geography and Geoinformation Sciences, George Mason University, VA, USA
- 2011 - 2012: Manager and Chief GIS Engineer, Department of Research and Development, SeaSky Geomatics Technology Inc., Harbin, China
- 2010 - 2011: GIS Engineer, Heilongjiang Bureau of Surveying and Mapping, Harbin, China
- 2007 - 2010: Visiting Research Scholar, Center of Intelligent Spatial Computing for Water/Energy Science, George Mason University, VA, USA
- 2006 - 2007: GIS Developer, Heilongjiang Bureau of Surveying and Mapping, Harbin, China

HONORS AND AWARDS

- Peter and Bonnie McCausland Faculty Fellowship, College of Arts and Sciences, University of South Carolina, 2020-2023
- Geospatial World 50 Rising Stars, Geospatial Media and Communications, 2021
- Breakthrough Star Award, University of South Carolina, 2020
- NSF Travel Award, UCGIS Symposium and summer school, Theme: Collaborative Problem Solving with CyberGIS and Geospatial Data Science, UIUC, Champaign, IL/Arlington, VA, US, 2017
- USGIF/NVIDIA Essay Challenge Award (with Ning H. and Wang S), 2017
- USNC/NSF Travel Award, 28th International Cartographic Conference, Washington, DC, US, 2017
- Outstanding Graduate Ph.D. Award, Department of Geography and Geoinformation Science, George Mason University, 2015
- Raskin Scholarship, Federation of Earth Science Information Partners (ESIP), 2014
- Top-5 Finalist, Rob Raskin Mashup Mapping Student Competition, Association of the American Geographers, 2013
- Extraordinary Achievements of Student Research, Hubei, China, 2004
- Outstanding Student Scholarship, Wuhan University, China, 2003, 2005

RESEARCH GRANTS

External Funding

1. 2023-2024, Role: **PI**. Developing a Novel Wheelchair Mobility Index for Wheelchair Users using Street View Imagery and Artificial Intelligence, NaNDA at University of Michigan/NIH, \$21,130
2. 2023-2025, Role: **Co-PI** (PI: Yang X.) Patterns and predictors of racial/ethnic disparities in HIV care continuum in the South, National Institutes of Health (NIH), \$409,637
3. 2023-2028, Role: **Co-I** (PI: Qiao S.), The impacts of HIV-related service interruption during COVID-19 pandemic in South Carolina, R01, National Institutes of Health (NIH), \$3,521,311. (\$571,377 to Penn State)
4. 2023-2025, Role: **Institutional PI**. (PI: Yan G. at Missouri S&T), Developing a SMART Geospatial Tool to Classify Building Archetype at Community Level towards Digital-Twins of Disaster Resilience (DTDR), Taylor Geospatial Institute, \$200,000 (\$75,000 to Penn State)
5. 2023, Role: **PI**. Accessibility Analysis and Visualization of the Children and Youth Foster Care in South Carolina, South Carolina Department of Social Services (SCDSS), \$34,479
6. 2023-2024, Role: **Co-I** (PI: Li X., Zhang J.), Visualizing and predicting new and late HIV diagnosis in South Carolina: A Big Data approach, National Institutes of Health (NIH), \$699,122 (\$114,391 to Penn State)
7. 2023-2024, Role: **PI** (Co-Is: Kaczynski A., Qiao S., Olatosi B., Zhang J., Li X.). Examine the geographic and racial disparities of COVID-19 impact on obesity-related behaviors using cellphone-based place visitation data, Social, Behavioral, & Economic COVID Coordinating Center, University of Michigan, \$29,948
8. 2022-2023, Role: **PI** (Co-PI: Wang C.), Creating a GIS-Based Siting Tool for South Carolina Mariculture Site Selection, NOAA Sea Grant Consortium at South Carolina \$52,620
9. 2022-2023, Role: **Co-I** (PI: Li X., Co-PI: Olatosi B.), Delivering Comprehensive and Sustainable HIV/AIDS Clinical and Community Services to Achieve HIV Epidemic Control in Subnational Units in Nigeria (USC Subaward), Centers for Disease Control and Prevention (CDC), \$90,000
10. 2020-2022, Role: **PI** (Co-PI: Porter D. and Li X.), RAPID: Monitoring the Spatial Spread of COVID-19 through the Lens of Human Movement using Big Social Media Data, National Science Foundation (NSF), 2028791, \$108,717
11. 2021-2026, Role: **Co-I** (with Weissman S., Hu J., Li X.). MPI: Bankole Olatosi & Jiajia Zhang, Patterns and Predictors of Viral Suppression: A Big Data Approach, National Institutes of Health (NIH), R01AI164947, \$3,557,900

12. 2020-2023, Role: **Co-PI** (with Zhang J., Weissman S., Hikment N., Hu J.). PI: Li X. & Olatosi B., Big Data Driven Clinical Informatics & Surveillance - A Multimodal Database Focused Clinical, Community, & Multi-Omics Surveillance Plan for COVID19, National Institutes of Health (NIH), 3R01AI127203-04S1, \$1,252,550
13. 2020-2021, Role: **PI**, XSEDE Startup Resource Allocation for A Scalable Online Visual Analytic System for Big Climate Data Analysis, National Science Foundation (NSF), SES200001, \$1,051
14. 2019-2023, Role: **Co-I** (with Weissman S., Hu J., Zhang J.) MPI: Li X. & Olatosi B., Big Data Analytics of HIV Treatment Gaps in South Carolina: Identification and Prediction, National Institutes of Health (NIH), R01AI127203, \$3,259,978
15. 2018-2019, Role: **PI**, Social Sensing of Disaster Extents and Impacts of Hurricane Florence, Horne LLP, 13540-19-49715, \$5,000
16. 2016-2017, Role: **PI** (Co-I: Hu F.), Prototyping a Cloud-based Spatial Web Portal for Parallel Analytics of Big Climate Data, Federation of Earth Science Information Partners (ESIP), \$6,981
17. 2014-2015, Role: **Co-PI** (PI: Yang C.), Developing a Hadoop-based Middleware for Handling Big Climate Data. NASA/NSF, \$45,000
18. 2013, Role: **Co-PI** (PI: Yang C.), Advanced Certificate for Geoinformation Sciences, NASG, \$70,000
19. 2011-2012, Role: **PI**, Geospatial Web Services Discovery and Integration based on Tianditu, China Ministry of Education, \$3,500

Internal Funding

20. 2023-2024, Role: **PI** (Advisee: Ning H.), Neighborhood Mobility Assessment for Wheelchair Users using Street View Imagery and Artificial Intelligence, USC SPARC Program, 135400-23-62713, \$4,992.
21. 2022-2023, Role: **PI** (Co-Is: Qiao S., Olatosi B., Zhang J.) Developing a novel network-based big data approach to measure healthcare utilization disparity: A feasibility study, BDHSC Pilot Project Program, BDHSC-PP2022-16, \$30,000
22. 2022-2023, Role: **PI** (Co-Is: Qiao S., Li X., Olatosi B., Zhang J.) A novel data-driven approach to empirically link structural racism and health access and utilization in South Carolina, UofSC OVRP Racial Justice and Equity Research Program, \$14,981
23. 2020-2023, Role: **PI** (Co-PI: Kupfer J.), Rapid Estimation of Visitation Activities in U.S. National Parks by Mining Big Social Media Data, USC ASPIRE Program, \$14,846
24. 2021-2023, Role: **Co-PI** (PI: Qiao S.), Identifying a COVID-19 patient cohort based on Twitter data for PASC symptoms analysis, BDHSC Pilot Project Program, \$34,000
25. 2020-2022, Role: **PI** (Co-PI: Olatosi B., Li X.), A Preliminary Study of using Social Media to Monitor the Spatial Propagation of COVID-19 and Quantify the Effectiveness of the

- Control Measures, USC COVID-19 Internal Funding Initiative, \$13,017
26. 2019-2023, Role: **Co-I** (PI: Li X.), Big Data Health Science Center (BDHSC), University of South Carolina Excellence Initiative, my share of funding: ~\$100,000 (support of one Ph.D. student)
 27. 2019-2020, Role: **PI** (Advisee: Jiang Y.), Analyzing Human Mobility Patterns during Hurricane Matthew Evacuation, USC SPARC Program, \$5,000
 28. 2017-2019, Role: **PI**, Enhancing Situational Awareness by Mining Big Social Media Data in Near-real Time for Disaster Management: A CyberGIS Approach, ASPIRE Program, \$14,861
 29. 2018, Role: **PI**, Prototyping a Near Real-time Flood Mapping System with Social Sensing and Big Data Computing, CAS Faculty Research Initiative, \$3,400
 30. 2017-2018, Role: **Co-PI** (PI: Karami A.) Computational Analysis of the US 2016 Presidential Election in Social Media. USC Office of the Provost, \$15,019
 31. 2017, Role: **PI** (Advisee: Newsome D.), When, Where, and Who: Mining Billions of Tweets to Understand Celebration Patterns of US Holidays, Magellan program, \$3,000
 32. 2016-2017, Role: **PI**. Developing a High-Performance Query Analytical Framework to Support Large Scale Climate Data Analysis, ASPIRE Program, \$14,457
 33. 2015-2016, Role: **PI** (Co-I: Wang C., Emrich C., Guo D.), Spatiotemporal Dynamics of Flood Impact by Integrating Satellite, VGI, and Social Media Data: Rapid Assessment of the October Flood, USC Floods Seed Grant, \$18,477
 34. 2015-2016, Role: **Co-PI** (PI: Karami A.), A Computational Framework for Tracking Reports, Opinions, and Feelings of People in Social Media Before, During and After a Natural Disaster, USC Floods Seed Grant, \$12,000

PUBLICATIONS

Edited Books

1. **Li Z.**, Huang Q., Emrich C. (eds.) (2021) *Social Sensing and Big Data Computing for Disaster Management*, Routledge/Taylor & Francis, ISBN 978-0-367-61765-3. 204 pages
2. **Li Z.**, Tang W., Huang Q., Shook E., Guan Q. (eds.) (2020) *Big Data Computing for Geospatial Applications*, MDPI, ISBN 978-3-03943-244-8. 222 pages
3. Yang C., Yu M., Huang Q., **Li Z.**, Sun M., Liu K. et al. (2017) *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, ISBN-13 978-1466510081. 328 pages
4. Yang C., Huang Q., **Li Z.**, Xu C., Liu K. (eds.), (2013) *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis. ISBN-13 978-1466593169. 357 pages

Journal Special Editions

5. **Li Z.**, Lai S., Stewart K., Huang B., Li X. (guest editors) (2024). Harnessing Geospatial Big Data for Infectious Diseases, *International Journal of Applied Earth Observation and Geoinformation* (Elsevier)
6. Li X., Huang X., **Li Z.** (guest editors). (2024). Harnessing the Geospatial Data Revolution for Promoting Sustainable Transport Systems. *ISPRS International Journal of Geo-Information*
7. Konecny M., Shen J., **Li Z.** (guest editors) (2021). GIScience for Risk Management in Big Data Era, *ISPRS International Journal of Geo-Information*

Articles in peer-reviewed journals (graduate students or postdocs whose work I have supervised as advisor or committee member/mentor are underscored; * denotes correspondence)

1. **Li Z***, Ning H., Jing F., Lessani M.N. (2024) Understanding the bias of mobile location data across spatial scales and over time: a comprehensive analysis of SafeGraph data in the United States, *Plos One* (in press)
2. Lessani N., **Li Z***, Jing F., Qiao S., Zhang J., Olatosi B., Li X., (2024) Human mobility and the infectious disease transmission: A systematic review, *Geo-spatial Information Science*. 1-28. <https://doi.org/10.1080/10095020.2023.2275619>
3. **Li Z***, Huan N. (2023). Autonomous GIS: the next-generation AI-powered GIS, *International Journal of Digital Earth*. <https://doi.org/10.1080/17538947.2023.2278895>
4. Zeng C., Zhang J., **Li Z.**, Sun X., Ning H., Yang X., Weissman S., Olatosi B., Li X, (2023) Residential segregation as a barrier to county level COVID-19 booster coverage in Deep South: Surveillance report and ecological study, *JMIR Public Health and Surveillance*. <https://doi.org/10.2196/44257>
5. Shi F., Zhang J., Yang X., Sun X., **Li Z.**, Weissma S., Olatosi B., Li X., (2023) Understanding social risk factors of county-level disparities in COVID-19 tests per confirmed case in South Carolina using statewide electronic health records data, *BMC Public Health*. <https://doi.org/10.1186/s12889-023-17055-y>
6. Xu R., Huang X., Zhang K., Lyu W., Ghosh D., **Li Z.**, Chen X., (2023) Integrating human activity into food environments can better predict cardiometabolic diseases in the United States, *Nature Communications*. <https://doi.org/10.1038/s41467-023-42667-8>
7. **Li Z***, Qiao, S., Ning H., Sun X., Zhang, J., Li, Z., Olatosi, B., Li, X. (2024). Place visitation data reveals the geographic and racial disparities of COVID-19 impact on HIV service utilization in Deep South. *AIDS and Behavior*. <https://doi.org/10.1007/s10461-023-04163-4>
8. Qiao, S., Zhang, J., **Li Z.**, Olatosi, B., Weissman, S., & Li, X. (2024). The Impacts of HIV-Related Service Interruptions During the COVID-19 Pandemic: Protocol of a Mixed Methodology Longitudinal Study. *AIDS and Behavior*, 1-16.

<https://doi.org/10.1007/s10461-023-04138-5>

9. **Jing, F., Li, Z***, Qiao, S., **Ning, H.**, Zhou, S., & Li, X. (2023). Association between immigrant concentration and mental health service utilization in the United States over time: A geospatial big data analysis. *Health & Place*, 83, 103055. <https://doi.org/10.1016/j.healthplace.2023.103055>
10. Lu J., Huang X., Kupfer J., Xiao X., **Li Z.**, Wei H., Wang S., Zhu L., (2023). Spatial, temporal, and social dynamics in visitation to U.S. national parks: A big data approach. *Tourism Management Perspectives*. 48, 101143. <https://doi.org/10.1016/j.tmp.2023.101143>
11. **Shi, F.**, Zhang, J., Zeng, C., Sun, X., **Li, Z.**, Yang, X., ... & Li, X. (2023). County-level variations in linkage to care among people newly diagnosed with HIV in South Carolina: A longitudinal analysis from 2010 to 2018. *Plos one*, 18(5), e0286497. <https://doi.org/10.1371/journal.pone.0286497>
12. Wang, S*., **Ning, H***., Huang, X., Xiao, Y., Zhang, M., Yang, E. F., Sadahiro Y., Liu Y., **Li Z.**, Hu T., Fu X., Li Zi., Zeng, Y. (2023). Public surveillance of social media for suicide using advanced deep learning models in Japan: time series study from 2012 to 2022. *Journal of Medical Internet Research*, 25, e47225. <https://doi.org/10.2196/47225> (* these authors contributed equally)
13. Gao, G., Ye, X., Li, S., Huang, X., **Ning, H.**, Retchless, D., & **Li, Z.** (2023). Exploring Flood Mitigation Governance by Estimating First-Floor Elevation via Deep Learning and Google Street View in Coastal Texas, *Environment and Planning B: Urban Analytics and City Science*. <https://doi.org/10.1177/239980832311175>
14. Giannouchos, T. V., **Li, Z.**, Hung, P., Li, X., & Olatosi, B. (2023). Rural-Urban Disparities in Hospital Admissions and Mortality Among Patients with COVID-19: Evidence from South Carolina from 2021 to 2022. *Journal of Community Health*, 1-10. <https://doi.org/10.1007/s10900-023-01216-6>
15. Yang, Y., Chen, X., Gao, S., **Li, Z.**, Zhang, Z., & Zhao, B. (equal contribution among authors) (2023). Embracing geospatial analytical technologies in tourism studies. *Information Technology & Tourism*, 1-14. <https://doi.org/10.1007/s40558-023-00249-w>
16. Wang, S., Huang, X., She, B., & **Li, Z***. (2023). Diverged landscape of restaurant recovery from the COVID-19 pandemic in the United States. *iScience*, 26(6). <https://doi.org/10.1016/j.isci.2023.106811>
17. **Ning H.**, **Li Z***., Qiao S., Zeng C., Zhang J., Olatosi B., Li X., (2023). Revealing geographic transmission pattern of COVID-19 using neighborhood-level simulation with human mobility data and SEIR model: A Case Study of South Carolina, *International Journal of Applied Earth Observation and Geoinformation*. <https://doi.org/10.1016/j.jag.2023.103246>
18. Wang S., Wang R., Huang X., **Li Z.**, Bao S., (2023). A GIS-based analytical framework for evaluating the effect of COVID-19 on the restaurant industry with big data. *Big Earth Data*. <https://doi.org/10.1080/20964471.2022.2163130>

19. Jin A., Chen X., Huang X., **Li Z.**, Caspi C., Xu R., (2023). Selective Daily Mobility Bias in the Community Food Environment: Case of Greater Hartford, Connecticut. *Nutrients*. 15(2), 404; <https://doi.org/10.3390/nu15020404>
20. **Shi F.**, Zhang J., YANG X., Sun X, **Li Z.**, Zeng C., **Ning H.**, Weissman S., Olatosi B., Li X. (2023). Moderation effect of community health on the relationship between racial/ethnic residential segregation and HIV viral suppression in South Carolina: a county-level longitudinal study from 2013 to 2018, *Frontiers in Public Health*. 10, 5297. <https://doi.org/10.3389/fpubh.2022.1013967>
21. **Jing F.**, **Li Z***, Qiao S., Zhang J., Olatosi B., Li X., (2023), Using geospatial social media data for infectious disease studies: a systematic review, *International Journal of Digital Earth*. 16(1). 130-157. <https://doi.org/10.1080/17538947.2022.2161652>
22. Huang X., Zhao B., **Li Z.**, Bao S., Zhang S. (2023) Black businesses matter: A longitudinal study of black owned restaurants in the COVID-19 pandemic. *Annals of the American Association of Geographers*. 113(1). 189-205. <https://dx.doi.org/10.1080/24694452.2022.2095971>
23. Yang Y., Zhang L., Wu L., **Li Z.**, (2023) Does distance still matter? Moderating effects of distance measures on the relationship between pandemic severity and bilateral tourism demand, *Journal of Travel Research*, <http://dx.doi.org/10.1177/00472875221077978>
24. Kazemi M., **Li Z.**, Hasanlu, S., Zare Naghadehi, S., & Hossein Haghi, V. (2022). Developing an integrated approach based on geographic object-based image analysis and convolutional neural network for volcanic and glacial landforms mapping. *Scientific Reports*, 12(1), 1-19. <https://doi.org/10.1038/s41598-022-26026-z>
25. **Jing F.**, **Li Z.**, Qiao S., Zhang J., Olatosi B., Li X., (2022), Investigating the relationships between concentrated disadvantage, place connectivity, and COVID-19 fatality in the United States over time, *BMC Public Health*. 22:2346. <https://doi.org/10.1186/s12889-022-14779-1>
26. **Cai R.**, Zhang J., **Li Z.**, Zeng C., Qiao S., Li X., (2022), Using Twitter Data to Estimate Prevalence of Mental Disorder Symptoms in the United States During the COVID-19 Pandemic: Ecological Cohort Study, *JMIR Formative Research*. 6(12). <https://doi.org/10.2196/37582>
27. **Jing F.**, Liu L., Zhou S., **Li Z.**, Song J., Wang L., Ma R., Lu J., Li X., (2022). Exploring large-scale spatial distribution of fear of crime integrating small sample surveys and massive street view images, *Environment and Planning B: Urban Analytics and City Science*. <https://doi.org/10.1177/239980832211356>
28. Wei, H., Huang, X., Wang, S., Lu, J., **Li Z.**, & Zhu, L. (2022). A data-driven investigation on park visitation and income mixing of visitors in New York City. *Environment and Planning B: Urban Analytics and City Science*, <https://doi.org/10.1177/23998083221130708>
29. Huang X., Wang S., Zhang M., Hu T., Hohl A., She B., Gong X., Li J., Liu X., Gruebner O., Liu R., L X., Liu Z., Ye X., **Li Z.**, (2022), Social media mining under the COVID-19 context:

- progress, challenges, and opportunities, *International Journal of Applied Earth Observation and Geoinformation*, 113. <https://doi.org/10.1016/j.jag.2022.102967>
30. Ozigbu C., Olatosi B., **Li Z.**, Hardin J., Hair N., (2022) Correlates of Zero-Dose Vaccination Status among Children Aged 12–59 Months in Sub-Saharan Africa: A Multilevel Analysis of Individual and Contextual Factors, *Vaccines*, 10(7). 1052. <https://doi.org/10.3390/vaccines10071052>
 31. Qiao S, **Li Z**, Liang C, Li X, Rudisill AC. (2022) Three dimensions of COVID-19 risk perceptions and their socioeconomic correlates in the United States: A social media analysis. *Risk Analysis*, <https://doi.org/10.1111/risa.13993>
 32. **Ning H.**, **Li Z***, Wang C., Hodgson M., Huang X., Li X., (2022) Converting street view images to land cover maps for metric mapping: a case study on sidewalk network extraction for the wheelchair users, *Computers, Environment and Urban Systems*. 95. <https://doi.org/10.1016/j.compenvurbsys.2022.101808>
 33. Wang S., Zhang M., Huang X., Hu T., **Li Z.**, Sun Q., Liu Y. (2022). Urban-regional disparities in mental health signals in Australia during the COVID-19 pandemic: a study via Twitter data and machine learning models, *Cambridge Journal of Regions, Economy and Society*, 15(3). 663-682. <https://doi.org/10.1093/cjres/rsac025>
 34. Kazemi M., Weng Q., Haghi V., **Li Z.**, Arsanjani J., (2022). Learning-based methods for detection and monitoring of shallow flood-affected areas: Impact of shallow-flood spreading on vegetation density, *Canadian Journal of Remote Sensing*, 48(4). 481-503. <https://doi.org/10.1080/07038992.2022.2072277>
 35. Zeng, C., Zhang, J., **Li, Z.**, Sun, X., Yang, X., Olatosi, B., ... & Li, X. (2022). Population Mobility and Aging Accelerate the Transmission of Coronavirus Disease 2019 in the Deep South: A County-Level Longitudinal Analysis. *Clinical Infectious Diseases*, 74 (3). e1-e3. <https://doi.org/10.1093/cid/ciac050>
 36. Kazemi-Garajeh M., Blaschke T., Haghi V., Weng Q., Kamran K., **Li Z.**, (2022). A comparison between Sentinel-2 and Landsat 8 OLI satellite images for soil salinity distribution mapping using a deep learning convolutional neural network, *Canadian Journal of Remote Sensing*. 48(3). 452-468. <https://doi.org/10.1080/07038992.2022.2056435>
 37. Qiao S., **Li Z.**, Zhang J., Sun X., Garrett C., Li X., (2022) Social capital, urbanization level, and COVID-19 vaccination uptake in the United States: A national level Analysis, *Vaccines*, 10(4), 625. <https://doi.org/10.3390/vaccines10040625>
 38. Wang S., Huang X., Hu T., Zhang M., **Li Z***, **Ning H.**, Corcoran J., Khan A., Liu Y., Zhang J., Li X. (2022). The times, they are a-changin': tracking the shifts in mental health signals in Australia from the early to later phase of the COVID-19 pandemic, *BMJ Global Health*, 7(1), <http://dx.doi.org/10.1136/bmjgh-2021-007081>
 39. Zhang, M., Wang, S., Hu, T., Fu, X., Wang, X., Hu, Y., Halloran B., **Li Z.**, Cui Y., Liu H., Liu Z., Bao, S. (2022). Human mobility and COVID-19 transmission: a systematic review and

- future directions. *Annals of GIS*, 28(4) 501-514.
<https://doi.org/10.1080/19475683.2022.2041725>
40. Morgan G., Wang C., **Li Z***, Schill S., Morgan D., (2022) Deep Learning of High-Resolution Aerial Imagery for Coastal Marsh Change Detection: A Comparative Study, *ISPRS International Journal of Geo-Information*, 11(2). <https://doi.org/10.3390/ijgi11020100>
 41. Zhang J., Olatosi B., Yang X., Weissman S., **Li Z.**, Hu J., Li X., (2022) Studying patterns and predictors of HIV viral suppression using A Big Data approach: A research protocol, *BMC Infectious Diseases*, 22:122, <https://doi.org/10.1186/s12879-022-07047-5>
 42. Huang X., Martin Y., Wang S., Zhang M., Gong X., Ge Y., **Li Z.*** (2022). The promise of excess mobility analysis: measuring episodic-mobility with geotagged social media data, *Cartography and Geographic Information Science*, 49(5)
<https://doi.org/10.1080/15230406.2021.2023366>
 43. **Ning, H., Li, Z.**, Ye, X., Wang, S., Wang, W., & Huang, X. (2022). Exploring the vertical dimension of street view image based on deep learning: A case study on lowest floor elevation estimation. *International Journal of Geographical Information Science*, 36(7), 1317-1342. <https://doi.org/10.1080/13658816.2021.1981334>
 44. Huang X., Xu Y., Liu R., Wang S., Wang S., Zhang M., Kang Y. Zhang Z., Gao S., **Li Z.**, Hu T. (2022). Exploring the spatial disparity of home-dwelling time patterns in the USA during the COVID-19 pandemic via Bayesian inference, *Transactions in GIS*. 26(4). P. 1939-1961. <https://doi.org/10.1111/tgis.12918>
 45. Lyu T., Hair N., Yell N., **Li Z.**, Qiao S., Liang C., Li X. (2021). Temporal Geospatial Analysis of COVID-19 Pre-infection Determinants of Risk in South Carolina, *International Journal of Environmental Research and Public Health*, 18(18), 9673.
<https://doi.org/10.3390/ijerph18189673>
 46. Kupfer, J. A., **Li, Z., Ning, H.**, Huang, X. (2021). Using Mobile Device Data to Track the Effects of the COVID-19 Pandemic on Spatiotemporal Patterns of National Park Visitation. *Sustainability*, 13(16), 9366. <https://doi.org/10.3390/su13169366>
 47. **Li Z***, Huang X., Hu T., **Ning H.**, Ye X., Huang B., Li X. (2021). ODT FLOW: Extracting, analyzing, and sharing multi-source multi-scale human mobility, *Plos One*, 16(8), p.e0255259. <https://doi.org/10.1371/journal.pone.0255259>
 48. Hu T., Wang S., She B., Zhang M., Huang X., Cui Y., Khuri J., Hu Y., Fu X., Wang X., Wang P., Zhu X., Bao S., Guan W., **Li Z.** (2021). Human Mobility Data in the COVID-19 Pandemic: Characteristics, Applications, and Challenges, *International Journal of Digital Earth*, 14(9), 1126-1147. <https://doi.org/10.1080/17538947.2021.1952324> **(ESI Highly Cited)**
 49. **Li Z***, Huang X., Ye X., **Jiang Y.**, Martin Y., **Ning H.**, Hodgson M., Li X. (2021). Measuring Global Multi-Scale Place Connectivity using Geotagged Social Media Data, *Nature Scientific Reports*, 11, 14694. <https://doi.org/10.1038/s41598-021-94300-7>

50. Hu, T., Wang, S., Luo, W., Yan, Y., Zhang, M., Huang, X., Yan Y., Liu R., Ly K., Kacker V., She B., **Li, Z.** (2021). Revealing public opinion towards COVID-19 vaccines using Twitter data in the United States: a spatiotemporal perspective, *Journal of Medical Internet Research*, 23(9):e30854. <https://doi.org/10.2196/30854>
51. **Jiang, Y.**, Guo, D., **Li, Z.** Hodgson, M. (2021). A novel big data approach to measure and visualize urban accessibility. *Computational Urban Science*, 1, 10 (2021). <https://doi.org/10.1007/s43762-021-00010-1>
52. Martín, Y., **Li, Z***. Ge, Y., Huang, X. (2021). Introducing Twitter Daily Estimates of Residents and Non-Residents at the County Level. *Social Sciences*, 10(6), 227. <https://doi.org/10.3390/socsci10060227>
53. **Jiang Y.**, Huang X., **Li Z.** (2021). Spatiotemporal patterns of human mobility and its association with land use types during COVID-19 in New York City, *ISPRS International Journal of Geo-Information*, 10(5), 344; <https://doi.org/10.3390/ijgi10050344>
54. **Jiang Y.**, **Li Z.**, Cutter S. (2021). Social Distance Integrated Gravity Model for Evacuation Destination Choice, *International Journal of Digital Earth*, 14 (8), 1004-1018. <https://doi.org/10.1080/17538947.2021.1915396>
55. Ye X., Wang W., Zhang X., **Li Z.**, Yu D., Du J., Chen Z. (2021). Reconstructing spatial information diffusion networks with heterogeneous agents and text contents, *Transactions in GIS*, 25(4) 1654-1673. <https://doi.org/10.1111/tgis.12747>
56. Zeng C., Zhang J., **Li Z.**, Sun X. Olatosi B., Weissman S., Li X. (2021). Spatial-temporal relationship between population mobility and COVID-19 outbreaks in South Carolina: A time series forecasting analysis, *Journal of Medical Internet Research*, 23(4):e27045, <https://doi.org/10.2196/27045>
57. **Li Z***, Qiao S., **Jiang Y.**, Li X. (2021). Building a Social media-based HIV Risk Behavior Index to Inform the Prediction of HIV New Diagnosis: A Feasibility Study, *AIDS*, 35 (Suppl 1):S91–S99, doi:10.1097/QAD.0000000000002787
58. Zeng C., Zhang J., Sun X., **Li Z.**, Weissman S., Olatosi B., Li X. (2021). County-level predictors of retention in care status among people living with HIV in South Carolina from 2010 to 2016: A data-driven approach, *AIDS*, 35(Suppl 1): S53-S64
59. Huang, X., **Li, Z.**, **Jiang, Y.**, Ye, X., Deng, C., Zhang, J., & Li, X. (2021). The characteristics of multi-source mobility datasets and how they reveal the luxury nature of social distancing in the US during the COVID-19 pandemic. *International Journal of Digital Earth*, 14(4) 424-442. <https://doi.org/10.1080/17538947.2021.1886358> **(ESI Highly Cited)**
60. **Xu D.**, Huang X., Mango J., Li X., **Li Z***. (2021). Simulating multi-exit evacuation using deep reinforcement learning, *Transactions in GIS*, 25(3), 1542-1564. <https://doi.org/10.1111/tgis.12738>
61. Qiao S., **Li Z.**, Weissman S., Li X., Olatosi B., Davis C., Mansaray A. (2021). Disparity in HIV

- service interruption in the outbreak of COVID-19: A mixed-method study in South Carolina, *AIDS and Behavior*, 25(1), 49-57. <https://dx.doi.org/10.1007%2Fs10461-020-03013-x>
62. **Li Z***, Li X., Porter D., Zhang J., **Jiang Y.**, Olatosi B., Weissman S. (2020). Monitoring the Spatial Spread of COVID-19 and Effectiveness of Control Measures Through Human Movement Data: Proposal for a Predictive Model Using Big Data Analytics, *JMIR Research Protocols*, 9(12), e24432. <https://doi.org/10.2196/24432>
63. **Huang X.**, **Li Z.**, Lu J., Wang S., Wei H., Chen B. (2020) Time-series clustering for home dwell time during COVID-19: what can we learn from it? *ISPRS International Journal of Geo-Information*, 9(11), 675. <https://doi.org/10.3390/ijgi9110675>
64. **Ning H.**, **Li Z***, Wang C., Yang L. (2020) Choosing an appropriate training set size when using existing data to train neural networks for land cover segmentation, *Annals of GIS*, 26(4), 329-342. <https://doi.org/10.1080/19475683.2020.1803402>
65. **Huang X.**, **Li Z***, **Jiang Y.**, Li X., Porter D. (2020). Twitter reveals human mobility dynamics during the COVID-19 pandemic, *PLoS One*, 15(11), e0241957. <https://doi.org/10.1371/journal.pone.0241957> (**ESI Highly Cited**)
66. Yang C., Sha D., Liu S., Li Y., Lan H., Guan W., Hu T., **Li Z.**, Zhang Z., Thompson J., Wang Z., Wong D., Ruan S., Yu M., Richardson D., et al., (2020). Taking the pulse of COVID-19: A spatiotemporal perspective. *International Journal of Digital Earth*, 13(10), 1186-1211. <https://doi.org/10.1080/17538947.2020.1809723> (**ESI Highly Cited**)
67. **Huang X.**, Wang C., **Li Z.**, **Ning H.**, Kim H. (2020). A 100m population grid in the CONUS by disaggregating census data with open-source Microsoft building footprints, *Big Earth Data*, 5(1), 112-133. <https://doi.org/10.1080/20964471.2020.1776200>
68. Yu M., Bambacus G., Cervone G., Clarke K., Huang Q., Li J., Li W., **Li Z.**, Liu Q., Yang J., Yang, C., (2020). Spatiotemporal Event Detection: A Review, *International Journal of Digital Earth*, 13(12), 1339-1365. <https://doi.org/10.1080/17538947.2020.1738569>
69. **Xu D.**, **Huang X.**, **Li Z***, Li X., (2020). Local Motion Simulation using Deep Reinforcement Learning, *Transactions in GIS*, 24(3), 756-779. <https://doi.org/10.1111/TGIS.12620>
70. **Ning H.**, **Li Z***, Hodgson M., Wang C. (2020). Prototyping A Social Media Flooding Photo Screening System Based on Deep Learning, *ISPRS International Journal of Geo-Information*, 9(2), 104; <https://doi.org/10.3390/ijgi9020104>
71. **Martín Y.**, Cutter S.L. **Li Z.**, Emrich C., Mitchell, J.T. (2020). Using geotagged tweets to track population movements to and from Puerto Rico after Hurricane Maria. *Population and Environment*, 42(1), 4-27. <https://doi.org/10.1007/s11111-020-00338-6>
72. Hu L., **Li Z.**, Ye X., (2020). Delineating and Modelling Activity Space Using Geotagged Social Media Data, *Cartography and Geographic Information Science*, 47(3) <https://doi.org/10.1080/15230406.2019.1705187> (**#1 most cited articles published in CaGIS in the last 3 years [as of 10/2/2022]**).

73. Pham E., Emrich C., **Li Z.**, Mitchell J., Cutter S., (2020). Evacuation Departure Timing during Hurricane Matthew, *Weather, Climate, and Society*, 12(2), 235-248. <https://doi.org/10.1175/WCAS-D-19-0030.1>
74. **Li Z***, Tang W., Huang Q., Shook E., Guan Q., (2020). Introduction to Big Data Computing for Geospatial Applications, *ISPRS International Journal of Geo-Information*, 9(8), 487, <https://doi.org/10.3390/ijgi9080487>
75. Martín Y., Cutter S.L., **Li Z.**, (2020). Bridging Twitter and Survey Data for Evacuation Assessment of Hurricane Matthew and Hurricane Irma, *Natural Hazard Review*, 21(2), 04020003. [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000354](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000354)
76. **Ning H.**, Huang X., **Li Z***, Wang C., Xiang D., (2020). Detecting New Building Construction in Urban Areas Based on Images of Small Unmanned Aerial System, *Papers in Applied Geography*, 6(1), 56-71. <https://doi.org/10.1080/23754931.2019.1707108>
77. Huang X., **Li Z***, Wang C., **Ning H.** (2020). Identifying disaster related social media for rapid response: a visual-textual fused CNN architecture, *International Journal of Digital Earth*, 13(9), 1017-1039. [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000354](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000354)
78. **Li Z***, Huang Q., Jiang Y., Hu F. (2019). SOVAS: A Scalable Online Visual Analytic System for Big Climate Data Analysis, *International Journal of Geographic Information Science*, 34(6), 1188-1209. <https://doi.org/10.1080/13658816.2019.1605073>
79. Dahal, B., Kumar, S. A., & **Li, Z.** (2019). Topic modeling and sentiment analysis of global climate change tweets. *Social Network Analysis and Mining*, 9(1), 24. <https://doi.org/10.1007/s13278-019-0568-8>
80. **Li Z***, Huang Q., Emrich C., (2019). Introduction to Social Sensing and Big Data Computing for Disaster Management, *International Journal of Digital Earth*, 12(11), 1198-1204., <https://doi.org/10.1080/17538947.2019.1670951>
81. Jiang Y., **Li Z***, Cutter L.S. (2019). Social network, activity space, sentiment, and evacuation: what can social media tell us? *Annals of the American Association of Geographers*, 109 (6), <https://doi.org/10.1080/24694452.2019.1592660>
82. Yang L., Sun X., **Li Z.** (2019). An Efficient Framework for Remote Sensing Parallel Processing: Integrating the Artificial Bee Colony Algorithm and Multiagent Technology, *Remote Sensing*, 11(2), 152, <https://doi.org/10.3390/rs11020152>
83. Jiang Y., **Li Z***, Ye X. (2019). Understanding Demographic and Socioeconomic Bias of Geotagged Twitter Users at the County Level, *Cartography and Geographic Information Science*. 46(3), 228-242, <https://doi.org/10.1080/15230406.2018.1434834>
84. Hu F., **Li Z***, Yang C., Jiang Y. (2019). A graph-based approach to detect the tourist movement pattern using social media data, *Cartography and Geographic Information Science*, 46(4), 368-382, <https://doi.org/10.1080/15230406.2018.1496036>
85. Huang X., Wang C, **Li Z.** and **Ning H.** (2019). A visual–textual fused approach to automated tagging of flood-related tweets during a flood event. *International Journal of Digital*

- Earth*, 12 (11), 1248-1264., <https://doi.org/10.1080/17538947.2018.1523956>
86. Li Z*, Hodgson M., Li W., (2018). A general-purpose framework for large-scale Lidar data processing, *International Journal of Digital Earth*, 11(1), 26-47, <https://doi.org/10.1080/17538947.2016.1269842>
87. Deng, C., Lin, W., Ye, X., Li, Z., Zhang, Z., Xu, G. (2018). Social media data as a proxy for hourly fine-scale electric power consumption estimation. *Environment and Planning A: Economy and Space*. 50(8), 1553–1557, <https://doi.org/10.1177/0308518X18786250>
88. Huang X., Wang C., Li Z. (2018). Reconstructing Flood Inundation Probability by Enhancing Near Real-Time Imagery with Real-Time Gauges and Tweets, *IEEE Transactions on Geoscience and Remote Sensing*, 56(8), 4691-4701, <https://doi.org/10.1109/TGRS.2018.2835306>
89. Wang C., Li Z., Huang X. (2018). Geospatial Assessment of Wetness Dynamics in the October 2015 SC Flood with Remote Sensing and Social Media, *Southeastern Geographer*, 58(2), 164-180, <https://doi.org/10.1353/sgo.2018.0020>
90. Huang X., Wang C., Li Z. (2018). A Near Real-time Flood Mapping Approach by Integrating Post-event with Satellite Imagery and Flood-related Tweets, *Annals of GIS*. 24(2), 113-123, <https://doi.org/10.1080/19475683.2018.1450787>
91. Li Z*, Wang C., Emrich C., Guo D., (2018). A novel approach to leveraging social media for rapid flood mapping: a case study of the 2015 South Carolina floods, *Cartography and Geographic Information Science*, 45(2), 97-110, <https://doi.org/10.1080/15230406.2016.1271356>, **(ESI Highly Cited; Top 5 most cited articles in *CaGIS* as of 11/2021 in Taylor&Francis Online)**
92. Huang Q., Li, J., Li, Z., (2018). A Hybrid Cloud Platform Based on Multi-sourced Computing and Model Resources for Geosciences, *International Journal of Digital Earth*, 11(12), 1184-1204, <https://doi.org/10.1080/17538947.2017.1385652>
93. Li Z*, Huang Q., Carbone G., Hu F. (2017). A High Performance Query Analytical Framework for Supporting Data-intensive Climate Studies, *Computers, Environment and Urban Systems*, 62(3), 210-221, <https://doi.org/10.1016/j.compenvurbsys.2016.12.003>
94. Li Z*, Hu, F., Schnase, J. L., Duffy, D. Q., Lee, T., Bowen, M. K., & Yang, C. (2017). A Spatiotemporal Indexing Approach for Efficient Processing of Big Array-based Climate Data with MapReduce. *International Journal of Geographical Information Science*, 31(1), 17-35, <https://doi.org/10.1080/13658816.2015.1131830> **(this Spatiotemporal Indexing Approach [SIA] was adopted by NASA as one of the key technologies in their Data Analytics and Storage System [DASS]).**
95. Martin Y., Li Z*, Cutter L.S., (2017). Leveraging Twitter to gauge evacuation compliance: spatiotemporal analysis of Hurricane Matthew, *PLoS ONE*, 12(7), <https://doi.org/10.1371/journal.pone.0181701> **(the FIRST to use social media big data to study evacuation behaviors)**
96. Yang C., Huang Q., Li Z., Liu K., & Hu F. (2017). Big Data and cloud computing: innovation

- opportunities and challenges, *International Journal of Digital Earth* 10(1),13-53., <https://doi.org/10.1080/17538947.2016.1239771> (**ESI Highly Cited; #1 most read and #1 most cited article among all articles published in IJDE; equal contribution with the second author**)
97. Li Z*, Yang, C., Huang, Q., Liu K., Sun, M., Xia, J., (2017). Building Model as a Service for Supporting Geosciences, *Computers, Environment and Urban Systems*. 61(B), 141-152., <https://doi.org/10.1016/j.compenvurbsys.2014.06.004>
 98. Li Z*, Yang, C., Liu, K., Hu, F., & Jin, B. (2016). Automatic Scaling Hadoop in the Cloud for Efficient Process of Big Geospatial Data. *ISPRS International Journal of Geo-Information*, 5(10), 173-187, <https://doi.org/10.3390/ijgi5100173>
 99. Gui, Z., Yu, M., Yang, C., Jiang, Y., Chen, S., Xia, J., Huang, Q., Liu, K., Li, Z., Hassan, M.A. and Jin, B., (2016). Developing Subdomain Allocation Algorithms Based on Spatial and Communicational Constraints to Accelerate Dust Storm Simulation. *PloS ONE*, 11(4), <https://doi.org/10.1371/journal.pone.0152250>
 100. Li Z., Yang C., Yu M., Liu K., Sun M., (2015). Enabling Big Geoscience Data Analytics with a Cloud-based, MapReduce-enabled, and Service-oriented Workflow Framework, *PLOS ONE*, 10(3), <https://doi.org/10.1371/journal.pone.0116781>
 101. Xia, J., Yang, C., Liu, K., Li, Z., Sun, M., & Yu, M. (2015). Forming a global monitoring mechanism and a spatiotemporal performance model for geospatial services. *International Journal of Geographical Information Science*, 29(3), 375-396., <https://doi.org/10.1080/13658816.2014.968783>
 102. Xia, J., Yang, C., Liu, K., Gui, Z., Li, Z., Huang, Q., & Li, R. (2015). Adopting cloud computing to optimize spatial web portals for better performance to support Digital Earth and other global geospatial initiatives. *International Journal of Digital Earth*, 8(6), 451-475., <https://doi.org/10.1080/17538947.2014.929750>
 103. Gui Z., Yang C., Xia J., Huang Q., Liu K., Li Z., Yu M., Zhou N., Jin B., (2014). A Service Brokering and Recommendation Mechanism for Better Selecting Cloud Services, *PLOS ONE*. 9(8), <https://doi.org/10.1371/journal.pone.0105297>
 104. Xia J., Yang C., Gui Z., Liu K., Li Z., (2014). Optimizing an index with spatiotemporal patterns to support GEOSS Clearinghouse. *International Journal of Geographical Information Science*, 28(7), 1459-1481., <https://doi.org/10.1080/13658816.2014.894195>
 105. Huang Q., Yang C., Liu K., Xia J., Xu C., Li J., Li Z., (2013). Evaluating open-source cloud computing solutions for geosciences. *Computers & Geosciences*, 59, 41-52, <https://doi.org/10.1016/j.cageo.2013.05.001>
 106. Li Z*, Xu J., (2012). Location-based Service Platform Construction Based on Cloud Computing. *Geomatics World*, 2012(1), 69-71.
 107. Gong J., Wu H., Zhang T., Gui Z, Li Z., You L., Shen S., (2012). Geospatial Service Web: towards integrated cyberinfrastructure for GIScience. *Geo-spatial Information Science*,

- 15(2):73-84., <https://doi.org/10.1080/10095020.2012.714098>
108. Sun M., Li J., Yang C., Schmidt G. A., Bambacus M., Cahalan R... & **Li Z.** (2012). A Web-Based Geovisual Analytical System for Climate Studies. *Future Internet*, 4(4), 1069-1085, <https://doi.org/10.3390/fi4041069>
109. Miao Li., **Li Z.**, Li J., Yang C., (2012). An OPeNDAP-based System to Implement Earth Science Data Sharing, *Journal of Nanjing University of Posts and Telecommunications*,32(1), 84-88
110. **Li Z.**, Yang C., Wu H., Li W., and Miao L., (2011). An optimized framework for seamlessly integrating OGC Web Services to support geospatial sciences, *International Journal of Geographic Information Science*, 25(4), 595-613, <https://doi.org/10.1080/13658816.2010.484811>
111. Wu H., **Li Z.**, Zhang H., Yan, C., & Shen S., (2011). Monitoring and evaluating the quality of Web Map Service resources for optimizing map composition over the internet to support decision making. *Computers & Geosciences*, 37(4), 485-494, <https://doi.org/10.1016/j.cageo.2010.05.026>
112. Yang C., Wu H., Huang Q., **Li Z.**, and Li J., (2011). Using spatial principles to optimize distributed computing for enabling the physical science discoveries, *Proceedings of National Academy of Sciences*, 108(14): 5498-5503, <https://doi.org/10.1073/pnas.0909315108> (**spatial computing definition paper, captured by Nobel Intent Blog**)
113. Li W., Yang C., Nebert D., Raskin R., Houser P., Wu H., **Li Z.**, (2011). Semantic-based web service discovery and chaining for building an Arctic spatial data infrastructure., *Computers & Geosciences*, 37(11), 1752-1762. <https://doi.org/10.1016/j.cageo.2011.06.024>
114. **Li Z.**, Miao L, & Xiu W., (2010). The Integration of WMS and Google Earth using QuadKML. *Geomatics & Spatial Information Technology*, 33(5), 24-27, <http://dx.chinadoi.cn/10.3969/j.issn.1672-5867.2010.05.009> (in Chinese)
115. Miao L., Wu L., L., **Li Z.**, & Yang C. (2010). Integration and Interoperability of Distributed Geospatial Information Based on CSW and WMS. *Geography and Geo-Information Science*, 2010(3) (in Chinese)

Articles in books and proceedings (peer-reviewed)

116. Kumar, S., Pillai, M. S., **Li, Z.** (2022). Global Perception of Telemedicine before and after COVID-19: A Text Mining Analysis. In *2022 IEEE Symposium Series on Computational Intelligence (SSCI)* (pp. 535-542). IEEE.
117. Codato D., Piovan S., Trivelloni U., Brentan D., Piccolo D., Pappalardo S., Zorzi S., **Li Z.**, Hodgson M., Marchi M., (2022) Veneto between pandemic data, satellite imagery and social media in the analysis of the infection and of the lockdown, in *Atlante Covid-19 Geografie Del Contagio in Italia*, <https://www.ageiweb.it/wp->

- content/uploads/2022/08/Atlante_Covid-19-online.pdf
118. **Li Z.** (2020). Geospatial Big Data Handling with High Performance Computing: Current Approaches and Future Directions. In: Tang W., Wang S. (eds) *High Performance Computing for Geospatial Applications*. Geotechnologies and the Environment, vol 23. Springer, Cham. https://doi.org/10.1007/978-3-030-47998-5_4
 119. **Li Z.**, Gui Z., Hofer B., Li Y., Scheider S., Shekhar S. (2020). Geospatial Information Processing Technologies. In: Guo H., Goodchild M.F., Annoni A. (eds) *Manual of Digital Earth*. Springer, Singapore. https://doi.org/10.1007/978-981-32-9915-3_6
 120. **Huang X.**, Xu D., **Li Z.**, Wang C., (2020). Translating Multispectral Imagery to Nighttime Imagery via Conditional Generative Adversarial Networks, *IEEE International Geoscience and Remote Sensing Symposium*, July 19-24, 2020, Hawaii, US.
 121. **Vayansky I.**, Kumar S., **Li Z.**, (2019). An Evaluation of Geotagged Twitter Data during Hurricane Irma using Sentiment Analysis and Topic Modeling for Disaster Resilience, in *2019 IEEE International Symposium on Technology in Society (ISTAS) Proceedings*, 15 - 16 November, Boston., <https://doi.org/10.1109/ISTAS48451.2019.8937859>
 122. **Huang X.**, Wang C., **Li Z.**, (2019). High-Resolution Population Grid in the CONUS using Microsoft Building Footprints: a feasibility study, in *Proceedings of the 3rd ACM SIGSPATIAL International Workshop on Geospatial Humanities*, November 5, Chicago, Illinois, US, <https://doi.org/10.1145/3356991.3365469>
 123. **Huang X.**, Wang, C., **Li, Z.** (2019). Linking picture with text: tagging flood relevant tweets for rapid flood inundation mapping. *Proceedings of the International Cartographic Association*, 2019 International Cartography Conference, 15–20 July 2019, Tokyo, Japan, <https://doi.org/10.5194/ica-proc-2-45-2019>, 2019
 124. **Jiang Y.**, **Li Z.**, Ye X. (2018). Measuring inter-city network using digital footprints from Twitter users, *Proceedings of the 2nd ACM SIGSPATIAL International Workshop on PredictGIS*, 11/06/2018, Seattle, Washington, US., <https://doi.org/10.1145/3283590.3283594>
 125. Singleton S., Kumar S., **Li Z.** (2018). Twitter Analytics: Are the United States Coastal Regions Prepared for Climate Change? *IEEE International Symposium on Technology and Society*, <https://doi.org/10.1109/ISTAS.2018.8638266>
 126. **Liu X.**, Huang Q., **Li Z.** (2017). The impact of MTUP to explore online trajectories for human mobility studies. *Proceedings of the 1st ACM SIGSPATIAL International Workshop on PredictGIS*, <https://doi.org/10.1145/3152341.3152348>
 127. Huang Q., **Li Z.**, Li J., (2016). Mining Frequent Trajectory Patterns from Online Footprints, *Proceedings of the 7th ACM SIGSPATIAL International Workshop on GeoStreaming*, <https://doi.org/10.1145/3003421.3003431>
 128. Yang C., Liu K., **Li Z.**, Li W., Wu H., Xia J., Huang Q., ..., Nebert D., (2014). GEOSS Clearinghouse: Integrating Geospatial Resources to Support the Global Earth

- Observation System of Systems, (2014). In *Karimi, H. A. (Ed.), Big Data: Techniques and Technologies in Geoinformatics* (pp. 31-54). CRC Press.
129. Yang, C., Sun, M., Liu, K., Huang, Q., **Li, Z.**, Gui, Z., Jiang, Y., & Zhou, N., (2014). Contemporary Computing Technologies for Processing Big Spatiotemporal Data. In Kwan M.P., Richardson D., Wang D., Zhou C., (Eds.), *Space-Time Integration in Geography and GIScience* (pp. 327-351). Springer Netherlands.
130. Huang, Q., **Li, Z.**, Xia, J., Jiang, Y., Xu, C., Liu, K., ... Yang C., (2013). Accelerating Geocomputation with Cloud Computing. In Shi X., Kindratenko V., & Yang C. (Eds.), *Modern Accelerator Technologies for Geographic Information Science* (pp. 41-51). Springer US.
131. **Li, Z.**, Huang, Q., and Gui, Z., (2013). Enabling Technologies of Cloud Computing. In Yang C., Huang Q., Li Z., Xu C., Liu K(Eds.), *Spatial cloud computing: a practical approach* (pp. 33-48) CRC Press/Taylor & Francis
132. Li J., **Li, Z.**, Sun M., Liu K., (2013). Cloud-enabling Climate@Home. In Yang C., Huang Q., Li Z., Xu C., Liu K.(Eds.), *Spatial cloud computing: a practical approach* (pp. 143-160). CRC Press/Taylor & Francis
133. **Li Z.**, Yang C., Sun M., Li J., Xu C., Huang Q., & Liu K., (2013). A High Performance Web-Based System for Analyzing and Visualizing Spatiotemporal Data for Climate Studies. In *W2GIS, Lecture Notes in Computer Science, Volume 7820* (pp. 190-198). Springer Berlin Heidelberg.
134. Huang, Q., **Li, Z.**, Liu K., Xia J., Jiang Y., Xu C., Yang C., (2013). Handling intensities of data, computation, concurrent access, and spatiotemporal patterns. In Yang C., Huang Q., Li Z., Xu C. & Liu K., (Eds.), *Spatial cloud computing: a practical approach* (pp. 275-294). CRC Press/Taylor & Francis
135. Yang C., Huang Q., Gui Z., **Li Z.**, Xu C., Jiang Y., Li J., (2013). Cloud Computing Research for Geosciences. In Yang C., Huang Q., Li Z., Xu C., & Liu K., (Eds.), *Spatial cloud computing: a practical approach* (pp. 295-310). CRC Press/Taylor & Francis
136. Liu K., Huang Q., Xia J., **Li Z.**, Lostritto P., (2013). How to User Cloud Computing. In Yang C., Huang Q., Li Z., Xu C., Liu K., (Eds.), *Spatial cloud computing: a practical approach* (pp. 51-74). CRC Press/Taylor & Francis
137. Liu K., Nebert D., Huang Q., Xia J., **Li Z.**, (2013). Cloud-enabling GEOSS clearinghouse. In Yang C., Huang Q., Li Z., Xu C., Liu K., (Eds.), *Spatial cloud computing: a practical approach* (pp. 125-142). CRC Press/Taylor & Francis
138. Yang C., Wu H., Huang Q., **Li Z.**, J. Li, W. Li, L. Miao and M. Sun, (2011). WebGIS performance issues and solutions, ISPRS book on *Advances in web-based GIS, mapping services and applications* (pp. 121-138), London: Taylor & Francis
139. Shi, X., Nebert D., Zhang C., Yang H., Wu H., Zhao P., **Li Z.** et al. (2011). Geoinformation Infrastructure (GII). In Yang C., Wong D., Miao Q., and Yang R. (Eds.), *Advanced*

GeoInformation Science (pp. 205-274), CRC Press/Taylor and Francis

140. Liu K., Yang C., Li W., **Li Z.**, Wu H., Rezgui A., & Xia J., (2011). The GEOSS Clearinghouse high performance search engine. In *2011 19th International Conference on Geoinformatics* (pp. 1-4), IEEE., <https://doi.org/10.1109/Geoinformatics.2011.5981077>
141. **Li Z.**, W. Li, (2010). In Yang C., Wong D., Miao Q., Yang Run., (Eds.), *Geobrowser and spatial web portals. Advanced GeoInformation Science* (pp. 234-239), CRC Press/Taylor and Francis
142. Bambacus M., Yang C., Evans J., **Li Z.**, Li W. and Huang Q., (2008). Sharing Earth science information to support the Global Earth Observing System of Systems (GEOSS). *Proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS08)* (pp. 141-144), Boston, US, <https://doi.org/10.1109/IGARSS.2008.4778813>

Other publications

143. Jing F., Li Z., (2023) Twitter-Based Place Connectivity, Concentrated Disadvantage, and COVID-19 Fatality. *Public Health Post*.
<https://www.publichealthpost.org/research/twitter-based-place-connectivity-concentrated-disadvantage-and-covid-19-fatality/>
144. **Li Z.**, Wang C., Emrich C., Guo D., (2016). Rapid Mapping of October 2015 South Carolina Flood using Social Media, Remote Sensing, and Stream Gauges. In: *The South Carolina Deluge: Lessons from a Watershed Disaster*, Center for Resilience Studies, Northeastern University (pp. 52-62), <https://doi.org/10.17760/D20241716>
145. Wang C., **Li Z.**, Emrich C., (2016). Remote sensing of surface wetness dynamics during the October 2015 South Carolina Flood, Congaree River Watershed. In: *The South Carolina Deluge: Lessons from a Watershed Disaster*, Center for Resilience Studies, Northeastern University (pp. 63-67), <https://doi.org/10.17760/D20241716>
146. Karami A., **Li Z.** (2016). Computational Framework for Tracking Reports, Opinions and Feelings of People in Social Media Before, During and After a Natural Disaster: Twitter Case Study in the 2015 South Carolina Flood, Available at https://sc.edu/about/offices_and_divisions/research/docs/sc_floods_project_summary_booklet.pdf (pp. 37-38)
147. **Li Z.**, Wang C., Emrich C., Guo D. (2016). Leveraging Social Media for Rapid Mapping of 2015 South Carolina Floods, Available at https://sc.edu/about/offices_and_divisions/research/docs/sc_floods_project_summary_booklet.pdf (pp. 39-40)
148. Yu, M., Yang, C., **Li Z.**, Liu, K., & Chen, S. (2015). Enabling the Acceleration of Dust Simulation using Job Scheduling Methods in a Cloud Environment. *Proceedings of the 13th International Conference on GeoComputation, May 20-23, 2015, Richardson, Texas* http://www.geocomputation.org/2015/papers/GC15_54.pdf

PRESENTATIONS (*graduate students or postdocs whose work I have supervised as advisor or committee member/mentor are underscored; presented by the first author unless otherwise noted*)

2024

1. Multi-Level Risk Factors of Late Presentation with Advanced HIV Disease and Delay Time, 2005-2019, Conference on Retroviruses and Opportunistic Infections (CROI), March 3 - 6, 2024, Denver, Colorado. (Shi F., Zhang J., Chen S., Yang X., **Li Z.**)

2023

2. Activity-based food environment and cardiometabolic health: A national observational study, APHA 2023 Annual Meeting and Expo, Nov. 12 - 15, 2023, Atlanta. (Xu R., Huang X., Zhang K., Lyu W., Caspi C., Ghosh D., **Li Z.**, Chen X.)
3. Using Mobile Location Big Data to Improve Health Measure Estimation, SBE CCC 2023 Annual Meeting, September 21, 2023, Washington DC. (**Li Z.**)
4. Harnessing Geospatial Big Data and Spatial Computing for GIScience Innovations, Seminar, Wuhan University, July 16, 2023 (**Li Z.**) (*invited*)
5. Measuring Human Mobility with Big Geosocial Data: Challenges and Approaches, The 3rd ISDE International Lectures, March 21, 2023. (**Li Z.**) (*invited*)
6. Estimating first floor elevation for building flooding risk assessment using street view image, AAG Annual Meeting, March 23-27, 2023, Denver. (**Ning H.**, **Li Z.**, Ye X.)
7. A census-tract level examination of the association between immigrant proportions and mental health service utilization in the United States from 2019 to 2021. AAG Annual Meeting, March 23-27, 2023, Denver. (**Jing F.**, **Li Z.**, Qiao S.)
8. Residential segregation as a barrier to covid-19 booster coverage in deep south, Conference on Retroviruses and Opportunistic Infections (CROI), February 19-22, 2023, Seattle, Washington (Zeng C., Zhang J., **Li Z.**, Sun X., **Ning H.**, Yang X., Weissman S., Olatosi B., Li X., Liang C.)
9. A parallel genetic algorithm for multiple geographical features label placements. AAG Annual Meeting, March 23-27, 2023, Denver. (**Lessani N.**, **Li Z.**)
10. Sentiment Analysis of Swedish and Finnish Twitter Users' Views Toward NATO Pre- and Post- 2022 Russian Reinvasion of Ukraine. AAG Annual Meeting, March 23-27, 2023, Denver. (**Fulham A.**, **Ning H.**, **Li Z.**)
11. A universal framework for object localization and measurement based on street view imagery data, March 23-27, 2023, Denver. (**Ning H.**, **Li Z.**)
12. Spatiotemporal analysis of anti-Asian hate on social media in the United States, AAG Annual Meeting, March 23-27, 2023, Denver. (Hohl A., Horse A., Median R., Wan N., Wen M., Huang X., **Li Z.**)

13. Black Business Matter: A Longitudinal Study of Black-Owned Restaurants in the COVID-19 Pandemic Using Geospatial Big Data, AAG Annual Meeting, March 23-27, 2023, Denver. (Huang X., Bao X., **Li Z.**, Zhang S., Zhao B.)
14. Using Social Media and Place Visitation Data for Public Health Research-- Applications, Challenges, and Innovation Opportunities, 4th Annual National Big Data Health Science Conference, Feb. 10-11, 2023, Columbia, SC (**Li Z.**)
15. Using smartphone-based place visitation big data to improve health measure estimation, Feb. 10-11, 2023, Columbia, SC (**Ning H., Li Z., Jing F.**)
16. Disparities in mental health service utilization among immigrants in the US : A geospatial big data analysis, Feb. 10-11, 2023, Columbia, SC (**Jing F., Li Z.,** Qiao S.)
17. Place visitation data reveals the geographic and racial disparity of COVID-19 impact on HIV facility utilization in Deep South, Feb. 10-11, 2023, Columbia, SC (Qiao S., **Li Z., Ning H.**)

2022

18. Using mobile device data to track the effects of the COVID-19 pandemic on spatiotemporal patterns of national park visitation, 77th Annual Meeting of the Southeastern Division of the AAG. Atlanta, Georgia, November 20-21, 2022 (Kupfer J., **Li Z., Ning H.,** Huang X.)
19. Place visitation data reveals the geographic and racial disparity of COVID-19 impact on HIV facility utilization in Deep South, The 150th APHA Annual Meeting, Boston, MA, Nov 6-9, 2022. (**Li Z.,** Qiao S., **Ning H.,** Zhang J., Olatosi B., Li X)
20. Association of county-level social vulnerability with COVID-19 testing: The case of South Carolina in the United States, The 150th APHA Annual Meeting, Boston, MA, Nov 6-9, 2022. (Shi F., Zhang J., Olatosi B., **Li Z.,** Li X)
21. Integrating human mobility data with SEIR model to analyze COVID-19 spreading in South Carolina, The 150th APHA Annual Meeting, Boston, MA, Nov 6-9, 2022. (**Ning H., Li Z.,** Qiao S., Zhang J., Olatosi B., Li X)
22. Sidewalk extraction based on street view image, The 29th International Conference on Geoinformatics, Aug. 15-18, Beijing. (**Ning H., Li Z.,** Wang C., Hodgson M., Huang X., Li X.)
23. Place connectivity moderates the association between concentrated disadvantage and COVID-19 deaths in the contiguous US, The 29th International Conference on Geoinformatics, Aug. 15-18, Beijing. (**Jing F., Li Z.,** Qiao S., Zhang J., Olatosi B., Li X.)
24. Using Social Media Big Data for Public Health: A Geospatial Perspective, BDHSC Webinar for R25 fellows, July 26, 2022. (**Li Z.**) (invited)

25. Modeling Place-Place Connectiveness with Social Media, MobiLab Seminar Series: Doing Digital Humanities, University of Padua, Italy, Spring 2022 (by **Li Z.** and Hodgson M.) (**invited**)
26. Converting street view images to land cover maps for metric mapping using AI: a case study on sidewalk network extraction for the wheelchair users, AAG 2022, Feb. 25-Mar. 1, 2022, New York City (**Ning H.**, **Li Z.**, Wang C., Hodgson M., Huang X., Li X.)
27. Event detection method with principal component analysis-based sensor placement, AAG 2022, Feb. 25-Mar. 1, 2022, New York City (**Jiang Y.**, Popov A., **Li Z.**)
28. Measuring Human Mobility Dynamics and Place Connectivity Using Big Social Media Data, AAG 2022, Feb. 25-Mar. 1, 2022, New York City (**Li Z.**)
29. Spatiotemporal changes in visitation to U.S. national parks and associated social inequity: A big data approach, AAG 2022, Feb. 25-Mar. 1, 2022, New York City (Lu J., Huang X., Kupfer, Xiao X., **Li Z.**)
30. An analytical framework to evaluate the effect of COVID-19 on the restaurant industry: a study of New York City, International symposium on Geospatial approaches to combating Covid-19, ICC 2021, Dec.13-14, 2021, Florence, Italy (Wang S., Wang R., Huang X., and **Li Z.**)
31. CyberGIS-enabled spatial epidemiology, Symposium on Data-Intensive Geospatial Understanding in the Era of AI and CyberGIS, AAG 2022, Feb. 25-Mar. 1, 2022, New York City (**Li Z.**) (**invited** panelist presentation)

2021

32. Measuring Human Mobility Dynamics and Place Connectivity Using Big Social Media Data, 2021 SEDAAG Annual Meeting, Florence, Alabama, Nov 21-22, 2021 (**Li Z.**)
33. Big Social Media Analytics for Disaster Management: Approaches and Applications, Geoinformatics 2021 (CPGIS Annual Conference, online), November 4, 2021 (**invited**)
34. Rapid Response to Emerging Public Health Threats: Measuring human mobility using Twitter data, Geoinformatics 2021 (CPGIS Annual Conference, pre-conference, online), Oct. 31, 2021 (**invited**)
35. Evolving risk perceptions of COVID-19 and socioeconomic correlates in the United States: A social media analysis, American Public Health Association (APHA) Annual Meeting, Oct 24-27, Denver, CO, US (Qiao S., **Li Z.**, Liang C., Rudisill C. Li X.)
36. Spatial-temporal relationship between population mobility and COVID-19 outbreaks in South Carolina: A time series forecasting analysis, American Public Health Association (APHA) Annual Meeting, Oct 24-27, Denver, CO, US (Zeng C., Zhang J., Li Z., Sun X., Yang X., Olatosi B., Weissman S., Li X.)
37. Geospatial difference in linkage to care among HIV population in South Carolina from 2010 to 2016: A county-level longitudinal analysis, American Public Health

- Association (APHA) Annual Meeting, Oct 24-27, Denver, CO, US (Shi F., Zhang J., **Li Z.**, Zeng C., Sun X., Olatosi B., Weissman S., Li X.)
38. Population mobility and health disparities in COVID-19 outbreaks in deep south: A county-level longitudinal analysis, American Public Health Association (APHA) Annual Meeting, Oct 24-27, Denver, CO, US (Zeng C., Zhang J., **Li Z.**, Sun X., Olatosi B., Weissman S., Li X.)
 39. Dynamic relationship between population mobility and COVID-19 incidence in South Carolina: Practical application of time-varying effect model to surveillance data, American Public Health Association (APHA) Annual Meeting, Oct 24-27, Denver, CO, US (Zeng C., Zhang J., **Li Z.**, Sun X., Olatosi B., Weissman S., Li X.)
 40. Urban-regional disparities in mental health signals in Australia during the COVID-19 pandemic: a study via Twitter data and machine learning models, The Regions, Economy and Society in the Post-Covid World Online Conference, Friday, 17 September 2021 (Wang S., Liu Y., **Li Z.**, Huang X., Hu T.)
 41. Measuring Human Movement Using Big Social Media Data, COVID Information Commons Webinar, Northeast Big Data Innovation Hub, August 18, 2021 (**invited**)
 42. Big Social Media Data to measure place connectivity and human mobility dynamics. IJGI Webinar on "Social Computing for Geographic Information Science", Institute for Research on Population and Social Policies, Italy National Research Council, July 9, 2021 (**invited**)
 43. Measuring Human Mobility Dynamics and Place Connectivity Using Big Social Media Data, Oak Ridge National Laboratory GSHS Division Director Seminar Series, June 24, 2021 (**invited**)
 44. Fighting the Pandemic with Big Movement Data: Our Approaches, 2021 AAG Annual Conference, Online, April 9, 2021
 45. Panelist on the AAG Panel on Spatiotemporal Sciences (along with Michael Batty, Kathleen Stewart, Xun Shi, Laura Cline), 2021 AAG Annual Conference, April 9, 2021 (**invited**)
 46. Measuring place connectivity using big social media data, CPGIS Educational Webinar Series. "Spatiotemporal Study of Urban Dynamics", Mar 25, 2021, (**invited**)
 47. Monitoring the Spatial Spread of COVID-19 and Effectiveness of the Control Measures through Human Movement using Big Social Media Data, SC Big Data Health Science Center Conference 2021, Feb. 05, 2021 (**Li Z.**)
 48. Using Big Movement Data in the Pandemic: Methods and Applications, MDPI Webinar on GIS and Remote Sensing, Jan. 16, 2021 (**invited**)

2020

49. Fighting the COVID-19 Pandemic with Big Movement Data, The 1st Renmin University

- of China (RUC) Workshop on AI for Social Good, 12/19/2020, **(invited)**,
<http://stat.ruc.edu.cn/displaynews.php?id=6053>
50. Contextual factors with county-level retention in care status among people living with HIV in South Carolina from 2005 to 2016, APHA's 2020 Annual Meeting and Expo, Oct. 24 – 28, 2020, San Francisco, CA, US (Zeng C, Zhang J., Sun X., **Li Z.**, Weissman S., Olatosi B., Li X.)
 51. Using Social Media to Monitor the Spatial Propagation of COVID-19, South Carolina SmartState Center for Healthcare Quality (CHQ) Seminar, September 18, 2020 **(invited)**
 52. Following the Pandemic on Twitter: A Big Data Approach, CAS Public Online Events, July 28, 2020 (Webinar, **invited**)
 53. Social Sensing and Big Data Analytics: from Disaster Management to Public Health, Online Guest Lecture, Webinar on Robotics, AI& Big Data and Smart Materials & Nanotechnology, July 20, 2020 **(invited)**, online
<https://online.fliphtml5.com/uxfiv/vyog/#p=25>
 54. Disaster Management based on Social Sensing Big Data Computation, Online Guest Lecture, Wuhan University, July 6, 2020 **(invited)**
 55. Social Media (Twitter) Big Data, Human Mobility, and COVID-19, Webinars on Data Introduction, July 1, 2020 **(invited)**, ppt available at Harvard Dataverse
<https://dataverse.harvard.edu/file.xhtml?persistentId=doi:10.7910/DVN/5PRYPC/SUYWJ2&version=7.0>
 56. Towards real-time population estimates: introducing Twitter daily estimates of residents and non-residents at the county level, 2020 Annual Meeting of the Population Association of America, April, 22 – 25, 2020 in Washington, DC, US (Martin Y., **Li Z.**, Ge Y.) (virtual presentation)
 57. Understanding Human Dynamics During Disasters with Geospatial Big Data Analytics and Computing, South Carolina Association for Hazard Mitigation Conference, Greenville, SC, March 2-4, 2020 **(invited)**
 58. Social Sensing and Big Data Computing: from Disaster Management to Public Health, Spring Seminar Series, Department of the Environmental Health Sciences, USC, February 19, 2020 **(invited)**
 59. Leveraging Social Media Data for Disaster Management: Challenges and Applications, Big Data Health Science Conference, February 9-11, 2020 (**Li Z.**)
- 2019
60. Li Z., Social Sensing and Big Data for Disasters, China University of Petroleum, Nov. 25, 2019. **(invited)**

61. Social Sensing and Big Data Computing for Disaster Management: Challenges and Solutions, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China, July 17, 2019 (**invited**)
62. Using Social Media Analytics for Enhancing Situational Awareness, Institute of Remote Sensing and Digital Earth, Beijing, China, June 20, 2019 (**invited**)
63. A Scalable Online Visual Analytic System for Big Climate Data Analysis, ESIP Cloud Computing Group Webinar (lightning talk), May 5, 2019 (**Li Z.**)
64. Using existing data to build customized deep learning training datasets for remote sensing image classification, AAG Annual Meeting, Washington DC, April 3-7, 2019 (**Li Z., Ning H**)
65. Social Sensing and Big Data Computing for Disaster Management (Panel Introductory Talk), AAG Annual Meeting, Washington DC, April 3-7, 2019 (**Li Z.**)
66. Social Media for Disaster Management (presentation in the Social Media Analytics Tool Development Panel), AAG Annual Meeting, Washington DC, April 3-7, 2019 (**invited**)
67. Analyzing Human Mobility Patterns during Hurricane Matthew Evacuation using Twitter, AAG Annual Meeting, Washington DC, April 3-7, 2019 (**Jiang Y., Li Z.**)
68. Language and Twitter-based Social Media During Disaster Events, AAG Annual Meeting, Washington DC, April 3-7, 2019 (Hodgson M., **Li Z.**, Piovan S., Koylu C.)
69. Identifying disaster-related social media for rapid response: a visual-textual fused approach, AAG Annual Meeting, Washington DC, April 3-7, 2019 (**Huang X., Li Z., Wang C.**)
70. Tracking the Disruption of Hurricane Maria on Population Movements in Puerto Rico Through Geotagged Tweets, AAG Annual Meeting, Washington DC, April 3-7, 2019 (**Martin Y., Cutter S.L., Li Z., Emrich C., Mitchell J.**)

2018

71. Web-based GIS tools and applications in Public Health, November 27, 2018, Arnold School of Public Health, USC (**invited** guest lecture)
72. High performance computing for geospatial big data analytics, November 9, 2018, Department of Geography & Earth Sciences, the University of North Carolina at Charlotte (**invited** colloquium talk)
73. Big data, social media and evacuation, *New Generation GIS Workshop*, October 11, 2018, Center for Geographic Analysis, Harvard University, (**invited**)
74. Geospatial Big Data: Challenges, Opportunities, and Applications, *2018 GIS Day at USC* November 14, 2018 (**Li Z.**)

75. Measuring inter-city network using digital footprints from Twitter users, *ACM SIGSPATIAL International Workshop on PredictGIS*, 11/06/2018, Seattle, Washington (**Jiang Y., Li Z., Ye X.**).
76. Neighborhood characteristics and activity space: a new application of social media data, 58th Annual ACSP Conference, October 25-28, 2018, Buffalo, New York (Hu L., Ye X., Li Z.)
77. SCOVAS: A Scalable Climate Online Visual Analytical System, *AAG Annual Meeting* April 10-14, 2018, New Orleans (**Li Z.,** Huang Q., Hu F.)
78. Understanding Evacuation Decision based on Twitter Network, *AAG Annual Meeting* April 10-14, 2018, New Orleans (**Jiang Y., Li Z.**)
79. Build customized deep learning training dataset for remote sensing image classification, *AAG Annual Meeting*, April 10-14, 2018, New Orleans (**Huan N., Li Z.,** presented by Li Z.)
80. The Use of Social Media in Guiding Satellite Image Collection During Disaster Events, *AAG Annual Meeting*, April 10-14, 2018, New Orleans (Michael H., **Li Z.,** Piovon S., Davis B.)
81. A Flooding Probability Reconstruction Approach by Enhancing Near Real-Time (NRT) Imagery with Real-Time (RT) Data, *AAG Annual Meeting*, April 10-14, 2018, New Orleans (**Huang X.,** Wang C., **Li Z.**)
82. Plenary talk: Social Media and Big Data Computing for Disaster Management, *South Carolina Association for Hazard Mitigation (SCAHM) Annual Conference*, March 12-14, 2018, Hilton Head Island, SC (**invited**)
83. Using Twitter to Monitor Evacuation Behavior in Matthew. National Hurricane Conference. Orlando, FL, 2018. (**Martín Y., Li Z.,** and Cutter S.L.)

2017

84. Social Media, Human Movement, and the Eclipse, *Public Mini-lecture on the Eclipse at Russel House Theater*, August 21, 2017, USC (**invited**, co-presented with Jiang Y.)
85. Enhancing Situational Awareness by Mining Big Social Media Data in Near-real Time for Disaster Management, *3rd World Congress on GIS and Remote Sensing*, September 20 - 21, 2017, Charlotte, NC. (**invited**)
86. A Cloud-based Spatial Web Portal for Big Earth Data Visual Analytics (in Research as Art session, poster presentation), *ESIP Summer Meeting*, July 25-28, 2017, Bloomington, IN.
87. A Scalable Online System for Parallel Query Analytics or Big Climate Data, *The 28th International Cartographic Conference*, July 2-7, 2017, Washington DC

88. Computing and GIScience, *Seminar at the Department of Computing Sciences, Coastal Carolina University*, June 26, 2017(**invited**)
89. Mining Big Twitter Data to Enhance Disaster Situational Awareness, *Seminar at South Carolina SmartState Center for Health Care Quality*, April 28, 2017 (**invited**)
90. Geospatial Big Data Analytics with High Performance Computing, *Symposium on Research Computing Infrastructure*, April 14, 2017, University of South Carolina
91. A General-purpose Framework for Parallel Processing of Large-scale LiDAR Data, *AAG Annual Meeting*, Boston, April 05-09, 2017 (**Li Z.**, Hodgson M., Li W.)
92. Exploring Traffic Patterns Using Twitter Data: A Case Study in Chicago. 2017 UCGIS Symposium, May 23-25,2017. Arlington, VA (Poster presentation by Liu Z., Wei C., Zhang W., Zou T., **Li Z.**)
93. Leveraging Twitter to gauge evacuation compliance: spatiotemporal analysis of Hurricane Matthew, *AAG Annual Meeting*, Boston, April 05-09, 2017 (Martin Y., Li Z., Cutter S., presented by Martin Y.)
94. Geospatial assessment of flooding dynamics and risks of the October'15 South Carolina Flood, *The 25th International Conference on Geoinformatics*, Aug 2-4, 2017, Buffalo, NY, US (Wang C., **Li Z.**, **Huang X.**)
95. A Near Real-time Flood Mapping Approach by Integrating Post-event with Satellite Imagery and Flood-related Tweets, *The 25th International Conference on Geoinformatics*, Aug 2-4, 2017, Buffalo, NY, US (**Huang X.**, Wang C., **Li Z.**)
96. ClimateSpark: An In-memory Distributed Computing Framework for Big Climate Data Analytics, *AAG Annual Meeting*, Boston, April 05-09, 2017(Hu F., Yang C., Xu M., **Li Z.**, Schnase J., Duffy D., Bowen M.)
97. Explotar Twitter para estimar la tasa de evacuación: análisis espacio-temporal del huracán Matthew. Week of Geography. Zaragoza, 2017. Department of Geography, University of Zaragoza. (Martín, Y., **Li, Z.**, Cutter, S.L.)

2016

98. A General-purpose Framework for Parallel Processing of Large-scale LiDAR Data, AGU Fall Meeting, San Francisco, December 12-16, 2016 (**Li Z.**, Hodgson M., Li W.)
99. A High Performance Spatiotemporal Query Analytical Framework for Large-scale Climate Data Analysis, SEDAAG, Columbia, SC, November 20-22, 2016 (**Li Z.**, Huang Q., Carbone G., Hu F.)
100. Leveraging Social Media for Rapid Mapping of 2015 South Carolina Floods, SC Floods Conference, November 18, Columbia, SC (**Li Z.**, Wang C., Emrich C., Guo D.)
101. ClimateSpark: An In-memory Distributed Computing Framework for Big Climate

Data Analytics, AGU Fall Meeting, San Francisco, December 12-16, 2016 (Hu F., Yang C., Duffy D., Schnase J., **Li Z.**)

102. A Computational Framework for Tracking Reports, Opinions, and Feelings of People in Social Media Before, During and After a Natural Disaster, SC Floods Conference, November 18, Columbia, SC (Karami A., **Li Z.**)
103. BigQuery: Parallel Query Analytics of Big Climate Data, 2016 International Workshop on Cloud Computing and Big Data, Fairfax, Virginia, July 26 – 27, 2016 (**invited**)
104. Rapid Flood Mapping with Social Media and Remote Sensing. South Carolina October '15 Flood Workshop Understanding the Path to Resilience, Adaptation, and Recovery, Columbia, SC, June 15, 2016. (**Li Z.**, Wang C., Emrich C., Guo D.)
105. Remote Sensing of Flooding Dynamics, Congaree River Watershed. South Carolina October '15 Flood Workshop Understanding the Path to Resilience, Adaptation, and Recovery, Columbia, SC, June 15, 2016. (Wang C., **Li Z.**, Emrich C.)
106. Panelist, "HPC and Big Data Challenges at USC" session at the Symposium on Research Computing Infrastructure. USC, April 15, 2016. (**invited**)

2015

107. A spatiotemporal indexing approach for efficient process of big array-based climate data with MapReduce. International Symposium on Spatiotemporal Computing, Fairfax, Virginia, July 13-15, 2015 (**Li Z.**, Hu F., Schnase J., et al.)
108. Enabling the acceleration of dust simulation using job scheduling method in a cloud environment, Geocomputation, 2015, Dallas, TX, US. (Yu M., Yang C., and **Li Z.**)
109. An Index for Efficient Retrieval and Process of Big Array-based Geospatial Data in Hadoop Distributed File System, 2015, AAG, Chicago, IL, US. (Hu F., **Li Z.**, and Yang C.)
110. Enabling Big Climate Data Processing with a Cloud-based Workflow Framework. AAG annual meeting, Chicago, IL. April 21 - 25, 2015
111. Cloud Computing for Geospatial Data Sciences. 2015 Unidata Users Workshop, Boulder, Colorado. June 22-25, 2015 (**invited**)
112. A Columnar Storage Strategy with Spatiotemporal Index for Big Climate Data, 2015 AGU Fall Meeting. (Hu F., Bowen M., **Li Z.**, Schnase J., Duffy D., Lee T., and Yang C., poster presentation)
113. Cloud-based, workflow-enabled and service-oriented scientific workflow framework. ESIP Winter Meeting, Washington DC. Jan. 06-09, 2015 (**invited**)

2014

114. A MapReduce-enabled Framework for Processing Big Climate Data, AAG annual meeting, Tampa, FL. Apr. 8-12, 2014 (**Li Z.**, Yang C., Liu K.)
115. Keynote Address: Cloud Computing for Geosciences. ESIP Federation Meeting, Frisco, CO. Jul. 8-11, 2014 (**invited**)

2013

116. Climate@Home: Citizen Science for Climate Change (Robert Raskin Mashup Mapping Student Competition), AAG meeting, Los Angeles, CA. April 9-13, 2013 (**Li Z.**, Sun M., Jiang Y., Liu K.)
117. A High Performance Web-Based System for Analyzing and Visualizing Spatiotemporal Data for Climate Studies, AAG meeting, Los Angeles, CA. Apr. 9-13, 2013 (**Li Z.**, Yang C., Sun M., Li J., Xu C., Huang Q., & Liu K.)
118. Using MapReduce and cloud computing to support geospatial processing, AAG meeting, Los Angeles, CA. Apr. 9-13, 2013 (Huang Q., **Li Z.**, Yang C.)
119. Using Semantic Web to Optimize the Discovery, Access, and Utilization of Big Geospatial Data, Virtual Semantic Web Workshop, May 7, 2013 (Yang C., Liu K., Xia J., Gui Z., **Li Z.**, Xu C.)

2011

120. The GEOSS Clearinghouse High Performance Search Engine, the 19th International Conference on Geoinformatics, Shanghai, China, June 24-26, 2011. (Liu K., Yang C., Li W., **Li Z.**, Wu H., Rezgui A., and Xia J.)

2010

121. Quality-supported architecture for Geospatial Information Service, AAG meeting, Washington, DC Apr. 14-18, 2010 (Wu H., Li Z., Yang C.,)
122. Metadata Standards in GEOSS Clearinghouse, ESIP Federation Meeting, Knoxville, TN, July 20-23, 2010 (Liu K., Yang C., Wu H., Li W., **Li Z.**, Miao L., Huang Q.)
123. Seamless Integration and Visualization of Heterogeneous and Distributed Earth Science Data Using Bing Map, ESIP Federation Meeting, Knoxville, TN, July 20-23, 2010 (Wu H., Yang C., **Li Z.**, Qu X., Xu Y.)
124. Spatial Web Service Evaluator for Supporting Spatial Web Portal, July 20-23, 2010, ESIP Federation Meeting, Knoxville, TN (Li J., Yang C., Wu H., **Li Z.**, Sun M., Otunba R.)

125. Cloud Computing for Earth Science –Parallelize and schedule spatial computing for WRF-NMM model (Best student presentation, 2nd place), AAG Annual Meeting, Washington, 14-18 April 2010 (Huang Q., Yang C., Wu H., Xie J., Li J., **Li Z.**, Sun M.)

2009

126. Application Composition based on WMS Layers for Supporting Spatial Data Infrastructure, AGU Fall Meeting, San Francisco, CA, Dec 14-1, 2009 (**Li Z.**, Wu H., Yang C.)
127. Real-time Monitoring of WMS Quality for Optimized Map Composition with Distributed WMS Layers, AGU Fall Meeting, San Francisco, CA, Dec 14-1, 2009 (Wu H., **Li Z.**, Yang C.)
128. Water and Energy Cycle EOS House web portal (WECHO), AAG meeting, Las Vegas, NV. Mar. 22-27, 2009 (**Li Z.**, Huang Q., Li W. Zhu H., Yang C., Houser P., Larko M.)

2008

129. Earth Information Exchange: sharing the geospatial resources for Earth science and applications in an interoperable fashion, AAG meeting, Boston, Apr.18-23, 2008 (**Li Z.**, Yang C., Li W., Li J., Huang Q., Zhou X.)
130. Sharing earth science information to support the global earth observing system of systems (GEOSS), IGARSS 2008, Boston, Massachusetts, July 7 (Bambacus M, Yang C., Evans J., **Li Z.**, Li W., Huang Q, presented by Bambacus M)
131. Portal & Interoperability: share ESG Portlets to support EIE through JSR 1/268 & WSRP (Yang C., **Li Z.**, Li W.)
132. Geo-visualization for Geosciences data in World Wind. 2008 AGU Fall Meeting. (Li, J., **Li, Z.**, Xie, J., Huang, Q., Li, W., & Yang, C.)
133. The WECHO project, presented at ESIP summer meeting, July 17, 2008, New Hampshire. (Houser, P. R., Yang C., **Li Z.**, Larko M.)
134. Water Cycle ECHO Client, presented at ESIP summer meeting, July 17, 2008, New Hampshire. (Zhu H., **Li Z.**)

TEACHING AND ADVISING

Courses Taught

- GEOG 363 *Introduction to Geographic Information Systems* (Spring 2016, Fall 2017, Spring

2018, Spring 2019, Fall 2020, Spring 2021; Fall 2021; Spring 2022)

- GEOG 531 *Quantitative Methods in Geographic Research* (Fall 2015, Fall 2019, Fall 2021, Fall 2023)
- GEOG 554 *Spatial Programming with Python and ArcGIS (new development)* (Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021, Fall 2023)
- GEOG 556 *WebGIS (new development)* (Fall 2018, Fall 2019, Fall 2020)
- GEOG 763 *Seminar in Geographic Information Science (new theme: Geospatial Big Data, cloud computing and Cyberinfrastructure--Innovations and Applications)* (Fall 2016, Fall 2017, Fall 2018, Spring 2020; Spring 2022)

Directed Individual Study Courses

GEOG 705 Spatiotemporal Visitation and Sentiment Analysis Research Methods (Fall 2023); GEOG 805 A Parallel Algorithm Based on Feature Density for Multiple Geographical Features Label Place (Fall 2022); GEOG 705 Quantitative Methods in Geography (Fall 2021); GEOG 706 Advanced Remote Sensing with Deep Learning Techniques (Spring 2021); GEOG 499 Senior Thesis (Spring 2021); GEOG 805 Advanced Directed Individual Studies in Geography (Spring 2021); GEOG 498 Undergraduate Research (Fall, 2020); GEOG 705, Quantitative Methods in Geographic Research (Fall 2019); GEOG 705 Human Mobility Data Model Development (Spring 2019); GEOG 705 Task parallelization in the cluster environment(Fall, 2018); GEOG 705 Human Dynamics in Disasters (Fall, 2018); GEOG 705 Natural Disasters and Social Media (Spring 2018) ; GEOG 705 Build customized deep learning training dataset for remote sensing image classification (Spring 2018) ; GEOG 705 Parallel Computing for Big Climate Data Analytics (Spring 2018) ; GEOG 705 A Web-based Decision Support Platform for Community Engagement in Water Resources Planning (Spring 2017) ; GEOG 705 Spatiotemporal Analysis of Human Mobility Patterns with Transportation Data and Social Media (Summer 2017); GEOG 805 Human Mobility in the Era of Big Data (Summer 2017); GEOG 399 When, Where, and Who: Mining Billions of Tweets to Understand Celebration Patterns of US Holidays (Fall, 2017)

Advising/Mentoring

As Postdoc/Junior Faculty Mentor

1. Dr. Fengrui Jing, Postdoctoral Research Fellow, Geoinformation and Big Data Research Lab, Department of Geography, University of South Carolina (2022- 2023; Now as a Tenure-track Assistant Professor at Jinan University, Guang Zhou, China)
2. Dr. Diego Leal Castro, Assistant Professor of Sociology, University of South Carolina, via the R25 Fellow program at Big Data Health Science Center (2021 - 2022)

As Committee Chair*Current:*

1. Ali Khosravi Kazazi, Ph.D. student of Geography, Penn State (2024 - present)
2. Temitope Ezekiel Akinboyewa, Ph.D. student of Geography, Penn State (2023 - present)
3. Naser Lessani, Ph.D. student of Geography, Penn State (2022 - present)
4. Huan Ning, Ph.D. student of Geography, Penn State (2021 – present)

Graduated:

5. Yuqin Jiang, Ph.D. student of Geography, USC (2017 - 2022)
6. Alex Fulham, M.S. student of Geography, USC (2021 - 2023)
7. Huan Ning, M.S. student of Geography, USC (2017 – 2019)
8. Mary Windsor, M.S. student of Geography, USC (2016-2017)
9. Finn Hagerty, Undergraduate Student Senior Thesis (Graduate with Distinction), Geography, USC (2019 – 2021)

As Committee Member*Current:*

10. Chamberline Ozigbu, Ph.D. student of Public Health, USC (2019 - present)
11. Camryn Garrett, Ph.D. student of Public Health, USC (2023 - present)
12. Kyser Daniels-Baessler, M.S. student of Geography, USC (2023 - present)

Graduated:

13. Sarah Jackson, Ph.D. student of Geography, USC (2020 – 2023)
14. Xinyi Liu, Ph.D. student of Geography, University of Wisconsin-Madison, (2018 – 2023)
15. Qian Huang, Ph.D. student of Geography, USC (2018 – 2022)
16. Grayson Morgan, Ph.D. student of Geography, (2019-2022)
17. Christopher Krause, Ph.D. student of Geography, USC (2019-2021)
18. Sahar Derakhshan, Ph.D. student of Geography, USC (2016-2020)
19. Xiao Huang, Ph.D. student of Geography, USC (2017-2020)
20. Nicholas Sokol, Ph.D. student of Geography, USC (2017-2020)
21. Yago Martin, Ph.D. student of Geography, USC (2016-2019)
22. Margot Habets, M.S. student of Geography, USC (2020 – 2022)
23. Andrew White, M.S. student of Geography, USC (2020 – 2022)
24. Nicole Steeves, M.S. student of Geography, USC (2019 – 2022)
25. Leah Blackwood, M.S. student of Geography, USC (2020 – 2022)
26. Logan Lee, M.S. student of Geography, USC (2019 – 2021)
27. Jacob Ramthun, M.S. student of Geography, USC (2018 – 2020)

28. Tracy Whelen, M.S. student of Geography, USC (2019 – 2020)
29. Grayson Morgan, M.S. student of Geography, USC (2019 – 2020)
30. Alan Rickenbaker, M.S. student of Geography, USC (2019 – 2020)
31. Raelene Campbell, M.S. student of Geography, USC (2017-2018)
32. Erika Pham, M.S. student of Geography, USC (2017-2018)
33. Yuqin Jiang, M.S. student of Geography, USC (2016-2017)
34. Aysegul Yeniaras, M.S. student of Geography, USC (2015-2017)
35. Ike Vayansky, M.S. student of Computing Sciences, Coastal Carolina University (2017-2018)
36. Reagan Murphy, Honors Thesis, Undergraduate of USC Honors College (2018 – 2019)
37. Ethan Magnuson, Honors Thesis, Undergraduate of USC Honors College (2019 – 2021)

Former Visiting Scholars

38. Anna Fiedukowicz, Warsaw University of Technology, 2019
39. Dong Xu, East China Normal University, 2019-2020

Others

- Academic Advisor (invited) for the KNIME Training Workshop on Sentiment Analysis in Social Media Data, co-organized by Center for Geographic Analysis at Harvard University, NSF Spatiotemporal Innovation Center, Future Data Lab, and KNIME. November 2022
- Mentor for the NIH-funded T35 Research Traineeship Program in Big Data Science (2021-2023, <https://bigdata.sc.edu/t35-mentors/>). Mentee: Ali Zain (PhD student)
- Mentor for T35 Big Data Health Science Scholar Program for Infectious Diseases. Mentee: Eric Inman (2023)
- Mentor for the CHQ Junior Scholar, SC SmartState Center for Healthcare Quality (2023-2024), Mentees: Camryn Garrett (PhD student) and Fanghui Shi (PhD Student)
- Teaching Grant for Online Course Design, GEOG 105 Digital Earth, USC Center for Teaching Excellence (2020)
- Teaching Innovation Grant for Integrative Learning, GEOG 554 Spatial Programming, USC Connect and Center for Teaching Excellence, (2016)
- Fall 2014: Teaching Assistant, GGS 650 Introduction to GIS Programming and Algorithms (partly taught the course)
- Summer 2014: advised undergraduate student Mathew Zhan for his summer internship.
- Fall 2013: Teaching Assistant, GGS 650 Introduction to GIS Programming and Algorithms (partly taught the course)
- Jan. 2013: Instructor, Cloud Computing Hands-on Workshop, 2013 ESIP Winter Meeting.
- Summer 2009: advised a high school student Kevin Huang on summer internship.
- Spring 2008: Teaching Assistant, GEOG 563 Advanced Geographic Information System

ACADEMIC SERVICES AND OUTREACH

USC Services

Departmental service

- 2017 - 2023, Undergraduate Advising
- 2022 - 2023, Chair's Advisory Committee
- 2020 - 2022, Faculty Senator
- 2021 - 2022, Undergraduate Director
- 2021-2022, Awards and Scholarships Committee
- 2021 - 2022, Ombudsperson
- 2022, Chair Search Committee
- 2020, Geography Mapping in Justice Competition, Judge
- 2020, Graduate Admissions Committee (Chair)
- 2018, 2019, Graduate Admissions Committee (Member)
- 2018, Ad Hoc Awards Committee (Lovingood Award)
- 2017 - 2018, Search Committee (Human Rights hire)
- 2017 - 2018, Delegate of University Consortium for Geographic Information Science
- 2017-2019, Undergraduate Recruitment Committee
- 2016-2017, Library Representative
- 2017, Search Committee (Instructor hire)
- 2015 - 2020, Member, Computer Policy Standing Committee
- 2016, 2017, 2019 Moderator, AAG session student practice

College and University service

- 2022, NSF EPSCoR Internal Competition Review Panel
- 2022 – present: Co-lead of Social Media Core, USC Big Data Health Science Center
- 2022, ASPIRE Program Review Committee
- 2021, Data Science and Data Analytics Working Group, College of Arts and Sciences
- 2022 – present: Steering Committee, USC Big Data Health Science Center
- 2021, ASPIRE Program Review Committee
- 2018 and 2019, NSF EPSCoR Internal Competition Review Panel
- 2018, ASPIRE Program Review Committee
- 2017-2018, Faculty Senate Information Technology Committee
- 2016, Served as a Mentor at the New Faculty Orientation

Professional Activities

- Editorial Services
 - 2023 – present, Associate Editor, *International Journal of Digital Earth* (Taylor and Francis)
 - 2023 – present, Associate Editor, *International Journal of Applied Earth Observation and Geoinformation* (Elsevier)
 - 2017- present, Editorial Board, *ISPRS International Journal of Geo-Information*
 - 2018 – present, Editorial Board, *PLOS ONE*
 - 2019 – present, Editorial Board, *Geo-spatial Information Science*
 - 2020 – 2023, Editorial Board, *Big Earth Data*
 - 2022 – 2023, Editorial Board, *International Journal of Digital Earth*
 - 2020 – 2021, Editorial Board, Infectious Diseases – Surveillance, Prevention and Treatment (specialty section of *Frontiers in Medicine* and *Frontiers in Public Health*),
- Cyberinfrastructure Specialty Group (CISG) of American Association of Geographers (AAG)
 - Past Chair, 2020 - 2021
 - Chair (elected), 2019 - 2020
 - Vice Chair (elected), 2018 - 2019
 - Secretary/Treasurer (elected), 2016-2018
 - Award Committee, 2016-2020
 - Board Director (student, elected), 2013-2014
 - Webmaster, 2009-2010
- International Association of Chinese Professionals in Geographic Information Sciences (CPGIS)
 - Board of Director (elected) Member, 2017-2019
 - Election Committee (appointed), 2018
 - Urban computing and spatial planning committee, 2020-present
 - Education Committee, 2018-2021
 - China Base Committee, 2017-2021
- Federation of Earth Science Information Partners (ESIP)
 - Co-Chair, Cloud Computing Group (appointed), 2018-2019
 - Student (Young Researcher) Fellowship, 2014
- 2012-2015: Webmaster, ICWG IV/II: Computing Optimization for Spatial Databases and Location-based Services, ISPRS
- 2010-2011, English Abstract Editor, *Journal of Geomatics and Spatial Information Technology* (in Chinese)
- 2005-2006, Leading Co-Founder and Chair of the SpaceSoft Club (geospatial software)

development) in Wuhan University

Served on Professional Committees

1. Organizing Committee, AAG 2024 Symposium on Geospatial Data Science for Sustainability, Honolulu, HI. April 16-20, 2024
2. International Program Committee, 10th International Conference on Geographical Information Systems Theory, Applications and Management (GISTAM 2024), Angers, France, May 2-4, 2024
3. Programming Committee, Symposium on Harnessing the Geospatial Data Revolution for Sustainability Solutions, AAG Annual Meeting, Denver, Colo., Mar 23 - 27, 2023
4. Programming Committee, I-GUIDE Forum 2023, Columbia University, New York City, October 4-6, 2023
5. Programming Committee, National Big Data Health Science Conference 2023, Columbia, SC. February 10-11, 2023.
6. Programming Committee Member, 5th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2022), Seattle, Washington, USA, November 1, 2022
7. Programming Committee Member, Symposium on Data-Intensive Geospatial Understanding in the Era of AI and CyberGIS, AAG 2022, Feb. 25- Mar. 1, 2022, New York City.
8. Programming Committee Member, 4th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2021), Virtual, November 2, 2021
9. Programming Committee Member, 3rd ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2020), Seattle, Washington, November 3, 2020
10. Programming Committee Member, Special Session: The 2nd AI with Geographic Information Systems for Social Good, 19th IEEE International Conference on Machine Learning and Applications, Miami, Florida, December 14-17, 2020
11. Programming Committee Member, Symposium on Frontiers in CyberGIS and Geospatial Data Science, AAG Annual Meeting, Denver, Colo., April 6-10, 2020
12. Organizing Committee Member, The 6th Symposium on Human Dynamics Research, AAG Annual Meeting, Denver, Colo., April 6-10, 2020
13. Programming Committee Member, Symposium on Artificial Intelligence and Deep Learning in Geography, AAG Annual Meeting, Denver, Colo., April 6-10, 2020
14. Programming Committee Member, 2nd ACM SIGSPATIAL Workshop on Advances in Resilient and Intelligent Cities (ARIC), Nov. 5, 2019, Chicago, Illinois, US
15. Programming Committee Member, International Geoinformatics Week, Guangzhou, China, Nov. 22-25, 2019 (Annual Meetings of Geoinformatics in Sustainable Ecosystem and Society and Geospatial Artificial Intelligence for Urban Computing)

16. Evaluation Committee Member of 2019 Travel Award for Ph.D. students, ISPRS International Journal of Geo-Information
17. Program Committee Member, NCCTA'2019: National Conference on Computer Technologies and their Applications, Saida University, Algeria, December 4-5, 2019
18. Program Committee Member, AAG 2019 Symposium on Frontiers in Geospatial Data Science, April 3-7, 2019 - AAG Annual Meeting, WASHINGTON DC 2019
19. Organizing Committee Member, 2nd International Conference on Earth Science & Geo Science, August 12-13, 2019 at Prague, Czech Republic.
20. Organizing Committee Member, International Conference on Computer Science & Cloud Computing (ICCCSC-2019), July 22-23, 2019, Italy
21. Programming Committee Member, Symposium on Artificial Intelligence and Deep Learning in Geography, April 10-14, 2018, New Orleans
22. Programming Committee Member, Symposium on Spatiotemporal Thinking, Computing and Applications, AAG Annual Meeting, April 10-14, 2018, New Orleans
23. Programming Committee Member, Symposium on CyberGIS and Spatial Data Science, AAG Annual Meeting, April 10-14, 2018, New Orleans
24. Programming Committee Member, Second Edition International Conference on Big Data and Advanced Wireless technologies, 2018, Oxford, United Kingdom.
25. Programming Committee Member, 2nd International Symposium on Spatiotemporal Computing, NSF STC/ISPRS, August 7-9, 2017 at Harvard University
26. Programming Committee Member, Symposium on Spatiotemporal Thinking, Computing and Applications, AAG Annual Meeting, April 5-9, 2017, Boston
27. Programming Committee Member, International Workshop on Cloud Computing and Big Data, NSF Spatiotemporal Innovation Center, GGL, ISPRS, July 25 -27, 2016, Fairfax, Virginia
28. Organizing Committee Member, Symposium on Spatiotemporal Thinking, Computing and Applications, 2016 AAG annual meeting
29. Organizing Committee Member, 1st International Symposium on Spatiotemporal Computing, NSF Spatiotemporal Innovation Center (STC)/ISPRS, July 13-15, 2015, Fairfax, VA

Conference Sessions Organized/Chaired

1. Session: Harnessing Big Social Data for Public Health Research, 4th National Big Data Health Science Conference, Feb. 10-11, 2023. Columbia, SC. (co-organized with Qiao S.)
2. Big Data Computing for Geospatial Applications (I and II), AAG Annual Meeting, March 23-27, 2023, Denver (co-organized with Ning H., Huang Q., Shook E., Tang W.)
3. Human Mobility Analytics in Big Data Era, AAG Annual Meeting, March 23-27, 2023,

- Denver (co-organized with Lessani N., Ning H.)
4. Harnessing Geospatial Big Data for Infectious Diseases, AAG Annual Meeting, March 23-27, 2023, Denver (co-organized with Jing F., Lai S., Huang B., Stewart K.)
 5. Harnessing Geospatial Information for Mental Health and Emotion Issues, AAG Annual Meeting, March 23-27, 2023, Denver (co-organized with Jing F., Ning H., Qiao S)
 6. Multimodal Learning with Geospatial Big Data, AAG Annual Meeting, March 23-27, 2023, Denver (co-organized with Wu M., Huang Q., Huang X., Michels A., Park J., Gao S.)
 7. Social Sensing and Big Data Computing for Disaster Management, AAG Annual Meeting, March 23-27, 2023, Denver (co-organized with Lessani, Ning H., Huang Q., Emrich C.)
 8. Urban Sensing and Understanding via Big Data and GeoAI, AAG Annual Meeting, March 23-27, 2023, Denver (co-organized with Ning H., Jing F.)
 9. Uncertainties in Big Data Analytics in Disaster Research, AAG Annual Meeting, March 23-27, 2023, Denver (co-organized with Kar B., Chow E., Huang Q.)
 10. Urban Computational Paradigms with Shareable Data, Models, Tools, and Frameworks, 2022 AAG, Feb. 25 – Mar. 1, 2022, New York City (co-organized with Huang X., Ye X.)
 11. Symposium on Human Dynamics Research: Human mobility in Big Data Era I & II, 2022 AAG, Feb. 25 – Mar. 1, 2022, New York City (co-organized with Jiang Y, Huang X.)
 12. Uncertainties in Big Data Analytics in Disaster Research, 2022 AAG, Feb. 25 – Mar. 1, 2022, New York City (co-organized with Edwin Chow, Huang Q.)
 13. Harnessing Geospatial Big Data for Infectious Diseases, 2022 AAG, Feb. 25 – Mar. 1, 2022, New York City (co-organized with Lai S., Huang B., Stewart K.)
 14. Social Media and Big Data for Disasters, AAG annual meeting, Online, April 7-11, 2021 (co-organized with Kar B., Huang Q., Chow E.).
 15. Mobility Data: Applications and Challenges, AAG annual meeting, Online, April 7-11, 2021 (co-organized with Hu T.).
 16. CISG Robert Raskin Student Competition Panel Session, AAG annual meeting, Denver, Colo., April 6-10, 2020 (Chair, co-organized with Hohl A., held virtually)
 17. Symposium on Human Dynamics Research: Human Mobility in Big Data Era, AAG annual meeting, Denver, Colo., April 6-10, 2020 (co-organized with Jiang Y., cancelled due to the pandemic)
 18. Big Data Computing for Geospatial Applications in the Symposium on Frontiers in CyberGIS and Geospatial Data Science, AAG annual meeting, Denver, Colo., April 6-10, 2020 (Chair, co-organized with Tang W., Shook E., cancelled due to the pandemic)
 19. Human Mobility in Big Data Era, AAG Annual Meeting, Denver, Colo., April 6-10, 2020 (co-organized with Jiang Y., Ye X., cancelled due to the pandemic)
 20. Social Media Big Data and Uncertainties in Disaster Research, AAG Annual Meeting, Denver, Colo., April 6-10, 2020 (co-organized with Kar B., Chow E., Huang Q., cancelled due to the pandemic)

21. Big Data and GeoAI for Natural Hazards, in Symposium on Artificial Intelligence and Deep Learning in Geography, AAG Annual Meeting, Denver, Colo., April 6-10, 2020 (co-organized with Huang Q., cancelled due to the pandemic)
22. Big Data Computing for Geospatial Applications, April 3-7, 2019 - AAG Annual Meeting, Washington DC 2019 (co-organized with Tang W., Shook E., Huang Q.)
23. Big Data and GeoAI for Natural Hazards, AAG 2019 Symposium on Frontiers in Geospatial Data Science, April 3-7, 2019 - AAG Annual Meeting, Washington DC 2019 (co-organized with Huang Q.)
24. Panel session: Social Sensing and Big Data Computing for Disaster Management, 2019 AAG annual meeting (co-organized with Huang Q.)
25. Smart Cities and Urban Computing, 2019 AAG Annual Meeting (co-organized with Wang S. and Ye X.)
26. Session Chair, Symposium on New Horizons in Human Dynamics Research: Smart Cities and Urban Computing I, 2018 AAG annual meeting
27. Session Chair, Big Data Streams and Mining for Natural Hazards, 2018 AAG annual meeting
28. Big Data Computing for Geospatial Applications, 2018 AAG annual meeting (co-organized with Huang Q., Tang W., Shook E.)
29. Panel session: Social Sensing and Big Data Computing for Disaster Management, 2018 AAG annual meeting (co-organized with Huang Q.)
30. Symposium on New Horizons in Human Dynamics Research: Smart Cities and Urban Computing I, 2018 AAG annual meeting (co-organized with Ye X., Wang S., Mesev V.)
31. Big Data Streams and Mining for Natural Hazards, 2018 AAG annual meeting (co-organized with Huang Q., Ye X.)
32. Symposium on New Horizons in Human Dynamics Research: Smart Cities and Urban Computing III, 2018 AAG annual meeting (co-organized with Wang S. and Ye X.)
33. High Performance Computing for Big Spatiotemporal Analytics, 2017 AAG annual meeting (co-organized with Hu F.)
34. CISG Robert Raskin Student Competition, 2017 AAG annual meeting (co-organized with Tang W.)
35. Session Chair, International Workshop on Cloud Computing and Big Data, NSF Spatiotemporal Innovation Center, GGL, ISPRS, July 25 -27, 2016, Fairfax, Virginia
36. High Performance Computing for Spatiotemporal Analytics, 2016 AAG annual meeting (co-organized with Hu F.)
37. New Data Sources, Technologies, and Tools for Disaster Management, 2016 AAG annual meeting (co-organized with Huang Q.)
38. Spatiotemporal Computing for Spatial Big Data Science, 2015 AAG annual meeting (co-organized with Hu F.)

39. Spatiotemporal Thinking, Computing, and Applications: Climate and Weather Change, 2015 AAG annual meeting (co-organized with Sun M.)
40. WebGIS: Technologies and applications, 2015 AAG annual meeting (co-organized with Xia J.)
41. Integrating spatiotemporal and advanced computing technologies for geosciences, 2014 AAG annual meeting (Li Z.)
42. Technologies and applications of Web-based GIS, 2014 AAG annual meeting (co-organized with Xia J.)
43. Session Chair, Integrating spatiotemporal and advanced computing technologies for geosciences, 2014 AAG annual meeting
44. Cloud computing for geosciences, 2014 AAG annual meeting (Li Z.)
45. Technologies and applications of the modern Web-based GIS session, 2013 AAG annual meeting (co-organized with Xia J.)
46. CyberGIS Symposium: CyberGIS for supporting climate studies session, 2013 AAG annual meeting (Li Z.)
47. Session Chair, Technologies and applications of the modern Web-based GIS session, 2013 AAG annual meeting

Manuscript Reviews for Peer-reviewed Journals

For 35 international journals including:

- *International Journal of Geographical Information Science*
- *Geoinformatica*
- *Annals of the American Association of Geographers*
- *Computers, Environment and Urban Systems*
- *International Journal of Digital Earth*
- *Cartography and Geographic Information Science*
- *Computers & Geosciences*
- *PLOS ONE*
- *ISPRS International Journal of Geo-Information*
- *Weather, Climate and Society*
- *Environmental Modelling & Software*
- *Annals of GIS*
- *Information Sciences*
- *Journal of Geography*
- *Information*
- *Journal of Geographic information System*
- *Journal of Spatial Science*
- *Transportation Research Part C;*
- *Journal of Risk and Financial Management*

- *Transactions in GIS*
- *Journal of Geovisualization and Spatial Analysis*
- *Informatics; Urban Science*
- *Frontiers in Big Data*
- *Cities*
- *International Journal of Disaster Risk Reduction*
- *Geo-spatial Information Science*
- *Remote Sensing*
- *Natural Hazards*
- *Future Generation Computer Systems*
- *Journal of Ambient Intelligence and Humanized Computing*
- *Annals of Epidemiology*
- *Growth and Change: A Journal of Urban and Region*
- *Big Data and Society*
- *Nature Communications*
- *Regional Science, Policy and Practice*

Manuscript Reviews for Books and Conferences, and Book Proposal Reviews:

Geographic Information Science & Technology Body of Knowledge; High Performance Computing for Geospatial Applications; Cloud Computing in Ocean and Atmospheric Sciences (Book); Elsevier Book Proposal Review; International Symposium on Spatiotemporal Computing; International Workshop on Web Mapping, Geoprocessing and Services; ACM SIGSPATIAL Workshop on Advances in Resilient and Intelligent Cities (ARIC); Elsevier; Bentham Science Publisher Book proposal review for CRC Press - Taylor & Francis Group, Environmental Engineering & Science, GIS & Remote Sensing

Proposal Reviews

- *Server on the review panel of National Science Foundation (NSF-HEGS program)*
- *Served as an ad-hoc proposal reviewer for*
 - *US National Science Foundation*
 - *US Department of Commerce*
 - *US National Institute of Standards and Technology (NIST)*
 - *Swiss National Science Foundation*
 - *North Carolina Water Resources Research Institute*

Professional Memberships

- *2012-present: International Association of Chinese Professionals in Geographic Information Sciences (CPGIS)*
- *2007- present: Association of the American Geographers (AAG)*

- 2008- present: American Geophysical Union (AGU)
- 2009-present: Cyberinfrastructure Specialty Group, AAG
- 2016- 2023: SouthEastern Division of Association of the American Geographers (SEDAAG)

Media interviews/mentions

- 2022, The Conversation, Fear of COVID-19 and fear of change are dangerously intertwined for 2022, <https://theconversation.com/fear-of-covid-19-and-fear-of-change-are-dangerously-intertwined-for-2022-174849>
- 2020, The New York Times, The Young Cut Loose in Myrtle Beach. The Virus Followed Them Home. <https://www.nytimes.com/2020/07/01/us/coronavirus-myrtle-beach.html>
- 2020, WLTX, UofSC researchers using Twitter to track COVID19, <https://www.wltx.com/article/news/local/street-squad/twitter-data-tracks-covid19>
- 2020, COVID-19 research: Geographer tracks movement with Twitter data, Study holds promise for disease tracking in future outbreaks, https://sc.edu/uofsc/posts/2020/04/covid_impact_twitter_data_air_traffic.php#.YZErFWDMInA
- 2019, Breakthrough Magazine of USC and PreventionWeb.net, Disaster research: Learning from past devastation helps prepare for future events, https://www.sc.edu/uofsc/posts/2019/07/disaster_flood_research.php
- 2017, Charleston City Paper: Avoiding fake news during extreme storms while leveraging Twitter to report the weather, <https://goo.gl/YF6A3Z>
- 2017, ABC Columbia (WOLO): Using Twitter to Track Eclipse Visitors to the Midlands, <http://www.abccolumbia.com/2017/08/18/icymi-using-twitter-to-track-eclipse-visitors-to-the-midlands>
- 2017, South Carolina Radio Network: University of South Carolina researcher uses social media in research on eclipse. <https://www.southcarolinaradionetwork.com/2017/08/22/university-south-carolina-researcher-uses-social-media-research-eclipse>
- 2016, WSPA Columbia: USC Researchers Who Studied SC Flood Share Findings, <http://wspa.com/2016/11/18/usc-researchers-who-studied-sc-flood-share-findings>