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EDUCATION

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

PROFESSIONAL EXPERIENCE

- 2020 – present: Associate Professor, Department of Geography, University of South Carolina, Columbia, SC, USA
- 2015 – 2020: Assistant Professor, Department of Geography, University of South Carolina, Columbia, SC, USA
- 2015 – present: Director, Geoinformation & Big Data Research Laboratory at USC; Faculty Member, Hazards & Vulnerability Research Institute; Faculty Associate, South Carolina SmartState Center for Healthcare Quality; Core Faculty Member, USC Big Data Health Science Center
- 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

- 2020-2023, Peter and Bonnie McCausland Faculty Fellowship, University of South Carolina
- 2020, Breakthrough Star Award, University of South Carolina
- 2017, NSF Travel Award (\$2,000), UCGIS Symposium and summer school, Theme: Collaborative Problem Solving with CyberGIS and Geospatial Data Science, UIUC, Champaign, IL / Arlington, VA, USA
- 2017, Winner of the USGIF/NVIDIA Essay Challenge (with Huan Ning and Susan Wang, two NVIDIA Titan Xp GPUs)
- 2017, USNC/NSF Travel Award (\$1,000), 28th International Cartographic Conference, Washington, DC, USA
- 2015, Outstanding Graduate Ph.D. Award (\$1000), Department of Geography and Geoinformation Science, George Mason University
- 2014, Robert G. Raskin Scholarship (\$3000 award, and ~\$1500 travel award for 2014 ESIP summer meeting), Earth Science Information Partners (ESIP)
- 2013, Top-5 Finalist, Rob Raskin Mashup Mapping Student Competition, Association of the American Geographers
- 2006, Extraordinary Achievements of Student Research, Hubei, China
- 2003 and 2005, Outstanding Student Scholarship, Wuhan University, China

RESEARCH GRANTS

External Funding

1. 2020-2021, Principal Investigator, (Co-PI: Dwayne Porter and Xiaoming Li), RAPID: Monitoring the Spatial Spread of COVID-19 through the Lens of Human Movement using Big Social Media Data, National Science Foundation (NSF), FAIN 2028791, \$108,717
2. 2020-2022, Co-Investigator, (with Sharon Weissman, Neset Hikment, Jianjun Hu, Jiajia Zhang; PI: Xiaoming Li; Co-PI: Bankole Olatosi), 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
3. 2020-2021, Principal Investigator, XSEDE Startup Resource Allocation for A Scalable Online Visual Analytic System for Big Climate Data Analysis, National Science Foundation (NSF), \$1,051.2
4. 2017-2022, Co-Investigator, (with Sharon Weissman, Jianjun Hu, Jiajia Zhang; PI: Xiaoming Li; Co-PI: Bankole Olatosi), Big Data Analytics of HIV Treatment Gaps in South

Carolina: Identification and Prediction, National Institutes of Health (NIH), R01AI127203, \$3,259,978

5. 2018-2019, Principal Investigator, Social Sensing of Disaster Extents and Impacts of Hurricane Florence, Horne LLP, \$5,000
6. 2016-2017, Principal Investigator, (Co-I: Fei Hu), Prototyping a Cloud-based Spatial Web Portal for Parallel Analytics of Big Climate Data, Federation of Earth Science Information Partners (ESIP), \$6,981
7. 2014-2015, Co- Principal Investigator, (PI: Chaowei Yang), Hadoop Middleware for Processing Big Climate Data. NASA/NSF, \$45,000
8. 2013, Co- Principal Investigator, (PI: Chaowei Yang), Advanced Certificate for GeoInformation Sciences, NASG, \$70,000
9. 2011-2012, Principal Investigator, Geospatial Web Services Discovery and Integration based on Tianditu, China Ministry of Education, \$3,500

Internal Funding

10. 2020-2021, Principal Investigator, (Co-PI: John Kupfer), Rapid Estimation of Visitation Activities in U.S. National Parks by Mining Big Social Media Data, ASPIRE Program, \$14,846
11. 2020-2021, Principal Investigator, (Co-PI: Bankole Olatosi, Xiaoming Li), 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
12. 2019-2023, Co-Investigator, (PI: Xiaoming Li), Big Data Health Science Center (BDHSC), University of South Carolina Excellence Initiative, my share of funding: ~\$100,000 (support of one Ph.D. student)
13. 2017-2019, Principal Investigator, Enhancing Situational Awareness by Mining Big Social Media Data in Near-real Time for Disaster Management: A CyberGIS Approach, ASPIRE Program, \$14,861
14. 2018, Principal Investigator, Prototyping a Near Real-time Flood Mapping System with Social Sensing and Big Data Computing, CAS Faculty Research Initiative, \$3,400
15. 2017-2018, Co- Principal Investigator, (PI: Amir Karami)Computational Analysis of the US 2016 Presidential Election in Social Media. USC Office of the Provost, \$15,019
16. 2016-2017, Principal Investigator, Developing a High-Performance Query Analytical Framework to Support Large Scale Climate Data Analysis, ASPIRE Program, \$14,457
17. 2015-2016, Principal Investigator (Co-PI: Susan Wang, Christopher Emrich, Diansheng Guo), 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

18. 2015-2016, Principal Investigator, (PI: Amir Karami), 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

Funded Student-Led Research

19. 2019-2020, Principal Investigator/Adviser (Ph.D. researcher: Yuqin Jiang), Analyzing Human Mobility Patterns during Hurricane Matthew Evacuation, SPARC Program, \$5,000
20. 2017, Principal Investigator/Adviser (Undergraduate researcher: Daniel Newsome), When, Where, and Who: Mining Billions of Tweets to Understand Celebration Patterns of US Holidays, Magellan program, \$3,000

PUBLICATIONS

Books

1. 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
2. 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

Books published from edited collections

3. **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
4. **Li Z.**, Tang W., Huang Q., Shook E., Guan Q. (eds.) (2020) *Big Data Computing for Geospatial Applications*, MPDI, ISBN 978-3-03943-244-8

Articles in peer-reviewed journals

5. **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 the Control Measures through Human Movement using Big Social Media Data: A Study Protocol, *JMIR Research Protocols*, <https://doi.org/10.2196/24432>
6. **Li Z.**, Qiao S., Jiang Y., Li X., (2020), Building a Social media-based HIV Risk Behavior Index to Inform the Prediction of HIV New Diagnosis: A Feasibility Study, *AIDS* (in press)
7. 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*, <https://doi.org/10.3390/ijgi9110675>
8. Huang X., **Li Z.**, Jiang Y., Li X., Porter D., (2020) Twitter reveals human mobility dynamics during the COVID-19 pandemic, *PloS One*, <https://doi.org/10.1371/journal.pone.0241957>
9. Qiao S., **Li Z.**, Weissman S., Li X., Olatosi B., Davis C., Mansaray A., (2020), Disparity in HIV service interruption in the outbreak of COVID-19: A mixed-method study in South Carolina,

- AIDS and Behavior*, <https://dx.doi.org/10.1007%2Fs10461-020-03013-x>
10. 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*, <https://doi.org/10.1080/19475683.2020.1803402>
 11. 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*, <https://doi.org/10.1080/17538947.2020.1809723>
 12. **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>
 13. 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*, <https://doi.org/10.1080/20964471.2020.1776200>
 14. 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) <https://doi.org/10.1080/17538947.2020.1738569>
 15. Xu D., Huang X., **Li Z.**, Li X., (2020). Local Motion Simulation using Deep Reinforcement Learning, *Transactions in GIS*, <https://doi.org/10.1111/TGIS.12620>
 16. 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>
 17. 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*, <https://doi.org/10.1007/s11111-020-00338-6>
 18. 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>
 19. Pham E., Emrich C., **Li Z.**, Mitchem J., Cutter S., (2020) Evacuation Departure Timing during Hurricane Matthew, *Weather, Climate, and Society*, <https://doi.org/10.1175/WCAS-D-19-0030.1>
 20. Martín Y., Cutter S.L., **Li Z.**, (2020) Bridging social media and survey data for the evacuation assessment of hurricanes, *Natural Hazard Review*, 21(2), [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000354](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000354)
 21. 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*, <https://doi.org/10.1080/23754931.2019.1707108>

22. **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>
23. Huang X., **Li Z.**, Wang C., Ning H. (2019), Identifying disaster related social media for rapid response: a visual-textual fused CNN architecture, *International Journal of Digital Earth*, [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000354](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000354)
24. **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*, 1-22, doi: 10.1080/13658816.2019.1605073
25. 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>
26. 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>
27. 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>
28. 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>
29. 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>
30. 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>
31. **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>
32. 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>
33. 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>
34. 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>
35. 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>
 36. **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>, **(top 10 most cited articles in CaGIS as of 12/2019 in Taylor&Francis Online)**
 37. 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>
 38. **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>
 39. **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 operational Data Analytics and Storage System [DASS]).**
 40. 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>
 41. 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> **(#1 most read and #1 most cited article among all articles published in IJDE; #2 most read article of 2018 in Earth Sciences from Taylor & Francis Online; equal contribution with the second author)**
 42. **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>
 43. **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>
 44. 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>
45. **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>
 46. 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>
 47. 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>
 48. 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>
 49. 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>
 50. 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>
 51. **Li Z.**, Xu J., (2012). Location-based Service Platform Construction Based on Cloud Computing. *Geomatics World*, 2012(1), 69-71.
 52. 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>
 53. 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>
 54. 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
 55. **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>
 56. 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>
57. 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**)
58. 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>
59. **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>
60. 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)

Articles in books and proceedings

61. **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
62. **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
63. 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, USA.
64. 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>
65. 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, USA, <https://doi.org/10.1145/3356991.3365469>
66. 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
67. 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, USA., <https://doi.org/10.1145/3283590.3283594>
 68. 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>
 69. 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>
 70. 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>
 71. 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
 72. 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.
 73. 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.
 74. 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.
 75. **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
 76. 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
 77. **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.
78. 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
 79. 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
 80. 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
 81. 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
 82. 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
 83. 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
 84. 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>
 85. **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
 86. 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

87. **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>
88. 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>
89. 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)
 90. **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)
 91. **Li Z.** (2015). Dissertation: Optimizing Geospatial Cyberinfrastructure to Improve the Computing Capability for Climate Studies (committee Chair: Chaowei Yang; committee members: George Taylor, John Schnase, Kirk Borne, Ruixin Yang)

PRESENTATIONS (presented by the first author unless otherwise noted)

2020

1. 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, USA (Zeng C, Zhang J., Sun X., Li Z., Weissman S., Olatosi B., Li X.)
2. Following the Pandemic on Twitter: A Big Data Approach, CAS Public Online Events, July 28, 2020 (Webinar, **invited**)
3. 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 keynote speaker**, online)
<https://online.fliphtml5.com/uxfiv/vyog/#p=25>
4. Disaster Management based on Social Sensing Big Data Computation, Online Guest Lecture, Wuhan University, July 6, 2020 (**invited**)
5. 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>
6. 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, USA (Martin Y., Li Z., Ge Y.) (virtual presentation)

7. 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**)
8. 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**)
9. Leveraging Social Media Data for Disaster Management: Challenges and Applications, Big Data Health Science Conference, February 9-11, 2020 (Li Z.)

2019

10. Li Z., Social Sensing and Big Data for Disasters, China University of Petroleum, Nov. 25, 2019. (**invited**)
11. 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**)
12. Using Social Media Analytics for Enhancing Situational Awareness, Institute of Remote Sensing and Digital Earth, Beijing, China, June 20, 2019 (**invited**)
13. A Scalable Online Visual Analytic System for Big Climate Data Analysis, ESIP Cloud Computing Group Webinar (lightning talk), May 5, 2019 (Li Z.)
14. 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)
15. Social Sensing and Big Data Computing for Disaster Management (Panel Introductory Talk), AAG Annual Meeting, Washington DC, April 3-7, 2019 (Li Z.)
16. Social Media for Disaster Management (presentation in the Social Media Analytics Tool Development Panel), AAG Annual Meeting, Washington DC, April 3-7, 2019 (**invited**)
17. Analyzing Human Mobility Patterns during Hurricane Matthew Evacuation using Twitter, AAG Annual Meeting, Washington DC, April 3-7, 2019 (Jiang Y., Li Z.)
18. 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.)
19. 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.)
20. 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

21. Web-based GIS tools and applications in Public Health, November 27, 2018, Arnold School of Public Health, USC (**invited** guest lecture)
22. 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)
23. Big data, social media and evacuation, *New Generation GIS Workshop*, October 11, 2018, Center for Geographic Analysis, Harvard University, (**invited**)
24. Geospatial Big Data: Challenges, Opportunities, and Applications, *2018 GIS Day at USC* November 14, 2018 (Li Z.)
25. 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.).
26. 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.)
27. SCOVAS: A Scalable Climate Online Visual Analytical System, *AAG Annual Meeting* April 10-14, 2018, New Orleans (Li Z., Huang Q., Hu F.)
28. Understanding Evacuation Decision based on Twitter Network, *AAG Annual Meeting* April 10-14, 2018, New Orleans (Jiang Y., Li Z.)
29. 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.)
30. 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., Piovan S., Davis B.)
31. 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.)
32. 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**)
33. Using Twitter to Monitor Evacuation Behavior in Matthew. National Hurricane Conference. Orlando, FL, 2018. (Martín Y., Li Z., and Cutter S.L.)

2017

34. 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.)

35. 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)**
36. 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.
37. A Scalable Online System for Parallel Query Analytics of Big Climate Data, *The 28th International Cartographic Conference*, July 2-7, 2017, Washington DC
38. Computing and GIScience, *Seminar at the Department of Computing Sciences*, Coastal Carolina University, June 26, 2017**(invited)**
39. Mining Big Twitter Data to Enhance Disaster Situational Awareness, *Seminar at South Carolina SmartState Center for Health Care Quality*, April 28, 2017 **(invited)**
40. Geospatial Big Data Analytics with High Performance Computing, *Symposium on Research Computing Infrastructure*, April 14, 2017, University of South Carolina
41. 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.)
42. 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.)
43. 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.)
44. 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, USA (Wang C., Li Z., Huang X.)
45. 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, USA (Huang X., Wang C., Li Z.)
46. 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.)
47. 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

48. 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.)

49. 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.)
50. 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.)
51. 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.)
52. 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.)
53. BigQuery: Parallel Query Analytics of Big Climate Data, 2016 International Workshop on Cloud Computing and Big Data, Fairfax, Virginia, July 26 – 27, 2016 (**invited**)
54. 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.)
55. 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.)
56. Panelist, "HPC and Big Data Challenges at USC" session at the Symposium on Research Computing Infrastructure. USC, April 15, 2016. (**invited**)

2015

57. 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.)
58. Enabling the acceleration of dust simulation using job scheduling method in a cloud environment, Geocomputation, 2015, Dallas, TX, USA. (Yu M., Yang C., and Li Z.)
59. An Index for Efficient Retrieval and Process of Big Array-based Geospatial Data in Hadoop Distributed File System, 2015, AAG, Chicago, IL, USA. (Hu F., Li Z., and Yang C.)
60. Enabling Big Climate Data Processing with a Cloud-based Workflow Framework. AAG annual meeting, Chicago, IL. April 21 - 25, 2015
61. Cloud Computing for Geospatial Data Sciences. 2015 Unidata Users Workshop, Boulder, Colorado. June 22-25, 2015 (**invited**)
62. 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)

63. Cloud-based, workflow-enabled and service-oriented scientific workflow framework. ESIP Winter Meeting, Washington DC. Jan. 06-09, 2015 (**invited**)

2014

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

2013

66. 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.)
67. 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.)
68. Using MapReduce and cloud computing to support geospatial processing, AAG meeting, Los Angeles, CA. Apr. 9-13, 2013 (Huang Q., Li Z., Yang C.)
69. 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

70. 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

71. Quality-supported architecture for Geospatial Information Service, AAG meeting, Washington, DC Apr. 14-18, 2010 (Wu H., Li Z., Yang C.,)
72. 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.)
73. Seamless Integration and Visualization of Heterogeneous and Distributed Earth Science Data Using Bing Map, ESIP Federation Meeting, Knoxville, TN, July 20-23, 2010 (Co-authors: Wu H., Yang C., Li Z., Qu X., Xu Y.)
74. 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.)

75. 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

76. 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.)
77. 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.)
78. 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

79. 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.)
80. 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)
81. Portal & Interoperability: share ESG Portlets to support EIE through JSR 1/268 & WSRP (Yang C., Li Z., Li W.)
82. Geo-visualization for Geosciences data in World Wind. 2008 AGU Fall Meeting. (Li, J., Li, Z., Xie, J., Huang, Q., Li, W., & Yang, C.)
83. The WECHO project, presented at ESIP summer meeting, July 17, 2008, New Hampshire. (Houser, P. R., Yang C., Li Z., Larko M.)
84. 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)
- GEOG 531 *Quantitative Methods in Geographic Research* (Fall 2015, Fall 2019)
- GEOG 554 *Spatial Programming with Python and ArcGIS* (new development) (Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020)
- GEOG 556 *WebGIS* (new development) (Fall 2018, Fall 2019, Fall 2020)

- GEOG 763 *Seminar in Geographic Information Science* (Theme: Geospatial Big Data, cloud computing and Cyberinfrastructure--Innovations and Applications) (Fall 2016, Fall 2017, Fall 2018, Spring 2020)

Directed Individual Study Courses

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

As Committee Chair

1. Yuqin Jiang, Ph.D. student of Geography, USC (2017 - present)
2. Huan Ning, M.S. student of Geography, USC (2017 – 2019, graduated)
3. Mary Windsor, M.S. student of Geography, USC (2016-2017, graduated)

As Committee Member

Current:

1. Christopher Krause, Ph.D. student of Geography, USC (2019-present)
2. Chamberline E. Ozigbu, Ph.D. student of Public Health, USC (2019-present)
3. Nicole Steeves, M.S. student of Geography, USC (2019 – present)
4. Logan Lee, M.S. student of Geography, USC (2019 – present)
5. Ethan Magnuson, Honors Thesis, undergraduate of USC Honors College (2019 – present)

Graduated:

6. Sahar Derakhshan, Ph.D. student of Geography, USC (2016-2020)
7. Yago Martin, Ph.D. student of Geography, USC (2016-2019)
8. Xiao Huang, Ph.D. student of Geography, USC (2017-2020)

9. Nicholas Sokol, Ph.D. student of Geography, USC (2017-2020)
10. Jacob Ramthun, M.S. student of Geography, USC (2018 – 2020)
11. Tracy Whelen, M.S. student of Geography, USC (2019 – 2020)
12. Grayson Morgan, M.S. student of Geography, USC (2019 – 2020)
13. Alan Rickenbaker, M.S. student of Geography, USC (2019 – 2020)
14. Raelene Campbell, M.S. student of Geography, USC (2017-2018)
15. Erika Pham, M.S. student of Geography, USC (2017-2018)
16. Yuqin Jiang, M.S. student of Geography, USC (2016-2017)
17. Aysegul Yeniaras, M.S. student of Geography, USC (2015-2017)
18. Ike Vayansky, M.S. student of Computing Sciences, Coastal Carolina University (2017-2018)
19. Reagan Murphy, Honors Thesis, undergraduate of USC Honors College (2018 – 2019)

Others

- Teaching Grant for Online Course Design, GEOG 105 Digital Earth, USC Center for Teaching Excellence (2020, \$1,626.13)
- Teaching Innovation Grant for Integrative Learning, GEOG 554 Spatial Programming, USC Connect and Center for Teaching Excellence, (2016, \$3,305)
- 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

- 2020 - present, Faculty Senator
- 2018, 2019, 2020, Graduate Admissions Committee (2020 as committee chair)
- 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 - present, Undergraduate Advising
- 2017-2019, Undergraduate Recruitment Committee
- 2016-2017, Library Representative
- 2017, Search Committee (Instructor hire)
- 2015 - present, Member, Computer Policy Standing Committee
- 2016,2017,2019 Moderator, AAG session student practice

College and University service

- 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
 - Editorial Board, *ISPRS International Journal of Geo-Information*, 2017- present
 - Editorial Board, *PLOS ONE*, 2018 – present
 - Editorial Board, *Geo-spatial Information Science*, 2019 – present
 - Editorial Board (Topic Editor), *Big Earth Data (BEDJ)*, 2020 - present
 - Lead Guest Editor, Special Issue on “Social Sensing and Big Data Computing for Disaster Management” by the *International Journal of Digital Earth* (with Huang Q. and Emrich C.)
 - Lead Guest Editor (invited), Special Issue on “Big Earth Data Analytics” by the *Big Earth Data* (Taylor & Francis) (with John L. Schnase, Susan Wang, Hsiuhan Yang)
 - Lead Guest Editor, Special Issue on “Big Data Computing for Geospatial Applications” by the *ISPRS International Journal of Geo-Information* (with Tang W., Huang Q., Shook E., and Guan Q.)
 - Guest Editor, Special Issue on “Scaling, Spatio-Temporal Modeling, and Crisis Informatics” by the *ISPRS International Journal of Geo-Information* (with Kar B., Ye X., and Huang Q.)
 - Guest Editor, Special Issue on “GIScience for Risk Management in Big Data Era” by the *ISPRS International Journal of Geo-Information* (with Konecny M., and Shen J.)
- Cyberinfrastructure Specialty Group (CISG) of American Association of Geographers (AAG)
 - Past Chair, 2020 - present

- 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
 - Education Committee, 2018-present
 - China Base Committee, 2017-present
- 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, Co-Founder and Chair of the SpaceSoft Club (geospatial software development) in Wuhan University

Served on Professional Committees

1. Programming Committee Member, 3rd ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2020), Seattle, Washington, November 3, 2020
2. 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
3. Programming Committee Member, Symposium on Frontiers in CyberGIS and Geospatial Data Science, AAG Annual Meeting, Denver, Colo., April 6-10, 2020
4. Organizing Committee Member, The 6th Symposium on Human Dynamics Research, AAG Annual Meeting, Denver, Colo., April 6-10, 2020
5. Programming Committee Member, Symposium on Artificial Intelligence and Deep Learning in Geography, AAG Annual Meeting, Denver, Colo., April 6-10, 2020
6. Programming Committee Member, 2nd ACM SIGSPATIAL Workshop on Advances in

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

- Colo., April 6-10, 2020 (Chair, co-organized with Hohl A., held virtually)
2. 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)
 3. 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)
 4. 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)
 5. 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)
 6. 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)
 7. 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.)
 8. 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.)
 9. Panel session: Social Sensing and Big Data Computing for Disaster Management, 2019 AAG annual meeting (co-organized with Huang Q.)
 10. Smart Cities and Urban Computing, 2019 AAG Annual Meeting (co-organized with Wang S. and Ye X.)
 11. Session Chair, Symposium on New Horizons in Human Dynamics Research: Smart Cities and Urban Computing I, 2018 AAG annual meeting
 12. Session Chair, Big Data Streams and Mining for Natural Hazards, 2018 AAG annual meeting
 13. Big Data Computing for Geospatial Applications, 2018 AAG annual meeting (co-organized with Huang Q., Tang W., Shook E.)
 14. Panel session: Social Sensing and Big Data Computing for Disaster Management, 2018 AAG annual meeting (co-organized with Huang Q.)
 15. 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.)
 16. Big Data Streams and Mining for Natural Hazards, 2018 AAG annual meeting (co-organized with Huang Q., Ye X.)

17. 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.)
18. High Performance Computing for Big Spatiotemporal Analytics, 2017 AAG annual meeting (co-organized with Hu F.)
19. CISG Robert Raskin Student Competition, 2017 AAG annual meeting (co-organized with Tang W.)
20. Session Chair, International Workshop on Cloud Computing and Big Data, NSF Spatiotemporal Innovation Center, GGL, ISPRS, July 25 -27, 2016, Fairfax, Virginia
21. High Performance Computing for Spatiotemporal Analytics, 2016 AAG annual meeting (co-organized with Hu F.)
22. New Data Sources, Technologies, and Tools for Disaster Management, 2016 AAG annual meeting (co-organized with Huang Q.)
23. Spatiotemporal Computing for Spatial Big Data Science, 2015 AAG annual meeting (co-organized with Hu F.)
24. Spatiotemporal Thinking, Computing, and Applications: Climate and Weather Change, 2015 AAG annual meeting (co-organized with Sun M.)
25. WebGIS: Technologies and applications, 2015 AAG annual meeting (co-organized with Xia J.)
26. Integrating spatiotemporal and advanced computing technologies for geosciences, 2014 AAG annual meeting (Li Z.)
27. Technologies and applications of Web-based GIS, 2014 AAG annual meeting (co-organized with Xia J.)
28. Session Chair, Integrating spatiotemporal and advanced computing technologies for geosciences, 2014 AAG annual meeting
29. Cloud computing for geosciences, 2014 AAG annual meeting (Li Z.)
30. Technologies and applications of the modern Web-based GIS session, 2013 AAG annual meeting (co-organized with Xia J.)
31. CyberGIS Symposium: CyberGIS for supporting climate studies session, 2013 AAG annual meeting (Li Z.)
32. Session Chair, Technologies and applications of the modern Web-based GIS session, 2013 AAG annual meeting

Manuscript Reviews for Peer-reviewed Journals

For over 30 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 Regio

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

Proposal Reviews

National Science Foundation (NSF); U.S. Department of Commerce, National Institute of Standards and Technology (NIST); 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- 2018: SouthEastern Division of AAG (SEDAAG)

Media interviews/mentions

- 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>
- 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>