CURRICULUM VITAE

ZHE ZHANG

+1 (979) 845-6523
Email: zhezhang@tamu.edu
Associate Professor, Department of Geography, Texas A&M University (TAMU)
Office: 203C Computer Service Annex
Mailing address: 3147 TAMU, College Station, TX, 77843
Web: https://www.cidigis.com/

1. **RESEARCH AND TEACHING INTERESTS**

- Geographic Information Science and System (GIS)

- Cyberinfrastructure and CyberGIS

- Geospatial Artificial Intelligence (GeoAI)

- Participatory GIS and spatial decision-making

- High-performance and distributed computing

2. **EDUCATION**

2016   **Doctor of Science** (with distinction) in Geoinformatics, minored in applied mathematics, Department of Built Environment, Aalto University, Espoo, Finland

2009   **Master of Science** (Technology) in Geomatics, Department of Surveying, Helsinki University of Technology, Espoo, Finland

2005   **Bachelor of Environmental Engineering**, Tampere University of Applied Sciences, Tampere, Finland

3. **APPOINTMENTS**

- **Academic Institutions**

2025- Pres.   Associate Professor, Department of Geography, TAMU

2019-2025   Assistant Professor, Department of Geography, TAMU

2018-2019   Visiting Assistant Professor, Department of Geography, TAMU

2017-2018   Postdoctoral Research Associate, Department of Geography and Geographic Information Science, University of Illinois Urbana-Champaign

2010-2015   Graduate Research Assistant, Aalto University, Finland

- **Other Professional Organizations**

2025-Pres.   Chair, Research Committee, University Consortium for Geographic Information Science (UCGIS)

2025-Pres.   Member of Board of Directors, Cartography and Geographic Information Society (CaGIS)

2023-2024   Chair, Cyberinfrastructure Specialty Group, American Association of Geographers (AAG)

2022-2023	Vice Chair, Cyberinfrastructure Specialty Group, AAG
2023-Pres.	Affiliate Faculty, Electrical and Computer Engineering, TAMU
2022-Pres.	Affiliate Faculty, Gulf of America Coastal Ocean Observing System
2019-Pres.	Affiliate Faculty, Texas A&M Hazard Reduction & Recovery Center, TAMU
2016	Application Specialist, Department of Spatial Data Infrastructure, National Land Survey of Finland

4. AWARDS AND HONORS

2025	Invited to attend the TAMU Innovation, Mentoring, Purpose, Aspiration, and Community (IMPACT) High-Impact Faculty Ceremony, organized by TAMU Faculty Affairs.
2025	PEARC 25 Travel Award
2024	Best Paper Award, ISPRS International Journal of Geo-Information
2024	Pathways Award, TAMU Faculty Affairs
2024	Invited to attend the TAMU IMPACT Ceremony organized by TAMU Faculty Affairs
2023	CAREER Award, National Science Foundation (NSF)
2022	Travel Award, STEM-Trek SC22 Co-Located workshop at International Conference for High Performance Computing, Networking, Storage, and Analysis
2021	I-GUIDE Community Champion, UCGIS and NSF
2021	The LIGHTBULB education award, Texas Youth Action Network (TYAN) funded by Texas Department of State Health Services
2019	Travel Award, NSF- Conceptualization: Geospatial Software Institute Workshop
2016	Distinction Dissertation Award, Aalto University, Finland

5. FUNDED PROJECTS

- **External Grants, Total $16.8 million**

2025	**PI**, NSF, Collaborative Research: Conference: NAIRR Pilot Expansion: FA1: Utilizing NAIRR Pilot Resources for Building Sustainable Blue Economy, $299,997
2025	**PI**, NSF, Collaborative Research: CyberTraining Implementation Medium: Broadening Adoption of Cyberinfrastructure and Geospatial Artificial Intelligence for Disaster Management, $999,991
2024	**PI**, NSF, CAREER: A Cyberinfrastructure Enabled Hybrid Spatial Decision Support System for Improving Coastal Resilience to Flood Risks, $568,302
2023	**PI**, NSF, Collaborative Research: CyberTraining: Implementation: Small: Broadening Adoption of Cyberinfrastructure and Research Workforce

Development for Disaster Management, $ 454,847

2023   **PI**, NSF, Collaborative Research: Conference: Geospatial Cyberinfrastructure Workshop: Building High-Performance, Ethical, and Secured Geospatial Software, $25,020

2023   **Co-PI**, NSF, CC* Data Storage: FASTER Data Infrastructure to Accelerate Computing, $499,527

2022   **TAMU PI**, NASA, Spatial Decision Support System for Identifying Heat Vulnerability in Oklahoma City, $149,163

2021   **PI**, Texas Department of State Health, Texas Youth Action Network, K-12 GIS and Geography Education, $10,000

2021   **PI**, National Geographic Society, Texas Youth Geography Network: Spatial Learning Tools for Advancing Youth Geography Education, $42,978

2021   **PI**, NSF, Convergence Accelerator Track E: Combining global high-resolution climate simulations with ocean biogeochemistry, fisheries and decision-making models to improve sustainable fisheries management, $749,548

2021   **Co-I**, NSF, Category II: ACES - Accelerating Computing for Emerging Sciences, $12,374,786

2021   **Co-PI**, US Department of Transportation, Impact of COVID-19 Induced Active Transportation Demand on the Built Environment and Public Health, $90,000

2020   **Co-PI**, NSF, MRI: Acquisition of A High-Performance Data Analysis and Computing System to Foster Accelerated Sciences Transformation in Education and Research, $3,090,000

2020   **PI**, NSF& Natural Hazards Center, Social Vulnerability, Mobility, and COVID-19 Spatial Mortality Patterns, $1,000

2020   **Co-PI**, NOAA Texas Sea Grant, A Hybrid Decision Support System for Driving Resiliency in Texas Coastal Communities, $299,995

- **Internal Grants, Total $710,000**

2024   **PI**, Texas A&M Targeted Proposal Teams Program, GeoShare: An AI-Driven Open Knowledge Geoscience Data Sharing Cyberinfrastructure, $60,000

2023   **Co-PI**, TAMU Targeted Proposal Teams Program, Center for Healthy, equitable, and resilient transportation + environment in Texas, $250,000

2022   **Co-PI**, TAMU Institute of Data Science, Design & Analytics Lab for Urban Artificial Intelligence, $300,000

2022   **PI**, TAMU College of Arts and Sciences, Analyzing Associations between Food Insecurity and Health Outcomes using Multi-source Micro Data, $10,000

2021   **PI**, TAMU Geoscience Dean's program, A Community-Scale Climate Change Adaptation System based on Spatial Decision Analysis and High-Resolution Climate Simulations and Projections, $6000

2021   **PI**, TAMU President's Excellence Fund: T3 Grant, Human-Centered Decision Support System for Improving Urban Resilience in Disaster Management,

$32,000

2020   **PI**, TAMU School of Innovation- Innovation [X], An Intelligent Spatial Decision Support System based on Citizen Science for Driving Resilience in Coastal Communities, $20,000

2020   **PI**, TAMU Institute of Data Science, A Spatial Decision Support System for Cardiovascular Disease Risk Assessment in Response to the COVID-19 Crisis, $32,000

6. PUBLICATIONS

Notes: Asterisks (*) denote advisee's publication
        Pound (#) denote that Dr. Zhang is a corresponding author of the publication.
Summary: Published 39 peer-reviewed journal articles and book chapters, including 23 as first or corresponding author or co-authored with advisees.

- **Book Chapters**

3*#. Xie, Y., Liu, J., Hu, N., Li, D., Song, Z. and **Zhang**, Z., 2025. Towards Ethical Spatial Decision-Making in Geospatial Artificial Intelligence. In *GeoAI and Human Geography: The Dawn of a New Spatial Intelligence Era* (pp. 313-325). Cham: Springer Nature Switzerland

2. Wang, S., Bishop, M.P., **Zhang**, Z., Young, B.W. and Xu, Z., 2022. CyberGIS and Geospatial Data Science for Advancing Geomorphology. *In Treatise on Geomorphology* (pp. 238-259), Elsevier.

1#. **Zhang**, Z. Thematic accuracy. In The Geographic Information Science & Technology Body of Knowledge, 2020. (2nd Quarter 2020 Edition), John P. Wilson(ed). https://gistbok-topics.ucgis.org/UCGIS

- **Journal Articles**

40. Xie, Y., **Zhang**, Z., Liu, H., and He, Z., 2025. Advancing Urban Flood Mapping using Explainable AI. Cartography and Geographic Information Science (In Review)

39*#. Hu, N., Dadashova, B., **Zhang**, Z., 2025. Exploring Sentiment Changes About Active Transportation During COVID-19 Using Social Media Data Mining**.** Journal of Cycling and Micromobility (In Review)

38. Lee, J., Paal, S., **Zhang**, Z., 2025. A data-driven approach to predicting power outages during winter storms in the Southern U.S. leveraging nonparametric machine learning models**.** Computational Urban Science (In Review)

37. **Zhang**, Z., Song, Z., Chang, P., Chapman, P., Morrison, M., Danabasoglu, G., Tao, J., Petrik, C., and Tommasi, D., Sustainable Blue: A Participatory Spatial Decision Support System for Fishery Management, 2025. *Annals of the American Association of Geographers* (In Revision)

36*#. Xie, Y., **Zhang**, Z., Liu, J., Song, Z., 2025. Enhanced Maritime Navigation: Integrating Risk-Aware Vessel Routing with Advanced Dijkstra Algorithm and Multicriteria Decision Analysis. *Maritime Policy & Management* (Accepted)

35*#. Song, Z., **Zhang**, Z., Sussman, A., Xie, Y., Brenner, J. and Liu, J., Netcdfaster: Optimizing Netcdf Data Querying and Geo-Visualization Using High-Performance Machine Learning. *Software X*, 31, p. 102269

34*#. Liu, J., Song, Z., Xie, Y. and **Zhang**, Z., 2025. Enhancing Management Strategy Evaluation: Implementation of a TOPSIS-Based Multi-Criteria Decision-Making Framework for Harvest Control Rules. *Fishes*, *10*(4), p.140

33. Ye, X., Newman, G., Zhai, W., Retchless, D., Das, S., Ham, Y., Zou, L., Huang, X. and **Zhang**, Z., 2025. Toward Coastal Infrastructure Resiliency: An AI-Enabled Decision Support Framework for Multiscale Comprehension and Stakeholder Empowerment. *Transactions of the American Philosophical Society*, *114*(1), pp.65-97

32*#. Li, D., Zhao, Y., Wang, Z., Jung, C. and **Zhang**, Z., 2024. Large language model-driven structured output: A comprehensive benchmark and spatial data generation framework. *ISPRS International Journal of Geo-Information*, *13*(11), p.405

31*. Zhang, Z., Li, D., **Zhang**, Z. and Duffield, N., 2024. Mining spatiotemporal mobility patterns using improved deep time series clustering. *ISPRS International Journal of Geo-Information*, *13*(11), p.374

30*#. Song, Z., **Zhang**, Z., Lyu, F., Bishop, M., Liu, J. and Chi, Z., 2024. From Individual Motivation to Geospatial Epidemiology: A Novel Approach Using Fuzzy Cognitive Maps and Agent-Based Modeling for Large-Scale Disease Spread. *Sustainability*, *16*(12), p.5036

29. **Zhang**, Z., King, J., Wang, S., Sinton, D., Wilson, J. and Shook, E., 2024. Moving CyberGIS education forward: Knowing what matters and how it is decided. *Transactions in GIS*, *28*(7), pp.2180-2194

28*#. Hu, N., **Zhang**, Z., Duffield, N., Li, X., Dadashova, B., Wu, D., Yu, S., Ye, X., Han, D. and Zhang, Z., 2024. Geographical and temporal weighted regression: examining spatial variations of COVID-19 mortality pattern using mobility and multi-source data. *Computational Urban Science*, *4*(1), p.6

27. Hillin, J., Alizadeh, B., Li, D., Thompson, C.M., Meyer, M.A., **Zhang**, Z. and Behzadan, A.H., 2024. Designing user-centered decision support systems for climate disasters: what information do communities and rescue responders need during floods?*Journal of Emergency Management*, 2024, 22(7), p. 71-85

26*#. Song, Z., Chapman, P., Tao, J., Chang, P., Gao, H., Liu, H., Brannstrom, C. and **Zhang**, Z., 2024. Mapping the Unheard: Analyzing Tradeoffs Between Fisheries and Offshore Wind Farms Using Multicriteria Decision Analysis. *Annals of the American Association of Geographers*, *114*(3), pp.536-554

25. Li, X., Fu, D., Nielsen-Gammon, J., Gangrade, S., Kao, S.C., Chang, P., Hernández, M.M., Voisin, N., **Zhang**, Z. and Gao, H., 2023. Impacts of climate change on future hurricane induced

rainfall and flooding in a coastal watershed: A case study on Hurricane Harvey. *Journal of Hydrology*, *616*, p.128774

24*#. Li, D., **Zhang**, Z., Alizadeh, B., Zhang, Z., Duffield, N., Meyer, M.A., Thompson, C.M., Gao, H. and Behzadan, A.H., 2024. A reinforcement learning-based routing algorithm for large street networks. *International Journal of Geographical Information Science*, *38*(2), pp.183-215

23. Du, S., Yao, J., Shen, G.C., Lin, B., Udo, T., Hastings, J., Wang, F., Wang, F., **Zhang**, Z., Ye, X. and Zhang, K., 2023. Social drivers of mental health: A US study using machine learning. *American journal of preventive medicine*, *65*(5), pp.827-834

22. Yang, Y., Chen, X., Gao, S., Li, Z., **Zhang**, Z. and Zhao, B., 2023. Embracing geospatial analytical technologies in tourism studies. *Information Technology & Tourism*, *25*(2), pp.137-150

21*#. Li, D. and **Zhang**, Z., 2023. MetaQA: Enhancing human-centered data search using Generative Pre-trained Transformer (GPT) language model and artificial intelligence. *Plos one*, *18*(11), p.e0293034

20*#. Cui, W., Hu, N., Zhang, S., Li, D., Martinez, L., Goldberg, D., Güneralp, B. and **Zhang**, Z., 2022. Analyzing spatial variations of heart disease and type-2 diabetes: A multi-scale geographically weighted regression approach. *Computational Urban Science*, *2*(1), p.34

19. Li, X., Yu, S., Huang, X., Dadashova, B., Cui, W. and **Zhang**, Z., 2022. Do underserved and socially vulnerable communities observe more crashes? A spatial examination of social vulnerability and crash risks in Texas. *Accident Analysis & Prevention*, *173*, p.106721

18. Li, X., Farrukh, M., Lee, C., Khreis, H., Sarda, S., Sohrabi, S., **Zhang**, Z. and Dadashova, B., 2022. COVID-19 impacts on mobility, environment, and health of active transportation users. *Cities*, *131*, p.103886

17. Huang, X., Xu, Y., Liu, R., Wang, S., Wang, S., Zhang, M., Kang, Y., **Zhang**, Z., Gao, S., Zhao, B. and Li, Z., 2022. Exploring the spatial disparity of home-dwelling time patterns in the USA during the COVID-19 pandemic via Bayesian inference. *Transactions in GIS*, *26*(4), pp.1939-1961

16. Alizadeh, B., Li, D., Hillin, J., Meyer, M.A., Thompson, C.M., **Zhang**, Z. and Behzadan, A.H., 2022. Human-centered flood mapping and intelligent routing through augmenting flood gauge data with crowdsourced street photos. *Advanced Engineering Informatics*, *54*, p.101730

15. **Zhang**, Z., Zou, L., Li, W., Usery, L., Albrecht, J. and Armstrong, M., 2021. Cyberinfrastructure and intelligent spatial decision support systems. *Transactions in GIS*, *25*(4)

14. **Zhang**, Z., Yin, D., Virrantaus, K., Ye, X. and Wang, S., 2021. Modeling human activity dynamics: an object-class oriented space–time composite model based on social media and urban infrastructure data. *Computational Urban Science*, *1*(1), p.7

13. Jiang, H., Hu, H., Li, B., **Zhang**, Z., Wang, S. and Lin, T., 2021. Understanding the non-stationary relationships between corn yields and meteorology via a spatiotemporally varying coefficient model. *Agricultural and Forest Meteorology*, *301*, p.108340

12. Li, Y., Gao, H., Allen, G.H. and **Zhang**, Z., 2021. Constructing reservoir area–volume–elevation curve from TanDEM-X DEM data. *IEEE journal of selected topics in applied earth observations and remote sensing*, *14*, pp.2249-2257

11. Li, X., Dadashova, B., Yu, S. and **Zhang**, Z., 2020. Rethinking highway safety analysis by leveraging crowdsourced waze data. *Sustainability*, *12*(23), p.10127

10*#. Li, D., Chaudhary, H. and **Zhang**, Z., 2020. Modeling spatiotemporal pattern of depressive symptoms caused by COVID-19 using social media data mining. *International Journal of Environmental Research and Public Health*, *17*(14), p.4988.

9. Xu, B., Li, Y., Han, F., Zheng, Y., Ding, W., Zhang, C., Wallington, K. and **Zhang**, Z., 2020. The transborder flux of phosphorus in the Lancang-Mekong River Basin: Magnitude, patterns and impacts from the cascade hydropower dams in China. *Journal of Hydrology*, *590*, p.125201

8. **Zhang**, Z., Laakso, T., Wang, Z., Pulkkinen, S., Ahopelto, S., Virrantaus, K., Li, Y., Cai, X., Zhang, C., Vahala, R. and Sheng, Z., 2020. Comparative study of AI-based methods—application of analyzing inflow and infiltration in sanitary sewer subcatchments. *Sustainability*, *12*(15), p.6254

7. **Zhang**, Z., Zhao, J., and Sullivan, C.J., 2019. Identifying anomalous nuclear radioactive sources using Poisson kriging and mobile sensor networks. *PLoS One*, *14*(5), p.e0216131. Zhang and Zhao contributed equally.

6. Armstrong, M.P., Wang, S. and **Zhang**, Z., 2019. The Internet of Things and fast data streams: prospects for geospatial data science in emerging information ecosystems. *Cartography and Geographic Information Science*, *46*(1), pp.39-56

5. **Zhang**, Z., Hu, H., Yin, D., Kashem, S., Li, R., Cai, H., Perkins, D. and Wang, S., 2020. A cyberGIS-enabled multi-criteria spatial decision support system: A case study on flood emergency management. *International Journal of Digital Earth,* 2018*,* 12(11), pp. 1364-1381

4. Seppänen, H., Luokkala, P., **Zhang**, Z., Torkki, P. and Virrantaus, K., 2018. Critical infrastructure vulnerability—A method for identifying the infrastructure service failure interdependencies. *International Journal of Critical Infrastructure Protection*, *22*, pp.25-38

3. **Zhang**, Z., Demšar, U., Wang, S. and Virrantaus, K., 2018. A spatial fuzzy influence diagram for modelling spatial objects' dependencies: A case study on tree-related electric outages. *International Journal of Geographical Information Science*, *32*(2), pp.349-366

2. **Zhang**, Z. and Virrantaus, K., 2016. Use of a Fuzzy Decision-making Approach in an Analysis of the Vulnerability of Street Networks for Disaster Management. *Nordic Journal of Surveying and Real Estate Research*, *11*(2), pp.7-19

1. **Zhang**, Z., Demšar, U., Rantala, J. and Virrantaus, K., 2014. A fuzzy multiple-attribute decision-making modelling for vulnerability analysis on the basis of population information for disaster management. *International Journal of Geographical Information Science*, *28*(9), pp.1922-1939

- **Conference Proceedings**

8*#. Hu, N., **Zhang**, Z., Arundel, S., 2025. Natural Language Querying of Topographic Maps using a Generative Pre-trained Transformer-based Large Language Model. The 8th ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery (In Review).

7*#. Liu, J., **Zhang**, Z., Cheng, Y., Lee, J., Paal, S., Li, D., 2025, August. A wide-and-deep-based spatial time sequence model for predicting power outages caused by extreme winter storms. In the proceeding of *the 32nd International Cartographic Conference.*

6*#. Zhang, Z., Li, D., Song, Z., Duffield, N. and **Zhang**, Z., 2023, November. Location-Aware social network recommendation via temporal graph networks. In *Proceedings of the 7th ACM SIGSPATIAL Workshop on Location-based Recommendations, Geosocial Networks and Geoadvertising* (pp. 58-61)

5. **Zhang**, Z., Wang, Z., Li, A., Ye, X., Usery, E.L. and Li, D., 2021, November. An al-based spatial knowledge graph for enhancing spatial data and knowledge search and discovery. In *Proceedings of the 1st ACM SIGSPATIAL International Workshop on Searching and Mining Large Collections of Geospatial Data* (pp. 13-17)

4. Li, D. and **Zhang**, Z., 2021, November. Urban computing cyberinfrastructure: visualizing human sentiment using social media and augmented reality. In *Proceedings of the 4th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities* (pp. 27-31)

3. Alizadeh, B., Li, D., **Zhang**, Z. and Behzadan, A.H., 2021. Feasibility study of urban flood mapping using traffic signs for route optimization. In proceeding of *EG-ICE 2021 Workshop on Intelligent Computing in Engineering* (pp. 572-581)

2. **Zhang**, Z., Li, D., Zhang, Z. and Duffield, N., 2021, November. A time-series clustering algorithm for analyzing the changes of mobility pattern caused by COVID-19. In *Proceedings of the 1st ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility* (pp. 13-17)

1. **Zhang**, Z., 2019. Geospatial Software Institute: A Knowledge Hub for Driving Sustainable Geospatial Software Ecosystem. In *The 3rd NSF Workshop on Conceptualizing a National Geospatial Software Institute*

7. **TEACHING EXPERIENCE**

- **Instructor**

Year	Term	Course
2025	Fall	GIS Programming
	Spring	WebGIS
	Spring	WebGIS(Online)
2024	Fall	GIS Programming
	Spring	WebGIS
	Spring	Natural Hazards

2023	Fall	GIS Programming
2022	Fall	GIS Programming
	Fall	WebGIS (Online)
	Spring	WebGIS
	Spring	WebGIS (Online)
2021	Fall	GIS Programming
	Spring	WebGIS (Online)
	Spring	GIS Modeling (Online)
2021	Summer	High School GIS Summer School
2020	Fall	GIS Programming (Online)
	Spring	GIS Modeling (Online)
	Spring	Frontiers in Geographic Information Science
2019	Fall	WebGIS(Online)
	Summer	WebGIS(Online)
	Spring	WebGIS
	Spring	GIS Modeling (Online)
2018	Fall	WebGIS (Online)
	Fall	Applications in GIS(Online)

- **Guest Lecturer**

Year	Term	Lecture Title	School
2025	Summer	Social Sensing: Leveraging GeoAI and ACES High-Performance Computing	TAMU CyberTraining Summer School
	Spring	CyberTraining: Broadening Adoption of Cyberinfrastructure and Research Workforce Development for Disaster Management	I-GUIDE Forum, Chicago
2024	Spring	Spatial Decision Support Systems in the Era of Big Data and Disaster Management	University at Albany, State University of New York
	Spring	Spatial Decision Support Systems in the Era of Big Data and Disaster Management	Morgan State University
2023	Spring	Spatial Decision Support Systems in the Era of Big Data and Disaster Management	University at Albany, State University of New York
2021	Summer	A Human-Centered Spatial Decision Support System for Street Level Flood Mapping and Disaster Management	TAMU GeoX High School Summer Camp
2019	Fall	Spatial Decision Support Systems: Leveraging CyberGIS in Disaster	TAMU Public Health

		Management	

8. STUDENT MENTORSHIP

- **Committee Chair**

2025-Pres.   Yuan Niu, Degree: PHD, Major: GEOG (Geography**)**

2025-Pres.   Siyu Lu, Degree: PHD, Major: GEOG

2023 -2025 Summer   Connor Gooch, Degree: MS, Major: GEOG

2023- Pres.   Nanzhou Hu, Degree: PHD, Major: GEOG

2022- Pres.   Yuhang Xie, Degree: PHD, Major: GEOG

2022- Pres.   Jikun Liu, Degree: PHD, Major: GEOG

2022-2024   Jerad King, Degree: MS, Major: GEOG, Job Placement: Esri

2021- 2025 Fall   Zhenlei Song, Degree: PHD, Major: GEOG, Job Placement: Esri

2020-2024   Diya Li, Degree: PHD, Major: GEOG, Job Placement: Esri

2019-2023   Nanzhou Hu, Degree: MS, Major: GEOG

2019-2022   Shuyang Zhang, Degree: MS, Major: GEOG, Job Placement: China National Petroleum Corporation

- **Committee Member**

2021 -Pres.   Ziyi Zhang, Degree: PHD, Major: CEEN (Electrical and Computer Engineering)

2020 – Pres.   Jangjae Lee, Degree: PHD, Major: CVEN (Civil and Environmental Engineering)

2020 - 2023   Sydney Butler, Degree: MS, Major: ATMO (Atmospheric Science)

2020 - 2021   Ziyi Zhang, Degree: MS, Major: CEEN

2019 - 2021   Yerim Lee, Degree: MS, Major: AR-UP (Architecture and Urban Planning)

2019 - 2022   Alex Smith, Degree: MS, Major: ATMO

2018-2024   Wencong Cui, Degree: PHD, Major: GEOG

2018-2023   Jaeyoon Kim, Degree: PHD, Major: COSC (Construction Science),

2018 - 2019   Zahra Ghorbani, Degree: MS, Major: COSC

2018-2025   Jinhyun Bae, Degree: PHD, Major: AR-UP

- **Student Honors and Awards**

2025   Zhenlei Song, 2nd place in Esri Intern Hackathon Competition

2025   Nanzhou Hu, TAMU High-Performance Computing ACES workshop travel award

2025	Jikun Liu, I-GUIDE Summer School travel award
2025	Jikun Liu, CaGIS Travel Award
2025	Jikun Liu, International Cartography Association (ICA) Scholarship
2024	Zhenlei Song, I-GUIDE Summer School Competition 1st place as a team lead
2024	Zhenlei Song, I-GUIDE Summer School travel award
2024	Zhenlei Song, SC Conference travel award
2024	Zhenlei Song, Student Director, AAG Cyberinfrastructure Specialty Group
2023	Zhenlei Song, 3rd place in AAG Robert Raskin student paper competition
2023	Nanzhou Hu, Honorable Mention in AAG Robert Raksin student paper competition
2023	Yuhang Xie, TAMU High-Performance Computing ACES workshop travel award
2022	Diya Li and Zhenlei Song, 1st place and best presentation awards in TAMU Student Data Science Competition

9. SERVICES

- **External Services**

2025-Pres.	Chair, Research Committee, UCGIS
2025-Pres.	Member of Board of Directors, CaGIS
2023-2024	Chair, Cyberinfrastructure Specialty Group, American Association of Geographers (AAG)
2022-2023	Vice Chair, Cyberinfrastructure Specialty Group, American Association of Geographers (AAG)
2019-2025	Leader, CyberGIS and Decision Support System Research Initiative, Research Committee, UCGIS

- **Internal Services**

2025-Pres.	Department Representative, College of Arts and Sciences Research Visibility Program
2025	Member, Search Committee
2023-Pres.	Member, Scholarship Committee
2022	Member, Search Committee
2019-2022	Member, IT Committee

- **Invited Panelist**

2020-Pres.	Served as panelist and reviewer for six U.S. NSF programs and one Swiss NSF program.
2025	8. AAG Symposium on Spatial AI& Data Science for Sustainability: Geospatial

	Platform for Sustainability Research and Education, Detroit
2024	7. CaGIS-UCGIS Symposium -GeoAI Panel, Columbus
2024	6. Southwest AAG Conference: Grant Application and Proposal Development Panel
2023	5. Gulf of America Coastal Ocean Observing System Council Meeting Panel Session, Orange Beach
2023	4. AAG Symposium on Harnessing the Geospatial Data Revolution for Sustainability Solutions: Convergence of CyberGIS and Geospatial AI Panel, Denver
2022	3. UCGIS Symposium: AI in Spatial Decision Support Panel, Syracuse
2022	2. Texas A&M Institute of Data Science Research Conference Panel, College Station
2020	1. TAMU Department of Landscape Architecture & Urban Planning: Writing Small Grants Workshop Panel, College Station

- **Conference Chair, Co-Chair, and Organizer**

2025	Organizer and Chair, TAMU CyberTraining Summer School
2025	Co-Chair: 2025 AAG Symposium on Spatial AI & Data Science for Sustainability
2024	Organizer: AAG Robert Raskin Student Paper Competition
2024	Chair and Principal Investigator: 2024 AAG Annual Meeting: Geospatial Cyberinfrastructure Workshop: Building High-Performance, Ethical, and Secured Geospatial Software Workshop
2024	Organizer: CyberTraining Workshop, Annual Natural Hazards Research and Applications Workshop
2024	Co-Chair: NSF CyberTraining PI meeting organizer committee
2023	Organizer: AAG Robert Raskin Student Paper Competition
2023	Co-Chair: AAG Annual Meeting: Symposium on Harnessing the Geospatial Data Revolution for Sustainability Solutions
2022	Co-Chair: AAG Annual Meeting: Symposium on Data-Intensive Geospatial Understanding in the Era of AI and CyberGIS
2022	Session Chair: AAG Annual Meeting: Symposium on Data-Intensive Geospatial Understanding in the Era of AI and CyberGIS- Human Centered Spatial Decision Support Systems
2021	Session Chair: AAG Annual Meeting: Symposium on Human Dynamics Research
2020	Session Chair: AAG Annual Meeting: Symposium on Frontiers in Geospatial Data Science
2019	Session Chair: The 3rd NSF Conceptualizing a Geospatial Software Institute workshop

2019   Session Chair: AAG Annual Meeting: Symposium on Frontiers in Geospatial Data Science: Synergizing Geospatial Data Science with Domain Applications IV: Disaster Management

- **Editorial Services**

2021-2022   Guest Editor: *Frontiers in Environmental Science- special issue on Big Earth Data Intelligence for Environmental Modeling*

2020-2021   Guest Editor: *Transactions in GIS*

2020-Pres.   Associate Editor: *Computational Urban Science*

- **Review of Journal Articles**

-International Journal of Geographical Information Science
-Annals of the American Association of Geographers
-Computers, Environment and Urban Systems
-Transactions in GIS
-ISPRS International Journal of Geo-Information
-Urban Water Journal
-Water
-Journal of Location Based Services
Computing

-Data

-IEEE Transactions on Learning Technologies

-*International Journal of Information Technology & Decision Making*
-*International Journal of Environmental Research and Public Health*
-*Journal of Spatial Information Science*
-*Applied Sciences*
-*Energy Research & Social Science*
-*Annals of GIS*
-*Urban Informatics*
-*International Journal of Science and Technology Education Research*
-*Journal Entropy*
-*Personal and Ubiquitous Computing*

10. PROFESSIONAL PRESENTATIONS

Notes: Asterisks (*) denote advisee's presentation

- **Invited Talk**

2025   15. Toward Next-Generation Spatial Decision Support: Leveraging GeoAI and Cyberinfrastructure for Coastal Resilience. Center for Geographic Analysis, Harvard University, Cambridge

2025   14*. Unsupervised Power Line Detection from 3DEP Lidar Using Reinforcement Learning. U.S. Geological Survey (USGS) Center of Excellence for Geospatial Information Science (CEGIS) Annual Research Meeting (Co-presented with

graduate student Nanzhou Hu), online

2025	13. GeoAI for Coastal Challenges: Leveraging Advanced Cyberinfrastructure and Data Science for a Resilient and Sustainable Future. Federal GeoAI CoP meeting, online
2024	12. Cyberinfrastructure and Geospatial Artificial Intelligence: Applications in Spatial Knowledge Discovery and Decision-Making. TAMU Department of Biological and Agricultural Engineering and Water Management and Hydrologic Sciences Seminar, College Station
2024	11. A Hybrid Spatial Decision Support System for Driving Resiliency in Coastal Communities, NOAA Sea Grant Week, online
2023	10. Hybrid Spatial Decision Support Systems in the Era of Big Data and Convergent Disaster Science, USGS CEGIS Annual Research Meeting, Rolla, Missouri
2023	9. Spatial Decision Support Systems in Convergence Disaster Science, TAMU College of Engineering Seminar, College Station
2022	8. Combining High-Resolution Climate Simulation with Ocean, Biogeochemistry, Fisheries and Decision-making Models to Improve Sustainable Fisheries, NSF Convergence Accelerator Expo, online
2022	7. A Geospatial Cyberinfrastructure for Convergence Science, Texas A&M High-Performance Research Computing Center Workshop, College Station
2022	6. Urban Computing Cyberinfrastructure: Visualizing Human Sentiment using social media and augmented reality, Texas A&M Institute of Data Science Digital Twin workshop, online
2022	5. Urban Computing Cyberinfrastructure: Visualizing Human Sentiment using social media and Augmented Reality, Texas A&M Institute of Data Science Workshop on Design & Analytics for Urban Artificial Intelligence, online
2021	4. Spatiotemporal Knowledge Graph for Knowledge Discovery, NASA Goddard Space Flight Center, online
2021	3. **Keynote**: Artificial Intelligence in the Era of Big Data and Convergence Science, National Land Survey of Finland, online
2021	2. Social sensing and GIS in Disaster Management, Texas A&M High-Performance Research Computing Summer Camp, College Station
2020	1. Building Resilience City in Disaster Management, TAMU Center for Texas Beaches and Shores, Houston

- **Selected Conference Presentations**

| 2025* | Liu, J., Bugada, A., Rajput, A., and Yao, X. Assessing Instance-based Disaster Impact through Streamlining Multimodal Geospatial Data with Building Damage Prediction and Demographic Attributes. CyberTraining Summer School, College Station |

2025*   Niu, Y., Cao, H., Tagnan, J., Lee, J., Guo, L., and Wang, W. Quantifying Traffic Congestion for Resilient Road Network Management in Houston, Texas. CyberTraining Summer School, College Station

2025*   Lu, S., Zhou, S., Thapaliya, P., Hosseinizadeh, A., Zhou, J., Ghahremani, S., Okegbola, M., and Cao, Y. GeoAI-Driven Flood Risk Mapping and Transportation Network Vulnerability Analysis for Disaster Preparedness. CyberTraining Summer School, College Station

2025   Xie, Y. and **Zhang**, Z. Enhanced Maritime Navigation for Fishing Vessels: Integrating Risk-Aware Vessel Routing with Advanced Dijkstra Algorithm and Multicriteria Decision-Making. AAG 2025, Detroit

2025*   Xie, Y., Jang, L., Salau, O., Tan, H., Tse, J. ML-Based Flood Prediction Using Multiple Geospatial and Environmental Factors, CyberTraining Summer School, College Station.

2025   Liu, J. Cheng, Y., **Zhang**, Z., and Li, D. A Wide-and-Deep-Based Time Sequence Model for Predicting Power Outages Caused by Extreme Winter Storms, International Cartographic Conference, Vancouver

2025*   Liu, J., Ghaneei, P., Akinboyewa, T., Balogun, R., Berg, A., Chen, X, Zhou, W. Flood Depth Prediction through Geospatial Data Fusion and Machine Learning, I-GUIDE Summer School, Boulder.

2025   Liu, J. and **Zhang**, Z. Enhancing Management Strategy Evaluation: Implementation of a TOPSIS-Based Multi-Criteria Decision-Making Framework for Harvest Control Rules, AAG 2025, Detroit.

2025   Hu, N., **Zhang**, Z., Arundel, S., Shavers, E., and Liu, J. Unsupervised Power Line Detection from 3DEP Lidar Using Graph Attention and Reinforcement Learning. USGS Research Annual Meeting, online

2025   Song, Z., **Zhang**, Z., Sussman, A., Xie, Y., Brenner, J., & Liu, J. (2025). NetCDFaster: Optimizing NetCDF data querying and geo-visualization using high-performance machine learning. AAG 2025 Symposium on Spatial AI & Data Science for Sustainability: Big Data Computing for Geospatial Applications, Detroit

2023   Song, Z., **Zhang**, Z. A Geospatial Cyberinfrastructure for NetCDF Files Full-Stack I/O and Visualization of Climate and Fishery Datasets Using High-Performance Computing Clusters. AAG Annual Meeting, Denver

2023   Song, Z., **Zhang**, Z. A Human Environment Interaction Modeling Tool for Sustainable Coastal and Ocean Management. AAG Annual Meeting, Denver

2023   Hu, N., **Zhang**, Z. Exploring Sentiment Changes About Active Transportation During COVID-19 using Social Media Data Mining. International Symposium on Location-based Big Data and GeoAI, online

2023   King, J., **Zhang**, Z. Disaster Science and GIS Education enabled by ArcGIS story maps: Spatial Learning Tools for Advancing Youth Geography Education. The 48th Annual Natural Hazards Research and Applications Workshop, Broomfield

2023   **Zhang**, Z. Wang, S., and Liu, H. Broadening Adoption of Cyberinfrastructure and Research Workforce Development for Disaster. NSF CyberTraining PI Meeting,

Houston

2023   **Zhang**, Z. and Li, D. Urban Computing Cyberinfrastructure: Visualizing Human Sentiment using social media and Augmented Reality. The 3rd International Conference on Urban Informatics, Hong Kong.

2022   **Zhang**, Z. Human-centered Spatial Decision Support Systems. AAG Symposium on Data-Intensive Geospatial Understanding in the Era of AI and CyberGIS, AAG Annual Meeting, online

2021   **Zhang**, Z. and Huang, R. An Intelligent Spatial Decision Support System based on Citizen Science for Driving Resilience in Coastal Communities. Texas A&M Innovation X Workshop, online

2021   Li, D., and **Zhang**, Z. An Al-based Spatial Knowledge Graph for Enhancing Spatial Data and Knowledge Search and Discovery. The 1st ACM SIGSPATIAL International Workshop on Searching and Mining Large Collections of Geospatial Data, online

2021   Li, D., and **Zhang**, Z. Urban Computing Cyberinfrastructure: Visualizing Human Sentiment using social media and Augmented Reality. The 4th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities, online

2021   Alizadeh, B., Li, D., **Zhang**, Z. and Behzadan, A.H. Feasibility Study of Urban Flood Mapping using Traffic Signs for Route Optimization. Location: Berlin, Germany, EG-ICE 2021 workshop on intelligent computing in Engineering, Berlin, Germany

2021   **Zhang**, Z. A Collaborative Spatial Decision Support System for Flood Emergency Management. Texas A&M PRIMR conference, College Station

2020   **Zhang**, Z. Multiscale Geographically Weighted Regression: The Analysis of Spatially Varying Patterns of Electric Vehicle Adoption. AAG Annual Meeting, online

2020   **Zhang**, Z. CyberGIS Enabled Decision Support Systems for Disaster Management, UCGIS Symposium, online

2019   **Zhang**, Z. A CyberGIS-enabled Multi-criteria Spatial Decision Support System: a Case Study on Flood Emergency Management. AAG Annual Meeting, Washington DC

2019   **Zhang**, Z. A Data-driven Approach to Identify Rainfall Derived Inflow and Infiltration in Sanitary Sewer Sub-catchments. AGU annual meeting, San Francisco

2019   **Zhang**, Z. Frontiers in Geospatial Data Science, Texas A&M GIS Day, College Station

2018   **Zhang**, Z. High Resolution Remote Sensing based Ecological Indicators for Evaluating Urban Ecological Quality. AAG Annual Meeting, New Orleans

2018   **Zhang**, Z. A Spatiotemporal Population Model for Emergency Management based on social media and Urban Infrastructure Data. AAG Annual Meeting, New Orleans

11. PROFESSIONAL MEMBERSHIP

2023 – Pres.	Lifetime member, Cartography and Geographic Information Society
2023 – Pres.	Gulf of America Coastal Ocean Observing System, Voting Member
2022 – Pres.	United States Research Software Engineer Association, Member
2017 – Pres.	AAG, Member
2020 – Pres.	Spatial Decision Support Consortium, Member
2020 – Pres.	American Association for the Advancement of Science (AAAS), Member
2020 – Pres.	Association for Computing Machinery (ACM), Member
2019 – Pres.	Institute of Electrical and Electronics Engineers (IEEE), Member
2019 – Pres.	IEEE Computational Intelligence Society, Member
2019 – Pres.	International Society for Photogrammetry and Remote Sensing (ISPRS), Member
2019 – Pres	American Association of University Women (AAUW), Member