

# Lei Zou (he/him)

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## **RESEARCH INTERESTS**

- Geographic Information Science (GIScience)
- Geospatial Artificial Intelligence (GeoAI)
- Geospatial Big Data and Microdata
- Geospatial Digital Twins
- Disaster Resilience, Vulnerability, and Risk
- Injustice in Environmental Health
- Circadian Rhythms and Disorders
- Smart and Equal Emergency Management

## **TEACHING INTERESTS**

- GIS and Remote Sensing
- Geospatial Data Science
- Data Analysis and Visualization
- Machine Learning and Deep Learning
- GeoDatabases
- Programming (Python, R, JavaScript)
- Human-Environment Modeling and Simulation
- GIS Project Management and Practicum

## **EDUCATION**

- 2014-2017 **Ph.D.**, Environmental Science, Louisiana State University, Baton Rouge, LA  
Outstanding Dissertation and Dr. Joseph Martinez Memorial Awards
- 2010-2013 **M.S.**, Cartography and GIS, Chinese Academy of Sciences, Beijing, China
- 2006-2010 **B.E.**, Remote Sensing and Photogrammetry, Wuhan University, Wuhan, China

## **APPOINTMENTS**

### • Academic Institutions

- 2019-pres. Assistant Professor, Department of Geography, Texas A&M University (TAMU)
- 2023-pres. Faculty Affiliate, Center for Biological Clocks Research, TAMU
- 2019-pres. Research Affiliate, Texas A&M Institute of Data Sciences, TAMU
- 2018-pres. Faculty Fellow, Hazard Reduction and Recovery Center, TAMU
- 2018-2019 Visiting Assistant Professor, Department of Geography, TAMU
- 2017-2018 Postdoctoral Researcher, Environmental Sciences, Louisiana State University
- 2014-2017 Research Assistant, Environmental Sciences, Louisiana State University
- 2010-2013 Research Assistant, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

### • Professional Organizations

- 2023-pres. Vice Chair, American Association of Geographers - Geographic Information Sciences & Systems Group Specialty Group (AAG-GISS-SG)
- 2022-pres. Vice Chair, International Cartographic Association Commission on Geospatial Analysis and Modeling (ICA-GAM)
- 2022-pres. Board of Directors Member, Cartography and Geographic Information Society (CaGIS)
- 2019-pres. Research Committee Member, University Consortium for Geographic Information Science (UCGIS)
- 2022-2023 Academic Director, American Association of Geographers - Geographic Information Sciences &

- Systems Specialty Group (AAG-GISS-SG)
- 2020-2022 Communication Director, American Association of Geographers - Geographic Information Sciences & Systems Specialty Group (AAG-GISS-SG)
- 2017-2022 Research Agenda Committee Member, International Cartographic Association Commission on Geospatial Analysis and Modeling (ICA-GAM)
- 2019-2021 Board of Directors Member, Chinese Professionals in Geographic Information Sciences (CPGIS)

## **HONORS AND AWARDS**

- 2022 Global Young Scientist Award, World GIS Developers Conference (WGDC) 2022
- 2021 Best Paper Award, Symposium on Geospatial Approaches to Combating Covid-19
- 2021 ICA Scholarship Award, 30<sup>th</sup> International Cartographic Conference
- 2021 USNC Travel Award, 30<sup>th</sup> International Cartographic Conference
- 2019 ICA Scholarship Award, 29<sup>th</sup> International Cartographic Conference
- 2019 USNC Travel Award, 29<sup>th</sup> International Cartographic Conference
- 2018 Outstanding Student Dissertation Award, College of Coast & Environment, LSU
- 2018 Dr. Joseph Martinez Memorial Award, College of Coast & Environment, LSU
- 2017 USNC Travel Award, 28<sup>th</sup> International Cartographic Conference
- 2017 NCAR Travel Award, Community Earth System Modeling (CESM) Workshop 2017
- 2016 NSF Travel Award, 3<sup>rd</sup> International CyberGIS Conference
- 2016 LSU Graduate Student Travel Award, AAG 2016
- 2015 LSU Graduate Student Travel Award, AAG 2015
- 2014 CRIM App, Top 10 in ESRI Global Disaster Resilience App Challenge 2014
- 2012 Merit Student, University of Chinese Academy of Sciences, China
- 2011 Merit Student, University of Chinese Academy of Sciences, China
- 2007 Excellent Student Scholarship Award, Wuhan University, China

## **PROJECTS**

### • **Funded External Projects**

- 2023 **PI.** National Academies of Sciences, Engineering, and Medicine-Gulf Research Programs, “Climate-LEAD: Climate Effects on Localized Environmental Health Disparities in Overburdened Texas Communities along Gulf Coast”, \$1,499,990.
- 2023 **Co-PI/TAMU PI.** NSF-Human Networks and Data Science (HNDS), “Collaborative Research: HNDS-I: A Cyberinfrastructure for multiscale human dynamics and resilience (HDR) research”, PI: Nina Lam (LSU), \$1,096,902.
- 2023 **Faculty Advisor.** CaGIS Rising, “Characterizing and promoting cartography and GIS graduate programs through research theme discovery and online seminars”, \$10,000. Graduate Student PIs: Yuhao Kang (UW-Madison), Yanbing Chen (McGill), Bing Zhou (TAMU), and Zhining Gu (ASU). Faculty Advisor Co-PIs: Song Gao (UW-Madison), Lei Zou (TAMU), and Wenwen Li (ASU).
- 2022 **PI.** AAG Summer Workshop Series, “Spatial data science for social media analytics.” \$1750.
- 2021 **Co-PI.** National Science Foundation-EAGER, “EAGER: SAI-E: synchronizing decision-support via human- and social-centered digital twin infrastructures for coastal communities”, PI: Xinyue Ye (TAMU), \$298,982.
- 2020 **Co-PI.** Department of Veterans Affairs-Veterans Cemetery Grants Program, “Veteran’s legacy geographic information system: citizen science approach to extended memorialization digitally”, PI:

Stacey Lyle, \$249,832.

2019 **Co-PI.** National Science Foundation-Human, Disasters, and Built Environment (HDBE) Program, “Reducing the human impacts of flash floods: development of microdata and causal model to inform mitigation and preparedness”, PI: Nasir Gharaibeh (TAMU), Total Award: \$350,000.

- **Funded Internal Projects**

2023 **PI.** TAMU-TiCER Pilot Projects Program, “Geospatial modeling of climate change effects on localized environmental health resilience in southeast Texas communities,” \$50,000.

2022 **PI/TAMU PI.** PVAMU&TAMU-Panther RISE Grant Program, “Leveraging geospatial big data and artificial intelligence (AI) to enhance disaster resilience in vulnerable communities”, \$40,000.

2022 **Co-PI.** TAMU Innovation [X], “Big data fusion for the development of intelligent geospatial digital twin (IGDT)”, PI: Paul Koola, Texas A&M-Galveston. \$20,000.

2022 **Co-PI.** TAMU Seed Funds for Collaboration among Three Merging Colleges, “The impact of social isolation on human emotion and sleep disturbances - evidence from geospatial big data during Covid-19”, \$10,000.

2022 **Co-PI.** TAMU Seed Funds for Collaboration among Three Merging Colleges, “Statistical machine learning meets high-dimensional spatiotemporal challenges – a case study of Covid-19 modeling and prediction”, \$10,000.

2022 **Co-PI.** TAMIDS-Course Development Grant Program, “Spatial data science: advances and applications”, PI: Heng Cai, \$15,000.

2021 **PI.** TAMU-T3 Grant, “Community resilience to technological disasters: an analysis of risks, preparedness, and mitigation”, \$32,000.

2020 **Co-PI.** TAMU-X Grant, “Disaster city digital twin: integrating machine and human intelligence to augment flood resilience”, PI: Ali Mostafavi, \$1,000,000.

2020 **PI.** TAMIDS-Data Resource Development Program, “Tracking social and governmental responses to COVID-19 using geospatial big data”, \$27,000.

2020 **PI.** TAMU-Geosciences Dean’s Interdisciplinary Research Initiative Program, “Improving coastal resilience using high-resolution climate prediction and geographic artificial intelligence”, \$6000.

2020 **Co-I.** TAMU-Center for Health Systems & Design. “Aging in [physical+social] place: a coupled environment-activity network and social network analysis”, PI: Dongying Li, \$20,000.

2019 **PI.** TAMU-Innovation [X] Program, “Integrated disaster citizen science, education, and engagement: a customized resilience inference measurement (CRIM) framework”, \$20,000.

2016 **PI.** LSU-Dissertation Year Assistantship Grant, “Mining social media data for improved understanding of disaster resilience”, \$12,600.

2015 **PI.** LSU-Graduate Dean’s Summer Research Grant, “Integrating social media with tradition data to evaluate and enhance community resilience”, \$4,000.

## **PUBLICATIONS**

### ***Notes:***

- Asterisks (\*) denote student advisees.

- Total: 68

- o Journal Articles – published & accepted: 45, in review: 6

- o Conference Proceedings – published & accepted: 12

- o Book Chapters & Reports – published & accepted: 5

- **Journal Articles**

- In Review 51. \*Zhou, B., **Zou, L.**, \*Yang, M., \*Lin, B., \*Mandal, D., \*Abedin, J. Overlooked voices under lockdown: Mapping humanitarian needs in 2022 Shanghai COVID-19 outbreak. *Cartography and Geographic Information Science*.
- In Review 50. \*Lin, B., **Zou, L.**, Zhao, B., Huang, X., Cai, H., \*Yang, M., \*Zhou, B. Sensing the pulse of the pandemic: Geovisualizing the demographic disparities of public sentiment toward COVID-19 through social media. *Cartography and Geographic Information Science*.
- In Review 49. \*Zhou, B., **Zou, L.**, \*Yang, M., \*Lin, B., \*Mandal, D., \*Abedin, J., Cai, H., Ji, S., Klein, A., Gharaibeh, N. Real-time disaster response with social media and pretrained language models. *International Journal of Geographic Information Science*.
- In Review 48. \*Mandal, D., **Zou, L.**, \*Abedin, J., \*Zhou, B., \*Yang, M., \*Lin, B., Cai, H. Algorithmic uncertainties in geolocating social media data for disaster management. *Cartography and Geographic Information Science*.
- In Review 47. Qiang, Y., **Zou, L.**, Cai, H. Quantitative measurement of community resilience: current challenges, progresses, and future directions. *Big Earth Data*.
- In Review 46. Zhu, R., Newman, G., Li, D., Song, Y., **Zou, L.** Associations between vacant urban lands and public health outcomes in growing and shrinking cities. *Sustainable Cities and Society*.
- 2023 45. \*Zhou, B., **Zou, L.**, Hu, Y., Qiang, Y., Goldberg, D. TopoBERT: A plug and play toponym recognition module harnessing fine-tuned BERT. *International Journal of Digital Earth*. 16(1): 3045-3063.  
<https://doi.org/10.1080/17538947.2023.2239794>
- 2023 44. \*Li, M., Li, X., Wu, D., **Zou, L.**, Huang, X. Digitizing and inventorying traffic control infrastructures: a review of practices. *Transportation Research Interdisciplinary Perspectives*.  
<https://doi.org/10.1016/j.trip.2023.100879>
- 2023 43. Lam, N.S.N., Meyer, M., Reams, M., Park, S.J., Yang, S., Lee, K., **Zou, L.**, Mihunov, V., Cai, H., Wang, K. Improving social media use for disaster resilience: challenges and strategies. *International Journal of Digital Earth*. 16(1): 3023-3044  
<https://doi.org/10.1080/17538947.2023.2239768>
- 2023 42. Wilkho, R.S., Gharaibeh, N.G., Chang, S., **Zou, L.** Integrating NOAA storm events database and machine learning for developing a flash flood information retrieval system. *Environmental Modeling and Software*.  
<https://doi.org/10.1016/j.envsoft.2023.105734>
- 2023 41. Xu, J., Qiang, Y., **Zou, L.**, Cai, H. Power outage and environmental justice in Winter Storm Uri: an analytical workflow based on nighttime light remote sensing. *International Journal of Digital Earth*.  
<https://doi.org/10.1080/17538947.2023.2224087>
- 2023 40. Chang, S., Wilkho, R.S., Gharaibeh, N., Lyle, S., **Zou, L.** Predicting flash flood economic damage at the community scale: an empirical zero-inflated model with semicontinuous data. *Natural Hazards Review*. 24(4), p.04023030.  
<https://doi.org/10.1061/NHREFO.NHENG-1729>
- 2023 39. Cai, Z., Newman, G., Lee, J., Ye, X., Retchless, D., **Zou, L.**, Ham, Y. Simulating the spatial impacts of a coastal barrier in Galveston Island, Texas: A three-dimensional urban modeling approach. *Geomatics, Natural Hazards and Risk*. 14(1), p.2192332.  
<https://doi.org/10.1080/19475705.2023.2192332>
- 2023 38. Gao, S., Hu, Y., Li, W., **Zou, L.** Special issue on geospatial artificial intelligence. *Geoinformatica*.  
<https://link.springer.com/article/10.1007/s10707-023-00493-6>
- 2023 37. Chang, S., Wilkho, R.S., Gharaibeh, N., Sansom, G., Meyer, M., Olivera, F., **Zou, L.** A rare event logistic regression model for predicting the probability of fatality or injury occurrence in flash flood

- events. *Natural Hazards*.  
<https://link.springer.com/article/10.1007/s11069-023-05845-x>.
- 2023 36. Xu, Y., Liu, C., Wang, L., **Zou, L.** Exploring the spatial autocorrelation in soil moisture networks: analysis of the bias from upscaling the Texas soil observation network (TxSON). *Water*. 15(1):87.  
<https://doi.org/10.3390/w15010087>
- 2022 35. **Zou, L.**, \*Liao, D., Lam, N.S.N., Meyer, M., Gharaibeh, N., Cai, H., \*Zhou, B., Li, D. Social media for emergency rescue: an analysis of rescue requests on Twitter during Hurricane Harvey. *International Journal of Disaster Risk Reduction*.  
<https://doi.org/10.1016/j.ijdrr.2022.103513>
- 2022 34. \*Zhou, B., **Zou, L.**, Mostafavi, A., \*Lin, B., \*Yang, M., Gharaibeh, N., Cai, H., \*Abedin, J., \*Mandal, D. VictimFinder: harvesting rescue requests on social media during disasters with BERT. *Computers, Environment and Urban Systems*. 95: 101824.  
<https://doi.org/10.1016/j.compenvurbsys.2022.101824>
- 2022 33. \*Lin, B. **Zou, L.**, Duffield, N., Mostafavi, A., Cai, H., \*Zhou, B., Tao, J., \*Yang, M., \*Mandal, D., \*Abedin, J. Revealing the linguistic and geographic disparities in public awareness to covid-19 outbreak through social media. *International Journal of Digital Earth*. 15(1): 868-889.  
<https://doi.org/10.1080/17538947.2022.2070677>
- 2022 32. \*Yang, M., **Zou, L.**, Cai, H., Qiang, Y., \*Lin, B., \*Zhou, B., \*Abedin, J., \*Mandal, D. Spatial-temporal land loss modeling and simulation in a vulnerable coast: a case study in coastal Louisiana. *Remote Sensing*. 14(4): 896.  
<https://doi.org/10.3390/rs14040896>
- 2022 31. Cai, H., Lam, N.S.N., **Zou, L.** Incorporating neighborhood scale effects into land loss modeling using semivariograms. *Journal of Geographical Systems*.  
<https://link.springer.com/article/10.1007/s10109-021-00372-4>
- 2022 30. Ye, X., Han, Y., Newman, G.D., Retchless, D., **Zou, L.**, Ham, Y., Cai, Z. Developing human-centered urban digital twins for community infrastructure resilience: a research agenda. *Journal of Planning Literature*.  
<https://doi.org/10.1177/08854122221137861>
- 2022 29. Lam, N.S.N., Cai, H., **Zou, L.** Editorial for the Special Issue: “Human-Environment Interactions Research Using Remote Sensing”. *Remote Sensing*. 14(11): 2720.  
<https://doi.org/10.3390/rs14112720>
- 2022 28. Wang, Z., Lam, N.S.N., Sun, M., Huang, X., Shang, J., **Zou, L.**, Wu, Y., Mihunov, V. A machine learning approach for detecting rescue requests from social media. *ISPRS International Journal of Geo-Information*.  
<https://doi.org/10.3390/ijgi11110570>
- 2022 27. Ren, M., Park, S., Xu, Y., Huang, X., **Zou, L.**, Wang, M.S., Koh, S.-Y. Impact of covid-19 on domestic tourism demand - A case study of Jeju, Korea. *Tourism Management*. 92: 104533.  
<https://doi.org/10.1016/j.tourman.2022.104533>
- 2021 26. Zhang, Z., **Zou, L.**, Li, W., Usery, L., Albrecht, J., Armstrong, M. Cyberinfrastructure and intelligent spatial decision support systems. *Transactions in GIS*. 25(4): 1651-1653.  
<https://doi.org/10.1111/tgis.12835>
- 2021 25. Yang, B., Wang, Z., **Zou, L.**, Zou, L.L., Zhang, H. Exploring the eco-efficiency of cultivated land utilization and its influencing factors in the Yangtze River Economic Belt of China, 2001–2018. *Journal of Environmental Management*.  
<https://doi.org/10.1016/j.jenvman.2021.112939>
- 2021 24. Wang, K., Lam, N.S.N., **Zou, L.**, Mihunov, V. Twitter use in Hurricane Isaac and its implications

- to disaster resilience. *ISPRS International Journal of Geo-Information*. 10(3):116.  
<https://doi.org/10.3390/ijgi10030116>
- 2021 23. Huang, X., Zhu, D., Zhang, F., Liu, T., Li, X., **Zou, L.** Sensing population distribution from satellite imagery via deep learning: model selection, neighboring effect, and systematic biases. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. 14: 5137-5151.  
<https://doi.org/10.1109/JSTARS.2021.3076630>
- 2020 22. Mihunov, V., Lam, N.S.N., **Zou, L.**, Wang, Z., Wang, K. Use of Twitter in disaster rescue: lessons learned from Hurricane Harvey. *International Journal of Digital Earth*. 13(12):1454-1466.  
<https://doi.org/10.1080/17538947.2020.1729879>
- 2020 21. Correll, R., Lam, N.S.N., Mihunov, V., **Zou, L.**, Cai, H. Economics over risk: flooding is not the only driving factor of migration considerations on a vulnerable coast. *Annals of the American Association of Geographers*. 111(1):300-315.  
<https://doi.org/10.1080/24694452.2020.1766409>
- 2019 20. **Zou, L.**, Lam, N.S.N., Shams, S., Cai, H., Meyer, M.A., Yang, S., Lee, K., Park, S.J., Reams, M.A. Social and geographical disparities in Twitter use during Hurricane Harvey. *International Journal of Digital Earth*, 12(11):1300-1318.  
<https://doi.org/10.1080/17538947.2018.1545878>
- 2019 19. Bushra, N., Rohli, R.V., Lam, N.S.N., **Zou, L.**, Mostafiz, R.B., Mihunov, V. The relationship between the normalized difference vegetation index and drought indices in the south-central United States. *Natural Hazards*. 96:791-808.  
<https://doi.org/10.1007/s11069-019-03569-5>
- 2019 18. Kirby, R., Reams, M.A., Lam, N.S.N., **Zou, L.**, Dekker, G., Fundter D.Q.P. Assessing social vulnerability to flood hazards in the Dutch Province of Zeeland. *International Journal of Disaster Risk Science*. 10(2):233-243.  
<https://doi.org/10.1007/s13753-019-0222-0>
- 2019 17. Li, R., Leifer, D., Schoof, J., **Zou, L.**, Crowe, J. Social media for understanding social perception of energy: challenges and opportunities. *Energy Research & Social Science*, 56:101217.  
<https://doi.org/10.1016/j.erss.2019.101217>
- 2019 16. Mihunov, V., Lam, N.S.N., Rohli, R.V., **Zou, L.** Emerging disparities in community resilience to drought hazard in south-central United States. *International Journal of Disaster Risk Reduction*. 41:101302.  
<https://doi.org/10.1016/j.ijdrr.2019.101302>
- 2019 15. Zhang, B., Benediktsson, J.A., Chen, Z., Peng, D., Liu, B., **Zou, L.**, Li, J., Plaza, A. Remotely sensed Big Data: evolution in model development for information extraction. *Proceedings of the IEEE*, 107(12):2294-2301.  
<https://doi.org/10.1109/JPROC.2019.2948454>
- 2018 14. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y. Mining Twitter data for improved understanding of disaster resilience. *Annals of the American Association of Geographers*, 108(5):1422-1441.  
<https://doi.org/10.1080/24694452.2017.1421897>
- 2018 13. Cai, H., Lam, N.S.N., **Zou, L.**, Qiang Y. Modeling the dynamics of community resilience to coastal hazards using a Bayesian network. *Annals of the American Association of Geographers*, 108(5):1260-1279.  
<https://doi.org/10.1080/24694452.2017.1421896>
- 2018 12. Lam, N.S.N., Cheng, W., **Zou, L.**, Cai, H. Effects of landscape fragmentation on land loss. *Remote Sensing of Environment*, 209:253-262.  
<https://doi.org/10.1016/j.rse.2017.12.034>
- 2018 11. Mihunov, V., Lam, N.S.N., **Zou, L.**, Rohli, R.V., Bushra, N., Reams, M.A., Argote, J.E. Community

- resilience to drought hazard in south-central United States. *Annals of the American Association of Geographers*, 108(3):739-755.  
<https://doi.org/10.1080/24694452.2017.1372177>
- 2018 10. Cai, H. Lam, N.S.N., Qiang, Y., **Zou, L.** (*corresponding author*), Correll, R., Mihunov, V. A synthesis of disaster resilience measurement methods and indices. *International Journal of Disaster Risk Reduction*, 31:844-855.  
<https://doi.org/10.1016/j.ijdrr.2018.07.015>
- 2018 9. Lam, N.S.N., Qiang, Y., Li, K., Cai, H., **Zou, L.**, Mihunov, V. Extending resilience assessment to dynamic system modeling: perspectives on human dynamics and climate change research. *Journal of Coastal Research*, SI85:1401-1405.  
<https://doi.org/10.2112/SI85-281.1>
- 2018 8. Lam, N.S.N., Xu, Y.J., Liu, K.B., Dismukes, D.E., Reams, M.A., Pace, R.K., Qiang, Y., Narra S., Li, K., Bianchette, T., Cai, H., **Zou, L.**, Mihunov, V. Understanding the Mississippi River Delta as a coupled natural-human system: research methods, challenges, and prospects. *Water*, 10(8):1054.  
<https://doi.org/10.3390/w10081054>
- 2017 7. Qiang, Y., Lam, N.S.N., Cai, H., **Zou, L.** Changes in exposure to flood hazards in the United States. *Annals of the American Association of Geographers*, 107(6):1-19.  
<https://www.tandfonline.com/doi/abs/10.1080/24694452.2017.1320214>
- 2016 6. Cai, H., Lam, N.S.N., **Zou, L.**, Qiang, Y., Li, K. Assessing community resilience to coastal hazards in the Lower Mississippi River Basin. *Water*, 8(2):46.  
<https://doi.org/10.3390/w8020046>
- 2016 5. Rohli, R.V., Bushra, N., Lam, N.S.N., **Zou, L.**, Mihunov, V., Reams, M.A., Argote, J.E. Drought indices as drought predictors in the south-central USA. *Natural Hazards*, 83(3):1567-1582.  
<https://doi.org/10.1007/s11069-016-2376-z>
- 2016 4. Shen, Q., Li, J., Zhang, B., Wu, Y., **Zou, L.**, Wu T. Analyzing spectral characteristics of water involving in-situ multi-angle polarized reflectance and extraction of water-leaving radiance. *Spectroscopy and Spectral Analysis*, 36(10):3269-3273.  
[http://www.gpxygpfx.com/EN/10.3964/j.issn.1000-0593\(2016\)10-3269-05](http://www.gpxygpfx.com/EN/10.3964/j.issn.1000-0593(2016)10-3269-05)
- 2015 3. **Zou, L.**, Kent, J., Lam, N.S.N., Cai, H., Qiang, Y., Li, K. Evaluating land subsidence rates and their implications for land loss in the Lower Mississippi River Basin. *Water*, 8(1):10.  
<https://doi.org/10.3390/w8010010>
- 2015 2. Li, K., Lam, N.S.N., Qiang, Y., **Zou, L.**, Cai, H. A cyberinfrastructure for community resilience assessment and visualization. *Cartography and Geographic Information Science*, 42(sup1):34-39.  
<https://doi.org/10.1080/15230406.2015.1060113>
2014. 1. Zhang, F., Zhang, B., Li, J., Shen, Q., Wu, Y., Wang, G., **Zou, L.**, Wang, S. Validation of a synthetic chlorophyll index for remote estimates of chlorophyll-a in a turbid hypereutrophic lake. *International Journal of Remote Sensing*, 35(1):289-305.  
<https://doi.org/10.1080/01431161.2013.870679>
- **Conference Proceedings**
- 2023 12. **Zou, L.**, Li, W., \*Yang, M., \*Lin, B., \*Abedin, J. The impact of social isolation on sleep disturbances – evidence from geospatial big data during COVID-19. In *31<sup>st</sup> International Cartographic Conference (ICC 2023)*, 6:293.  
<https://doi.org/10.5194/ica-abs-6-293-2023>
- 2022 11. **Zou, L.**, \*Zhou, B., \*Lin, B., \*Mandal, D., Cai, H., \*Yang, M., \*Abedin, J. Empowering disaster response with social media and GeoAI: Opportunities and Challenges. *AutoCarto 2022*.  
[https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session9\\_Zou\\_0587.pdf](https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session9_Zou_0587.pdf)

- 2022 10. \*Zhou, B., **Zou, L.**, \*Yang, M., \*Lin, B., \*Mandal, D. Overlooked Voices under Strict Lockdown: Mapping Humanitarian Needs in 2022 Shanghai COVID-19 Outbreak. *AutoCarto 2022*.  
[https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session4\\_Zhou\\_1431.pdf](https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session4_Zhou_1431.pdf)
- 2022 9. \*Lin, B., **Zou, L.**, \*Yang, M., \*Zhou, B. Multi-granular geovisualizations of public perceptions of COVID-19 through the lens of Twitter. *AutoCarto 2022*.  
[https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session2\\_Lin\\_3376.pdf](https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session2_Lin_3376.pdf)
- 2022 8. \*Mandal, D., **Zou, L.**, Cai, H., \*Lin, B., \*Zhou, B., \*Abedin, J., \*Yang, M. Uncertainties in geolocating social media data for disaster management. *AutoCarto 2022*.  
[https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session9\\_Mandal\\_9180.pdf](https://cartogis.org/docs/autocarto/2022/docs/abstracts/Session9_Mandal_9180.pdf)
- 2021 7. **Zou, L.** Mapping the disparities of community resilience to natural hazards in the United States. In *30<sup>th</sup> International Cartographic Conference (ICC 2021)*, 3:330.  
<https://doi.org/10.5194/ica-abs-3-330-2021>
- 2019 6. **Zou, L.** Visualizing and mining social media data for smart emergency management. In *29<sup>th</sup> International Cartographic Conference (ICC 2019)*, 1:442.  
<https://doi.org/10.5194/ica-abs-1-442-2019>
- 2019 5. Lam, N.S.N. Cai, H., **Zou, L.**, Liu, K.B. Scale effects on land loss modeling in the Mississippi River Delta. In *29<sup>th</sup> International Cartographic Conference (ICC 2019)*, 1:205.  
<https://doi.org/10.5194/ica-abs-1-205-2019>
- 2019 4. \*Chen, X., **Zou, L.**, Zhao, B. Detecting climate change deniers on Twitter using a deep neural network. In *ACM 11<sup>th</sup> International Conference on Machine Learning and Computing*. 204-210.  
<https://doi.org/10.1145/3318299.3318382>
- 2014 3. **Zou, L.**, Zhang, B., Li, J., Shen, Q., Zhang, F., Wang, G.L. A study on retrieval algorithm of black water aggregation in Taihu Lake based on HJ-1 satellite images. In *IOP Conference Series: Earth and Environmental Science*, 17(1):012100.  
<https://doi.org/10.1088/1755-1315/17/1/012100>
- 2012 2. **Zou, L.**, Zhang, B., Li, J., Song, Y., Shen, Q., Li, L. A comparative analysis of the ‘transmittance’ method between using integrating sphere and filter holders for measuring light absorption by aquatic particles. In *2012 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2567-2570.  
<https://doi.org/10.1109/IGARSS.2012.6350955>
- 2012 1. Li, J., Zhang, B., Shen, Q., **Zou, L.**, Li, L. Monitoring water quality of Lake Taihu from HJ-CCD data using empirical models. In *2012 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 812-815.  
<https://doi.org/10.1109/IGARSS.2012.6351438>
- **Book Chapters & Reports**
- 2023 5. **Zou, L.** Geospatial Exploration and Resolution (GEAR) Lab at Texas A&M University. *2023 US National Report for the International Cartographic Association* (Editor: Aileen Buckley).  
<https://cartogis.org/docs/usnc/USNationalReport2023.pdf>
- 2023 4. **Zou, L.**, Mostafavi, A., \*Zhou, B., \*Lin, B., \*Yang, M., \*Abedin, J., \*Mandal, D., Cai, H. GeoAI for Disaster Response. *Handbook of GeoAI* (Editors: Song Gao, Yingjie Hu, and Wenwen Li)
- 2023 3. Huang, X., Li, X., Yang, D., **Zou, L.** Crowdsourced geospatial data in human and Earth observations: Opportunities and Challenges. *Geoinformatics for Geosciences: Advanced Geospatial Analysis Using Rs, GIS and Soft Computing* (Editors: Nikolaos Stathopoulos, Andreas Tsatsaris, Kleomenis Kalogeropoulos)  
<https://doi.org/10.1016/B978-0-323-98983-1.00007-7>
- 2019 2. Lam, N.S.N, Xu, Y.J., Pace, R.K., Liu, K.B., Qiang, Y., Narra, S., Blanchette, T.A., Cai, H., **Zou,**



L., Li, K., Joshi, S., Mihunov, V. Collaboration across boundaries: reflections on studying the sustainability of the Mississippi River Delta as a coupled natural-human system in *Across Boundaries for Interdisciplinary Environmental Systems Science: Experiences around the World* (Editors: Stephen Prez and Palgrave Macmillan).

[https://doi.org/10.1007/978-3-030-13827-1\\_11](https://doi.org/10.1007/978-3-030-13827-1_11)

- 2019 1. **Zou, L.**, Lam, N.S.N., Cai, H. A framework for analyzing and visualizing Twitter use patterns during natural hazards. *2019 US National Report for the International Cartographic Association* (Editor: Aileen Buckley).

<https://cartogis.org/usnc-ica/us-national-report/>

## **TEACHING EXPERIENCE**

### • Instructor

#### *Note:*

- TAMU upgraded the course evaluation system in 2021. Overall scores are no longer available.

Year	Term	Course	Evaluation (0-5)
2023	Fall	GEOG391659 GeoDatabases	-
		GEOG659 GeoDatabases (Online)	-
	Summer	GEOG659 GeoDatabases (Online)	-
	Spring	GEOG695 Frontiers in GIScience GEOG651 Remote Sensing for Geographical Analysis (Online)	- -
2022	Summer	GEOG659 GeoDatabases (Online)	-
	Spring	GEOG491 GIS Practicum GEOG651 Remote Sensing for Geographical Analysis (Online)	- -
2021	Fall	GEOG659 GeoDatabases	-
	Summer	GEOG659 GeoDatabases (Online)	-
	Spring	GEOG695 Frontiers in GIScience GEOG651 Remote Sensing for Geographical Analysis (Online)	- -
2020	Fall	GEOG391/659 Geodatabases	4.42
	Summer	GEOG659 GeoDatabases (Online)	4.55
	Spring	GEOG476 GIS Practicum GEOG651 Remote Sensing for Geographical Analysis (Online)	4.86 4.25
2019	Fall	GEOG651 Remote Sensing for Geographical Analysis (Online)	4.41
	Summer	GEOG659 GeoDatabases (Online)	4.44
	Spring	GEOG676 GIS Programming (Online)	4.65
		GEOG659 GeoDatabases (Online) GEOG651 Remote Sensing for Geographical Analysis (Online)	4.08 3.98
2018	Fall	GEOG392/676 GIS Programming	4.62

### • Guest Lecturer

Year	Term	Lecture Title	School/Course
2023	Spring	Understanding disaster resilience using social sensing methods and big data approaches	TAMU Public Health
2021	Summer Spring	Seeing what's happening through the lens of social media	TAMU-Chinese K12
		Leveraging advances in GIScience to enhance resilience	SUNY-Albany

2020	Fall	Workshop: social media data mining	Texas GIS Day
2019	Fall	Workshop: social media data mining GIS and social media in disaster management Python for location-based social media data mining	TAMU, GIS Day UTHealth, PH2126 TAMU, GEOG392
2018	Fall Spring	Workshop: social media data mining Location-based social media data mining Location-based social media data mining methods	TAMU, GIS Day UNT, Dept. of Geog. LSU, ENVS7050
2017	Fall Spring	Geospatial big data in environmental management Geospatial big data analytics	LSU, ENVS4149 LSU, ENVS7050

### • Teaching Assistant

Year	Term	Course
2017	Fall	LSU-ENVS4149: Design of Environmental Management Systems-A GIS Approach
2016	Fall	LSU-ENVS4149: Design of Environmental Management Systems-A GIS Approach

## PRESENTATIONS

### *Note:*

- Asterisks (\*) denote student advisees
- Total: 105
  - o Invited Talks: 22
  - o Invited Panelists: 3
  - o Selected Conference Presentations: 80

### • Invited Talks

- 2023      22. **Keynote:** Achieving a smart and resilient future with spatial data science. Spatial Data Science for Disaster Resilience Session, the Fourth Spatial Data Science Symposium (SDSS 2023). Virtual.
- 2023      21. From research to classroom: empowering disaster resilience research and practice with geospatial big data. Emergency Management Faculty Development Workshop. Prairie View A&M University, Prairie View, Texas.
- 2022      20. Empowering disaster resilience with geospatial big data. Symposium on Spatial Analytics and Geostatistics. China University of Mining and Technology (CUMT). Virtual.
- 2022      19. Improving disaster resilience with social media and GeoAI. North American Alliance of Hazards and Disaster Research Institutes (NAAHDRI) Research Incubator. Virtual.
- 2022      18. Empowering disaster and pandemic resilience with geospatial data science. Urban Big Data Session. The 5th International Conference on Big Earth Data (BED 2022). Virtual.
- 2022      17. Sensing the pulse of the pandemic: revealing social-behavioral dynamics during COVID-19 through geospatial big data. Session on Youth Innovation: Sharing for the future, 2022 International Forum on Big Data for Sustainable Development Goals [[link](#)]. Virtual.
- 2022      16. Empowering resilient cities with geospatial data science. Session on SDG11 - Sustainable Cities and Communities: Green and resilience city, 2022 International Forum on Big Data for Sustainable Development Goals [[link](#)]. Virtual.
- 2022      15. Empowering resilient cities with GIScience. World GIS Developers Conference (WGDC) 2022 [[link](#)]. Virtual.
- 2022      14. Active hope in the changing world: geospatial approaches to enhancing disaster and pandemic resilience. Department of Land Surveying and Geo-Informatics (LSGI), the Hong Kong

- Polytechnic University [\[link\]](#). Virtual.
- 2021 13. Preparing for a faculty interview. Academy for Future Faculty, Center for Teaching Excellence, TAMU.
- 2021 12. Social media for disaster management: methods and applications. Data Lake Meeting, TAMU. Virtual.
- 2020 11. Active hope in the changing environment: leveraging advances in GIScience to enhance resilience and sustainability. Department of Geography, University of Washington, Seattle. Virtual.
- 2020 10. Understanding and building disaster resilience capacity through social media. Seminar at the Department of Geography, University of Wisconsin-Milwaukee. Virtual.
- 2020 9. Mining spatial-temporal big social sensing and remote sensing data for disaster resilience and sustainability. GeoInsider Online Symposium.
- 2019 8. Geospatial big data mining for disaster resilience and sustainability. Geoscience Café at State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University.
- 2019 7. Emerging geospatial big data and disaster resilience (Co-Presented with Michelle Meyer). Seminar at the Institute for Sustainable Communities (IFSC), TAMU.
- 2018 6. Geospatial big data mining for resilient human-environment systems. Department of Geography and Urban Studies, Temple University.
- 2018 5. Geospatial big data mining for disaster resilience and sustainability. Department of Geography, TAMU.
- 2018 4. Geospatial big data mining for disaster resilience and sustainability. Department of Geography and the Environment, University of North Texas.
- 2018 3. Location-based social media analytics. GIScience Club, LSU.
- 2017 2. Achieving a sustainable society in the big data era. Seminar at the Geography Colloquium, Department of Geography, Kansas State University.
- 2017 1. Big data for emergency management during natural hazards. GIScience Club, LSU.
- **Invited Panelist**

2022 3. Preparing for an academic career in GIScience. *GISalon Online Symposium*, Virtual.

2021 2. Geoscience research advances and Ph.D./postdoc applications. *GeoInsider Online Symposium*, Virtual.

2019 1. Leveraging crowdsourcing, citizen science, and social media to produce volunteer geographic information (VGI) for hazard science, disaster research, and emergency management. *AAG 2019 Annual Meeting*, Washington D.C.
  - **Selected Conference Presentations**

2023 80. \*Lin, B., Dai, Y., Ning, N., **Zou, L.** Statistical machine learning meets high-dimensional spatiotemporal challenges - a case study of COVID-19 modeling. *International Symposium on Location-Based Big Data and GeoAI 2023 (LocBigDataAI 2023)*, Cape Town, South Africa.

2023 79. \*Lin, B., **Zou, L.** Mapping the temporally evolved geographic disparities of public perceptions of COVID-19 through social media. *31<sup>st</sup> International Cartographic Conference (ICC 2023)*, Cape Town, South Africa.

2023 78. **Zou, L.**, Li, W., \*Yang, M., \*Lin, B., \*Abedin, J. The impact of social isolation on sleep disturbances – evidence from geospatial big data during COVID-19. *31<sup>st</sup> International Cartographic Conference (ICC 2023)* Cape Town, South Africa.

- 2023 77. **Zou, L.** Social media data mining with GeoAI: opportunities and challenges. *AAG 2023 Annual Meeting*, Denver, CO.
- 2023 76. Zhou, Z., Hu, Y., **Zou, L.**, Cai, H., \*Zhou, B. Understanding community resilience in the 2021 Texas winter storm through home-dwelling time records derived from mobile phone location data. *AAG 2023 Annual Meeting*, Denver, CO.
- 2023 75. \*Mandal, D., **Zou, L.**, \*Abedin, J., \*Yang, M., \*Zhou, B. Evolving geographical disparities of community disaster resilience in the United States. *AAG 2023 Annual Meeting*, Denver, CO.
- 2023 74. \*Abedin, J., **Zou, L.**, Cai, H., \*Yang, M., Akter, H., \*Mandal, D., \*Lin, B., \*Zhou, B. Deciphering spatial-temporal dynamics of flood exposure in the United States. *AAG 2023 Annual Meeting*, Denver, CO. **Jeanne X. Kasperson Award.**
- 2023 73. \*Lin, B., **Zou, L.**, Cai, H., \*Yang, M., \*Zhou, B. Sensing the pulse of the pandemic: demographic disparities of public sentiment toward COVID-19 through social media. *AAG 2023 Annual Meeting*, Denver, CO. **2<sup>nd</sup> Place in the GISS Student Paper Competition.**
- 2023 72. \*Yang, M., **Zou, L.**, \*Abedin, J., \*Lin, B., \*Zhou, B. Simulating coastal land losses and gains using neighborhood effect optimized convolutional neural networks (NeoCNN) and cellular automata. *AAG 2023 Annual Meeting*, Denver, CO.
- 2023 71. \*Zhou, B., **Zou, L.**, \*Lin, B., \*Yang, M., \*Mandal, D., \*Abedin, J., Cai, H. Social media reactions reveals spatial and temporal discrepancies during hurricanes. *AAG 2023 Annual Meeting*, Denver, CO.
- 2023 70. Ramakrishnan, T., **Zou, L.** Investigating the role of digital divide and social media use to improve disaster resilience in vulnerable communities. *20th Annual Global Conference on Information Systems for Crisis Response and Management (ISCRAM 2023)*, Omaha, NE.
- 2023 69. Ramakrishnan, T., **Zou, L.** Examining the use of social media and the influence of digital divide to improve disaster resilience in vulnerable communities. *Southwest Decision Sciences Institute 52<sup>nd</sup> Annual Conference (SWDSI 2023)*, Houston, TX.
- 2022 68. **Zou, L.**, \*Zhou, B., Cai, H., \*Lin, B., \*Mandal, D., \*Abedin, J., \*Yang, M. Empowering smart disaster response with social media and GeoAI. *AGU Fall Meeting 2022*, Chicago, IL. (Poster)
- 2022 67. \*Abedin, J., **Zou, L.**, Cai, H., \*Yang, M., Akter, H., \*Mandal, D., \*Lin, B., \*Zhou, B. Spatial-Temporal Changes of Flood Exposure in the United States. *AGU Fall Meeting 2022*, Chicago, IL.
- 2022 66. \*Yang, M., **Zou, L.**, \*Lin, B., \*Zhou, B., \*Abedin, J., \*Mandal, D. Simulating coastal land losses and gains using neighborhood effect optimized convolutional neural networks (NeoCNN) and cellular automata. *AGU Fall Meeting 2022*, Chicago, IL. (Poster)
- 2022 65. \*Mandal, D., **Zou, L.**, \*Lin, B., \*Yang, M., \*Abedin, J., \*Zhou, B. Evolving geographical disparities of community disaster resilience in the United States. *AGU Fall Meeting 2022*, Chicago, IL. (Poster)
- 2022 64. Cai, H., \*Lin, B., **Zou, L.**, Li, D. Revealing disaster resilience inequalities during 2021 winter storm Uri. *AGU Fall Meeting 2022*, Chicago, IL. (Poster)
- 2022 63. Qiang, Y., Xu, J., Gao, S., Cai, H., **Zou, L.** Data-driven approaches to monitor recovery and resilience of critical infrastructures. *AGU Fall Meeting 2022*, Chicago, IL.
- 2022 62. \*Lin, B., **Zou, L.**, Cai, H., \*Yang, M., \*Zhou, B. Sensing the pulse of the pandemic through the lens of Twitter. *2022 Texas GIS Day*, College Station, TX. **1<sup>st</sup> place in Student Paper Competition.**
- 2022 61. \*Lin, B., **Zou, L.**, Cai, H., \*Yang, M., \*Zhou, B. Sensing the pulse of the pandemic: multi-granular geovisualizations of public perceptions of COVID-19 through the lens of Twitter. *Conference on Advances in Data Science Theory, Methods, and Computation*, College Station, TX. (Poster)
- 2022 60. **Zou, L.**, Integrating social media data with building footprints for rapid disaster damage

- assessment. *The 29<sup>th</sup> International Conference on Geoinformatics*, Beijing, China.
- 2022 59. **Zou, L.**, \*Zhou, B., \*Lin, B., \*Mandal, D., Cai, H., \*Yang, M., \*Abedin, J. Empowering disaster response with social media and GeoAI: Opportunities and Challenges. *AutoCarto 2022*, Redlands, CA.
- 2022 58. \*Zhou, B., **Zou, L.**, \*Yang, M., \*Lin, B., \*Mandal, D. Overlooked Voices under Strict Lockdown: Mapping Humanitarian Needs in 2022 Shanghai COVID-19 Outbreak. *AutoCarto 2022*, Redlands, CA. **Student Travel Award.**
- 2022 57. \*Lin, B., **Zou, L.**, \*Yang, M., \*Zhou, B. Multi-granular geovisualizations of public perceptions of COVID-19 through the lens of Twitter. *AutoCarto 2022*, Redlands, CA. **Student Travel Award.**
- 2022 56. \*Mandal, D., **Zou, L.**, Cai, H., \*Lin, B., \*Zhou, B., \*Abedin, J., \*Yang, M. Uncertainties in geolocating social media data for disaster management. *AutoCarto 2022*, Redlands, CA. **Student Travel Award.**
- 2022 55. \*Lin, B., **Zou, L.**, \*Zhou, B., \*Yang, M. Evolving effects of non-pharmaceutical interventions (NPIs) on Covid-19 health impacts in the United States. *The 29<sup>th</sup> International Conference on Geoinformatics*, Beijing, China. Virtual.
- 2022 54. \*Brown, T.J., Thompson, C., **Zou, L.**, \*Abedin, J., Atoba, K. Marginalized natural hazard risk perception in Sarasota County, Florida. *2022 Natural Hazard Center Researchers Meeting*, Virtual.
- 2022 53. **Zou, L.**, \*Zhou, B., Gharaibeh, N., Meyer, M., Cai, H., \*Lin, B., \*Mandal, D. VictimFinder: harvesting disaster rescue requests from social media with AI. *2<sup>nd</sup> Disaster PRIMR Conference*, Danton, TX.
- 2022 52. **Zou, L.**, Lam, N.S.N., Cai, H., \*Zhou, B. Social media for emergency rescue: analysis of rescue requests on Twitter during Hurricane Harvey. *AAG 2022 Annual Meeting*, Virtual.
- 2022 51. \*Abedin, J., **Zou, L.**, Cai, H., \*Mandal, D., \*Lin, B., \*Yang, M., \*Zhou, B., \*Brown, T. Spatial-temporal changes of flood risk in the United States. *AAG 2022 Annual Meeting*, Virtual.
- 2022 50. \*Yang, M., **Zou, L.**, \*Lin, B., \*Zhou, B., \*Abedin, J., \*Mandal, D. Simulating land loss and land gain by integrating neighborhood effect and deep learning with cellular automata. *AAG 2022 Annual Meeting*, Virtual.
- 2022 49. \*Lin, B., **Zou, L.**, Cai, H., \*Zhou, B., \*Yang, M., \*Mandal, D., \*Abedin, J. Revealing the linguistic and geographic disparities of public awareness to Covid-19 outbreak through social media. *AAG 2022 Annual Meeting*, Virtual.
- 2022 48. Cai, H., \*Lin, B., **Zou, L.**, \*Mandal, D., \*Zhou, B. Community awareness and sentiment inequalities during Winter Storm Uri. *AAG 2022 Annual Meeting*, Virtual.
- 2022 47. \*Zhou, B., **Zou, L.**, \*Lin, B., \*Yang, M. Analysis of linguistic and geographic disparities across hurricane related rescue request social media data. *AAG 2022 Annual Meeting*, Virtual.
- 2022 46. \*Mandal, D., **Zou, L.**, Cai, H., \*Lin, B., \*Zhou, B., \*Yang, M., \*Abedin, J. A modular machine learning platform for resilience inference measurement and enhancement (PRIME). *AAG 2022 Annual Meeting*, Virtual.
- 2022 45. \*Li, M., **Zou, L.** A community-based assessment of flash flood vulnerability in Texas and the influence from different social variables. *AAG 2022 Annual Meeting*, Virtual.
- 2021 44. **Zou, L.** \*Lin, B., Duffield, N., Mostafavi, A. and Tao, J. Revealing social awareness and behavioral changes during Covid-19 through geospatial big data. *2021 TAMIDS Research Conference*, College Station, TX.
- 2021 43. **Zou, L.** Mapping the disparities of community resilience to natural hazards in the United States. *30<sup>th</sup> International Cartographic Conference*, Virtual/Florence, Italy.

- 2021 42. Cai, H., Lam, N.S.N., **Zou, L.** Improving land loss modeling through incorporating neighborhood scale effects. *30<sup>th</sup> International Cartographic Conference*, Virtual/Florence, Italy.
- 2021 41. \*Mandal, D., \*Lin, B., \*Zhou, B., \*Yang, M., **Zou, L.** Visualizing and evaluating the geocoding uncertainty in social sensing for disaster management. *30<sup>th</sup> International Cartographic Conference*, Virtual/Florence, Italy.
- 2021 40. **Zou, L.**, \*Lin, B., \*Yang, M., \*Zhou, B., Cai, H. Revealing the geographical disparities of global Covid-19 awareness and its health effects through social media. *International Symposium on Geospatial Approaches to Combating Covid-19*, Virtual/Florence, Italy. **Best Paper Award.**
- 2021 39. **Zou, L.**, \*Zhou, B., \*Lin, B., Lam, N.S.N., Mihunov, V. Analyzing rescue requests on social media to enhance disaster response and resilience. *The 28th International Conference on Geoinformatics (CPGIS 2021)*, Virtual.
- 2021 38. **Zou, L.**, Lam, N.S.N., Qiang, Y., Cai, H., Mihunov, V. Geographical disparities of community disaster resilience in the United States. *AAG 2021 Annual Meeting*, Virtual.
- 2021 37. \*Zhou, B., **Zou, L.**, \*Lin, B., \*Yang, M. VictimFinder: Harvesting rescue requests in disaster response from social media with BERT. *AAG 2021 Annual Meeting*, Virtual. **1<sup>st</sup> Place in the GISS Student Paper Competition.**
- 2021 36. \*Lin, B., Zou, L., \*Yang, M., \*Zhou, B. Revealing the long-term global awareness of Covid-19 and its effects on public health through the lens of social media. *AAG 2021 Annual Meeting*, Virtual. **SAM Student Travel Award.**
- 2021 35. \*Yang, M., **Zou, L.**, \*Lin, B., \*Zhou, B. Modeling the spatial dynamics of land loss in the Louisiana Coastal Zone. *AAG 2021 Annual Meeting*, Virtual. **SAM Student Travel Award.**
- 2021 34. \*Li, M., **Zou, L.** A community-based assessment of flash-flood vulnerability and driving forces in Texas. *AAG 2021 Annual Meeting*, Virtual.
- 2021 33. Mihunov, V., **Zou, L.**, Lam, N.S.N., Wang, Z., Wang, K., Govender, D. Analyzing the use of Twitter in hurricanes and floods: common approaches, lessons learned, and emerging trends. *AAG 2021 Annual Meeting*, Virtual.
- 2021 32. Cai, H., Lam, N.S.N., **Zou, L.** Incorporating neighborhood effect into land loss modeling in the Lower Mississippi River Delta. *AAG 2021 Annual Meeting*, Virtual.
- 2021 31. Wang, K., Lam, N.S.N., **Zou, L.**, Mihunov, V. Twitter use in Hurricane Isaac and its implications to disaster resilience. *AAG 2021 Annual Meeting*, Virtual.
- 2021 30. Gharaibeh, N., Chang, S., Wilkho, R., **Zou, L.** Characteristics of Texas communities frequently impacted by flash flooding. *1<sup>st</sup> Disaster PRIMR Conference*, Virtual.
- 2020 29. **Zou, L.**, Lam, N.S.N., Mihunov, V., Cai, H. The changing roles of social media in disaster management. *UCGIS Symposium 2020*, Virtual. Recording: <https://youtu.be/7x8nHg8YW0U> (0:51:00~1:22:00).
2019. 28. **Zou, L.**, Lam, N.S.N., Meyer, M.A., Li, D., Cai, H. Mining volunteered geographical information (VGI) for disaster resilience and emergency management. *Symposium on Rising Resilience: Research and Practice on Harvey and Hazards of the Future*, College Station, TX.
- 2019 27. **Zou, L.** Visualizing and mining social media data for smart emergency management. *29<sup>th</sup> International Cartographic Conference*, Tokyo, Japan.
- 2019 26. Lam, N.S.N., Cai, H., **Zou, L.**, Liu, K.B. 2019. Scale effects on land loss modeling in the Mississippi River Delta. *29<sup>th</sup> International Cartographic Conference*, Tokyo, Japan.
- 2019 25. **Zou, L.**, Lam, N.S.N., Cai, H. 2019. Towards disaster resilient communities: from resilience modeling to smart disaster management. *Location-Based Big Data Workshop*, Tokyo, Japan.

- 2019 24. **Zou, L.** Towards disaster resilient communities: from resilience modeling to smart disaster management. *Texas A&M University Hazard Reduction and Recovery Center (HRRC) Fellows Forum 2019*, College Station, TX.
- 2019 23. **Zou, L.**, Lam, N.S.N., Cai, H. Sensing and improving disaster resilience through social media data mining. *AAG 2019 Annual Meeting*, Washington D.C.
- 2019 22. **Zou, L.** Geospatial big data mining for community emergency management. *Texas A&M Workshop on Operational Data Science*, College Station, TX.
- 2018 21. **Zou, L.**, Lam, N.S.N., Cai, H., Meyer, M.A., Yang, S., Lee, K., Park, S.J., Reams, M.A. Sensing, building, and improving disaster resilience through social media data mining. *AGU 2018 Fall Meeting*, Washington D.C.
- 2018 20. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y. The changing roles of social media in disaster resilience. *AAG 2018 Annual Meeting*, New Orleans, LA.
- 2018 19. Correll, R., Lam, N.S.N., **Zou, L.**, Mihunov, V., Cai, H. Move or stay? A dilemma for coastal Louisiana residents. *AAG 2018 Annual Meeting*, New Orleans, LA.
- 2017 18. **Zou, L.**, Lam, N.S.N., Cai, H. Leveraging social media data to understand disaster resilience: a case study of Hurricane Isaac. *AGU 2017 Fall Meeting*, New Orleans, LA. (Poster).
- 2017 17. Cai, H., Lam, N.S.N., **Zou, L.** A coupled natural-human system modeling of the land loss probability in the Lower Mississippi River Basin. *AGU 2017 Fall Meeting*, New Orleans, LA.
- 2017 16. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y. Visualizing social media data for improved understanding of disaster resilience. *28<sup>th</sup> International Cartographic Conference*, Washington D.C.
- 2017 15. Cai, H., Lam, N.S.N., **Zou, L.**, Qiang, Y. Modeling the dynamics of community resilience to coastal hazards using a Bayesian Network. *28<sup>th</sup> International Cartographic Conference*, Washington D.C.
- 2017 14. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y. Mining Twitter data for improved understanding of disaster resilience. *2017 International Symposium on Location-based Social Media and Tracking Data (LSMTD)*, Washington D.C.
- 2017 13. Liu, K.B., Bianchette, T.A., **Zou, L.**, Qiang, Y., Lam, N.S.N. Contribution of recent hurricanes to wetland sedimentation in coastal Louisiana. *EGU 2017 Annual Meeting*, Vienna, Austria.
- 2017 12. **Zou, L.**, Lam, N.S.N. Utilizing social media data to understand and enhance disaster resilience. *2017 LSU College of the Coast and Environment Annual Graduate Student Symposium*, Baton Rouge, LA. **Finalist.**
- 2017 11. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y. Mining Twitter data for improved understanding of disaster resilience during Hurricane Sandy. *AAG 2017 Annual Meeting*, Boston, MA.
- 2016 10. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y. Social sensing coastal resilience to disasters through Twitter. *Louisiana Sea Grant's Coastal Connections Competition*, Baton Rouge, LA. **Finalist.**
- 2016 9. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y. Social sensing of disaster resilience through Twitter: a case study of Hurricane Sandy (Poster). *3<sup>rd</sup> International Conference on CyberGIS and Geospatial Data Science*, Urbana, IL. **NSF Student Travel Award.**
- 2016 8. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y., Li, K. Impacts of hurricane Katrina on population dynamics in the Lower Mississippi River Basin. *AAG 2016 Annual Meeting*, San Francisco, CA.
- 2016 7. Cai, H., Lam, N.S.N., **Zou, L.**, Qiang, Y., Li, K. Assessing community resilience to coastal hazards in the Lower Mississippi River Basin. *AAG 2016 Annual Meeting*, San Francisco, CA.
- 2016 6. Qiang, Y., Lam, N.S.N., **Zou, L.**, Cai, H., Li, K. Modeling long-term human dynamics in response to natural hazard using remote sensing data. *AAG 2016 Annual Meeting*, San Francisco, CA.

- 2016 5. Mihunov, V., **Zou, L.**, Lam, N.S.N. Community resilience to drought hazard in South-Central U.S. *AAG 2016 Annual Meeting*, San Francisco, CA.
- 2015 4. **Zou, L.**, Lam, N.S.N., Cai, H., Qiang, Y., Li, K. A genetic algorithm calibrated cellular automata modeling of urban growth in the East Baton Rouge Parish, Louisiana. *AAG 2015 Annual Meeting*, Chicago, IL.
- 2014 3. **Zou, L.**, Lam, N.S.N., Cai, H. Assessment of community resilience to drought in Texas and Louisiana (Poster). *30<sup>th</sup> Louisiana Remote Sensing & GIS Workshop*, New Orleans, LA.
- 2014 2. Cai, H., Lam, N.S.N., **Zou, L.** Predicting the resiliency of the east coast counties after Hurricane Sandy. *AAG 2014 Annual Meeting*, Tampa, FL.
- 2012 1. **Zou, L.**, Zhang, B., Li, J.S., Shen, Q. A study on retrieval algorithm of Black Water Aggregation in Taihu Lake by HJ-1 satellite data. *12<sup>th</sup> National Symposium of Case II Watercolor Remote Sensing*, Guangzhou, China.

## **STUDENT MENTORSHIP**

### • **Supervised Students**

#### *Committee Chair for:*

2021-pres.	Joynal Abedin	TAMU	Ph.D., Geography
2021-pres.	Debayan Mandal	TAMU	Ph.D., Geography
2021-pres.	Binbin Lin	TAMU	Ph.D., Geography
2021-pres.	Mingzheng Yang	TAMU	Ph.D., Geography
2021-pres.	Bing Zhou	TAMU	Ph.D., Geography
2021-pres.	Tarik Jamil Brown (co-chair)	TAMU	M.S., Geography
2020-2022	Moxuan Li (Graduated)	TAMU	M.S., Geography
	o <i>Thesis:</i> Geographical Disparities of Flash Flood Vulnerability in Texas		
	o <i>Immediate Job Placement:</i> GIS Analyst, <a href="#">Tango Analytics</a>		

#### *Committee Member for:*

2023-pres.	Dingding Ren	TAMU	Ph.D., Urban Planning
2023-pres.	Zhenhang Cai	TAMU	Ph.D., Urban Planning
2022-pres.	Jiaxin Du	TAMU	Ph.D., Urban Planning
2022-pres.	Jaeyoon Kim	TAMU	Ph.D., Construction Science
2021-pres.	Zhihan Tao	TAMU	Ph.D., Urban Planning
2021-pres.	Rohan Singh Wilkho	TAMU	Ph.D., Civil & Environmental Engineering
2021-pres.	Bhushan Pawar	TAMU	Ph.D., Chemical Engineering
2020-pres.	Rakibul Ahasan	TAMU	Ph.D., Geography
2020-pres.	Weiyang Lin	TAMU	Ph.D., Geography
2019-pres.	Wencong Cui	TAMU	Ph.D., Geography
2022-pres.	Aya Maghaydah	TAMU	M.S., Civil Engineering
2021-2023	Rui Zhu (Graduated)	TAMU	Ph.D., Urban Planning
2021-2022	Shi Chang (Graduated)	TAMU	Ph.D., Civil & Environmental Engineering
2019-2023	Jinwen Xu (Graduated)	USF	Ph.D., Geography
2021-2022	Linqing Yang (Graduated)	TAMU	Ph.D., Ecosystem Science & Management
2020-2021	Jinwoo Park (Graduated)	TAMU	Ph.D., Geography
2020-2021	Zhiheng Hu (Graduated)	TAMU	Ph.D., Geography
2022-2023	Sarah Cummm (Graduated)	TAMU	M.S., Urban Planning
2020-2021	Yuzhu Wang (Graduated)	TAMU	M.S., Urban Planning
2020-2021	Shin Tu (Graduated)	TAMU	M.S., Urban Planning
2019-2020	Snaju Maharjan (Graduated)	TAMU	M.S., Urban Planning
2019-2020	Danqing Liao (Graduated)	TAMU	M.S., Urban Planning



2018-2019 Lauren Shultz (Graduated) TAMU M.S., Anthropology

*Sponsored Undergraduates:*

2020-2021 Nathan Young TAMU Student Worker

2020-2021 Tarik Jamil Brown TAMU Student Worker

2019-2020 Denisse Diaz TAMU Student Worker

• **Student Honors and Awards**

2023 Joynal Abedin, TAMU Department of Geography Excellence in Teaching Award  
 2023 Binbin Lin, International Cartography Association (ICA) Scholarship  
 2023 Joynal Abedin, International Cartography Association (ICA) Scholarship  
 2023 Debayan Mandal, Travel Fund for I-GUIDE Summer School 2023  
 2023 Binbin Lin, SAM Travel Award at AAG 2023  
 2023 Bing Zhou, Co-PI of a CaGIS Rising Grant (\$10,000)  
 2023 Joynal Abedin, AAG Research Grant (one of three awardees globally)  
 2023 Joynal Abedin, AAG Graduate Student Affinity Group (GSAG) Research and Support Award  
 2023 Binbin Lin, 2<sup>nd</sup> Place in GISS Student Paper Competition at AAG 2023  
 2023 Joynal Abedin, Jeanne X. Kasperson Award at AAG 2023  
 2023 Tarik J. Brown, Jeanne X. Kasperson Award at AAG 2023  
 2022 Binbin Lin, 1<sup>st</sup> Place in Graduate Student Paper Competition at Texas GIS Day 2022  
 2022 Bing Zhou, Travel Award from CaGIS at AutoCarto 2022  
 2022 Binbin Lin, Travel Award from CaGIS at AutoCarto 2022  
 2022 Debayan Mandal, Travel Award from CaGIS at AutoCarto 2022  
 2022 Binbin Lin, TAMU Department of Geography Excellence in Research Award  
 2022 Bing Zhou, CaGIS Scholarship Award  
 2022 Binbin Lin, Travel Award from the SAM Specialty Group at AAG 2022  
 2021 Bing Zhou, 1<sup>st</sup> Place in GISS Student Paper Competition at AAG 2021  
 2021 Mingzheng Yang, Travel Award from the SAM Specialty Group at AAG 2021  
 2021 Binbin Lin, Travel Award from the SAM Specialty Group at AAG 2021  
 2021 Debayan Mandal, Travel Award from the U.S. National Committee at ICC 2021

**ACADEMIC SERVICES**

• **Grant Reviewer**

2023 NSF - Mid-scale Research Infrastructure-2 (Mid-scale RI-2) (Panel)  
 2023 NSF - Civic Innovation Challenge (Panel)  
 2023 NSF - Human-Environment and Geographic Sciences  
 2022 National Academy of Sciences, Engineering, and Medicine (NASEM)/U.S. Agency for International Development (USAID)-Partnerships for Enhanced Engagement and Research (PEER) Program  
 2022 NSF - Human, Disasters, and Built-Environment (HDBE) Program (Panel)

• **University Committees**

2019-pres. Graduate Committee, Department of Geography, TAMU  
 2021-2022 Scholarship Committee, College of Geosciences, TAMU  
 2019-2020 50<sup>th</sup> Department Anniversary Committee, Department of Geography, TAMU

• **Editorial Services**

2022-pres. Editorial Board, *International Journal of Digital Earth*

- 2022-pres. Lead Guest Editor, *Annals of GIS*, SI: Geospatial Big Data – Theory, Methods, and Applications
- 2022-pres. Lead Guest Editor, *Big Earth Data*, SI: Big Earth Data for Disaster Risk Reduction
- 2022-pres. Guest Editor, *Sustainability*, SI: Empowering Sustainability with Remote/Social Sensing
- 2020-pres. Topic Editor & Outreach Group Lead, *Big Earth Data* Journal
- 2020-2022 Guest Editor, *Remote Sensing*, SI: Human-Environment Interactions Using Remote Sensing
- 2020-2022 Guest Editor, *GeoInformatica*, SI: Geospatial Artificial Intelligence
- 2020-2021 Guest Editor, *Transactions in GIS*, SI: Cyberinfrastructure and Intelligent Spatial Decision Support Systems

- **Conference Organizations**

- 2023 **Session Chair/Organizer/Moderator**

- AAG 2023: GeoAI for Disaster Resilience
- AAG 2023: Geospatial Big Data: Theory, Methods, and Applications I
- AAG 2023: Geospatial Big Data: Theory, Methods, and Applications II
- AAG 2023: GISS-SG Student Honors Paper Competition I
- AAG 2023: GISS-SG Student Honors Paper Competition I
- AAG 2023: Symposium on Human Dynamics Research: Emerging Disaster Vulnerability, Risk, and Resilience Modeling I
- AAG 2023: Symposium on Human Dynamics Research: Emerging Disaster Vulnerability, Risk, and Resilience Modeling II
- AAG 2023: Symposium on Human Dynamics Research: Understanding Human-Pandemic Dynamics using Geospatial Big Data
- AAG 2023: Symposium on Harnessing the Geospatial Data Revolution for Sustainability Solutions
  - CyberGIS and Spatial Decision Support Systems (University Consortium for Geographic Information Science)

- 2022 **Program Committee Member**

- 5th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2022)

- 2022 **Session Chair/Organizer/Moderator**

- CPGIS 2022: Big Earth Data for Disaster Risk Reduction
- UCGIS 2022: AI in Spatial Decision Support Research
- AAG 2022: GeoAI and CyberGIS for Advancing Spatial Decision Making
- AAG 2022: Scales of Vulnerability, Resilience and Disaster Risk Assessment
- AAG 2022: Modeling Human Dynamics in Integrated Social-Environmental Systems
- AGU 2022: Big Earth Data for Disaster Risk Reduction (Oral, Online Poster, and Poster)

- 2021 **Program Committee Member**

- 1st International Workshop on Methods, Models, and Resources for Geospatial Knowledge Graphs and GeoAI
- International Symposium on Geospatial Approaches to Combating COVID-19
- 4th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2021)

- 2021 **Session Organizer**

- AAG 2021: Modeling Human Dynamics in Coupled Natural-Human Systems I & II

- 2020 **Program Committee Member**

- 3rd ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2020)

- 2019 **Session Chair**

- ICC 2019: T09-6 Analysis and modeling of air quality and landscape
- ICC 2019: T09-10 Big data and machine learning (I)

- ICC 2019: T09-13 Terrain analysis, modeling, and visualization
- 2019 **Technical Committee Member**
- 11<sup>th</sup> International Conference on Machine Learning and Computing
- 2018 **Session Organizer/Chair**
- AGU 2018: Dynamic coastal systems: human-landscape interactions under changing environment

- **Invited Reviews**

- |   |  |
|---|--|
| Annals of the American Association of Geographers (5)   | Transactions in GIS (4)                        |
| Computers, Environment, and Urban Systems               | International Journal of Geographic Info. Sci. |
| Cartography and Geographic Information Science (3)      | PLOS One                                       |
| Annals of GIS   | Applied Geography (2)                          |
| Journal of Cleaner Production                           | Sustainable Cities and Society                 |
| Cities (2)  | Sustainability (5)                             |
| Science of the Total Environment                        | IJERPH (2)                                     |
| International Journal of Disaster Risk Reduction (5)    | Data (3)                                       |
| ISPRS International Journal of Geo-Information (2)      | IEEE Access                                    |
| Socio-Economic Planning Sciences                        | Safety Science                                 |
| PeerJ   | Sensors  |
| Social Science  | Future Internet (2)                            |
| Research for Transportation Business and Management     | Cogent Engineering                             |
| Journal of Marine Science and Engineering               | Cogent Social Science                          |
| Cogent Food and Agriculture                             | Journal of GEES International                  |
| International Conference on WRE 2016                    | 11 <sup>th</sup> ICMLC 2019 (2)                |
| Journal of Location Based Services (2)                  | Int. Journal of Disaster Risk Science (2)      |
| Earthquake Spectra                                      | International Journal of Digital Earth         |
| Scientific Reports                                      | Geo-Spatial Information Science                |
| Computational Urban Science (4)                         | ACM GeoAI Workshop (6)                         |
| Cambridge Journal of Regions, Economy, and Society      | ACM ARIC Workshop (2)                          |
| Int. J. of Applied Earth Observation and Geoinformation | 29 <sup>th</sup> Geoinformatics Conference (5) |
| J. of Selected Topics in Applied Earth Obs. and RS      | IEEE Internet of Things                        |
| Frontiers in Environmental Sciences                     | Environmental Science and Technology           |

- **Others**

- 2022 Textbook proposal reviewer, Geography and Environment at Springer
- 2022 Judge, Student Lightning Talks at UCGIS 2022 Symposium
- 2020-pres. Co-Founder of GeoInsider, a global organization for advancing geoscience research communication and collaboration. I invited guest speakers to share latest geoscience research and hosted all GIS-related webinars. Each webinar attracted 2,000 ~ 12,000 audiences.
- 2017-2018 Co-Founder of GIScience Club@LSU, a student/scholar organization for advancing education, communication, and research collaboration in GIScience at LSU. I invited guest speakers, delivered technical workshops, and organized team-building activities.

## **PROFESSIONAL SOCIETIES**

- 2021-pres. Cartography and Geographic Information Society (CaGIS)
- 2019-pres. University Consortium of Geographic Information Science (UCGIS)

- 2017-pres. International Cartography Association (ICA)
- 2017-pres. American Geophysics Union (AGU)
- 2016-pres. The Int. Assoc. of Chinese Professionals in Geographic Information Sciences (CPGIS)
- 2014-pres. American Association of Geographers (AAG)

### **SELECTED MEDIA COVERAGE**

- 2022 Texas A&M Today, PVAMU And Texas A&M Announce Faculty Winners of \$400K Joint PRISE Research Grants For 2022 [\[link\]](#)
- 2021 Texas A&M Today, 'Digital twins' of Texas coastal communities could shed light on resiliency [\[link\]](#)
- 2021 Research@Texas A&M, 'Digital twin' could help Galveston recover faster from severe storms [\[link\]](#)
- 2019 KXAN Texas Politics, Texas A&M flood researchers collaborate with state emergency officials on preventing future disasters [\[link\]](#)
- 2019 Texas A&M Geosciences News, NSF-funded Texas A&M study working to reduce flash flood fatalities [\[link\]](#)
- 2019 Texas A&M Health Vital Records, Focusing on the human impacts of flash floods [\[link\]](#)
- 2017 NSF Research News, Study reveals America's most flood-vulnerable communities [\[link\]](#)
- 2017 The Washington Post, Moving away from the coasts doesn't mean you're safe from flooding [\[link\]](#)
- 2017 ScienceDaily, Flooding risk: America's most vulnerable communities [\[link\]](#)
- 2017 USA Today, Hurricane Harvey: Yet another harbinger of climate change [\[link\]](#)
- 2017 The Conservation, Americans live far from coasts should also be worried about flooding [\[link\]](#)
- 2017 CNBC, Americans who live far from coasts should also be worried about flooding [\[link\]](#)
- 2017 Bloomberg, Where tomorrow's floods will come [\[link\]](#)