

YUJIE HU

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RESEARCH AND TEACHING INTERESTS

Subjects: Transportation; human mobility and accessibility; public health; crime; human-environment interactions
Methods: GIS; spatial modeling and analysis; spatial statistics; simulation; optimization; Remote Sensing

EDUCATION

2016. Ph.D. (Geography) Louisiana State University, USA
2012. M.S. (Cartography and Geographic Information Systems) East China Normal University, China
2009. B.S. (Geographic Information Systems) North China University of Water Resources and Electric Power, China

ACADEMIC APPOINTMENTS & AFFILIATIONS

2017 – present **Assistant Professor of GIScience**, School of Geosciences, University of South Florida, USA
2017 – present **Fellow**, Kinder Institute for Urban Research, Rice University, USA
2016 – 2017 **Research Fellow**, Kinder Institute for Urban Research, Rice University, USA
2012 – 2016 **Research Assistant**, Department of Geography and Anthropology, Louisiana State University, USA
2011 – 2012 **Research Scholar**, Department of Geography, University of Utah, USA
2010 – 2011 **Teaching Assistant**, School of Geographic Sciences, East China Normal University, China

PUBLICATIONS

Book

2019. Hu, Y. and Wang, F. *GIS-Based Simulation and Analysis of Intra-Urban Commuting*. Boca Raton, FL: CRC Press.

Peer-refereed Journals

2019. Hu, Y. and Downs, J. "Measuring and Visualizing Space-Time Job Accessibility." *Journal of Transport Geography* 74: 278-288.
2018. Hu, Y., Zhang, Y., and Shelton, K. S. "Where are the Dangerous Intersections for Pedestrians and Cyclists: A Colocation-Based

- Approach." **Transportation Research Part C: Emerging Technologies** 95: 434-441.
2018. Hu, Y., Wang, F., Guin, C., and Zhu, H. "A Spatio-Temporal Kernel Density Estimation Framework for Predictive Crime Hotspot Mapping and Evaluation." **Applied Geography** 99: 89-97.
2018. Hu, Y., Wang, F., and Xierali, I. "Automated Delineation of Hospital Service Areas and Hospital Referral Regions by Modularity Optimization." **Health Services Research** 53(1): 236-255.
2017. Hu, Y., Wang, F., and Wilmot, C. G. "Commuting Variability by Wage Groups in Baton Rouge 1990-2010." **Papers in Applied Geography** 3(1): 14-29.
2017. Wang, F., Hu, Y., Wang, S., and Li, X. "Local Indicator of Colocation Quotient with a Statistical Significance Test: Examining Spatial Association of Crime and Facilities." **The Professional Geographer** 69(1): 22-31.
2017. Xu, T., Xu, X., Hu, Y., and Li, X. "An Entropy-Based Approach for Evaluating Travel Time Predictability Based on Vehicle Trajectory Data." **Entropy** 19(4), 165.
2016. Hu, Y. and Wang, F. "Temporal trends of intraurban commuting in Baton Rouge 1990-2010." **Annals of the American Association of Geographers** 106(2): 470-479.
2015. Hu, Y. and Wang, F. "Decomposing excess commuting: a Monte Carlo simulation approach." **Journal of Transport Geography** 44: 43-52.
2015. Ikram, S., Hu, Y., and Wang, F. "Disparities in spatial accessibility of pharmacies in Baton Rouge, Louisiana." **Geographical Review** 105(4): 492-510.
2014. Hu, Y., Miller, H. J., and Li, X. "Detecting and Analyzing Mobility Hotspots using Surface Networks." **Transactions in GIS** 18(6): 911-935.
2014. Liu, L., Wang, D., Deng, H., Li, Y., Chang, S., Wu, Z., Yu, L., Hu, Y., Yu, Z., and Chen, Z. "The capability of estuarine sediments to remove nitrogen: implications for drinking water resource in Yangtze Estuary." **Environmental Science and Pollution Research** 21(18): 10890-10899.
2013. Li, X., Hu, Y., Xie, J., and Sun, J. "An efficient approach to building image-based road network model." **Annals of GIS** 19(4): 209-217.
2012. Xu, X., Li, X., Hu, Y., and Peng, Z. "A novel algorithm to identifying vehicle travel path in elevated road area based on GPS trajectory data." **Frontiers of Earth Science** 6(4): 354-363.
2010. Hu, Y. and Li, X. "Find a center's service area of a geographic network by the shortest path algorithm (in Chinese with English abstract)."

Geography and Geo-Information Science 26(3): 111-112.

Book Chapters

2017. Hu, Y. and Wang, F. "Temporal Trends of Intraurban Commuting in Baton Rouge, 1990–2010," in ***Geographies of Mobility: Recent Advances in Theory and Method*** (eds., M. Kwan and T. Schwanen) New York: Routledge.
2015. Hu, Y. and Wang, F. "Monte Carlo Method and Application in Urban Traffic Simulation," in ***Quantitative Methods and Socioeconomic Applications in GIS*** (2nd ed.) Boca Raton, FL: Taylor & Francis.

Conference Proceedings

2018. Ye, J., Hu, Y., Xu, X., Yi, H., and Li, X. "Evaluate Errors of 1-median Model: A Case Study in Spring Hill, FL, US," In *Proceedings of the 26th International Conference on Geoinformatics*, IEEE, pp. 1-6.
2018. Chen, Q., Yi, H., Hu, Y., Xu X., and Li, X. "A New Method of Selecting K-means Initial Cluster Centers Based on Hotspot Analysis," In *Proceedings of the 26th International Conference on Geoinformatics*, IEEE, pp. 1-6.
2011. Hu, Y., Li, X., Xie, J., and Guo, L. "A novel approach to extracting street lamps from vehicle-borne laser data." In *Proceedings of the 19th International Conference on Geoinformatics*, IEEE, pp. 1-6.
2010. Hu, Y., Li, X., and Li, M. "A novel approach to delineating the service area of facilities in a network." In *Proceedings of the 2nd International Conference on Future Computer and Communication (ICFCC)*, IEEE, vol. 2, pp. V2-35.

Research Reports

2018. Wu, J., Hu, Y., Zhang, M., and Patterson, G. "Assessing Opportunity: Employment and Commuting Patterns among Low-, Medium- and High-wage Workers in Houston." *Rice University: Kinder Institute for Urban Research*, October.
2017. Hu, Y. and Shelton, K. "Dangerous Crossings: The Relationship Between Intersections and Crashes in Houston." *Rice University: Kinder Institute for Urban Research*, June.

Under Review

2018. Balomenos G., Hu, Y., Padgett, J., and Shelton, K. "Impact of Coastal Hazards on Residents' Spatial Accessibility to Health Services." ***Journal of Infrastructure Systems***.

PRESENTATIONS AT PROFESSIONAL CONFERENCES

2018. "Where are the Dangerous Intersections for Pedestrians and Cyclists:

- A Colocation-Based Approach." *SEDAAG Annual Meeting 2018*, Johnson City, Tennessee, November 18.
2018. "Temporal Trends of Intraurban Commuting Patterns and Efficiency in Baton Rouge 1990-2010." *AAG Annual Meeting 2018*, New Orleans, Louisiana, April 11.
2017. "Decomposing Excess Commuting: A Monte Carlo Simulation Approach." *AAG Annual Meeting 2017*, Boston, Massachusetts, April 6.
2016. "Local Indicator of Colocation Quotient with a Statistical Significance Test: Examining Spatial Association of Crime and Facilities." *AAG Annual Meeting 2016*, San Francisco, California, April 1.
2016. "Delineation of Hospital Service Areas and Hospital Referral Regions by Modularity Optimization." *AAG Annual Meeting 2016*, San Francisco, California, March 30.
2015. "Place-Based Commuting Variability by Wage Groups in Baton Rouge 1990-2010." *AAG Annual Meeting 2015*, Chicago, Illinois, April 25.
2014. "Using Monte Carlo Simulation to Estimate Travel Demand and Excess Commuting." *SASHTO 2014*, New Orleans, Louisiana, August 25.
2013. "Storm Surge Simulation with LiDAR Digital Elevation Model – a Hydrologically Enforced Approach." *the 29th Annual Louisiana Remote Sensing and GIS Workshop*, Lafayette, Louisiana, April 23.
2011. "A Novel Approach to Extracting Street Lamps from Vehicle-Borne Laser Data." *the 19th International Conference on Geoinformatics*, Shanghai, China, June 25.
2010. "A Novel Approach to Delineating the Service Area of Facilities in Network." *the 2nd International Conference on Future Computer and Communication*, Wuhan, China, May 22.

PRESENTATIONS AT WORKSHOPS

2017. Panelist, "Dangerous Crossings: The Relationship Between Intersections and Crashes in Houston." NNIP Idea Showcase, Urban Institute, July 20.
2017. "Examining the Colocation Patterns between Traffic Crashes and Intersections." The Center for Texas Beaches and Shores Workshop at Texas A&M University, Galveston, Texas, March 2.

INVITED TALKS

2018. "Where are the Dangerous Intersections for Pedestrians and Cyclists: A Colocation-Based Approach." Transportation Research Seminar, Center for Urban Transportation Research, University of South Florida, March 2.

GRANTS AND FUNDING

Awarded

- 2018 – 2020. "A multistep method for extending the hurricane record back in time to obtain more representative return period calculations for East Florida coastal communities," *Florida Sea Grant*, \$193,061 (PI – Muller, J. and Collins, J. M., Senior Personnel – Hu, Y.).
- 2017 – 2019. "Automated Delineation of Cancer Service Areas," the National Cancer Institute (NCI), *National Institutes of Health (NIH)*, Grant No. 1R21CA212687-01A1, \$392,344 (PI – Onega, T. and Wang, F., Consultant – Hu, Y.).
2015. *AAG International Geographic Information Fund Student Travel Grants*, The Association of American Geographers, \$500 (PI – Hu, Y.).
- 2012 – 2016. Graduate Student Fellowship from Louisiana Board of Regents.
- 2011 – 2012. *Graduate Student Overseas Study Fund* for visiting the University of Utah, East China Normal University, \$4,000 (PI – Hu, Y.).

Under Review

- 2019 – 2020. "Incorporating mixed automated vehicle traffic in capacity analysis and system planning decisions," the *Center for Transportation Equity, Decisions and Dollars (CTEDD) SEED Grant*, \$35,000 (PI – Li, X., Co-PI – Hu, Y.).
- 2018 – 2020. "CC* Networking Infrastructure: Building A Software Defined Networking-Enabled Infrastructure to Advance Science Research," the *National Science Foundation (NSF)*, \$456,902 (PI – Xiong, K., Senior Personnel – Hu, Y.).

Unawarded

- 2018 – 2021. "SCC: A Synergistic Approach Towards a Resilient Smart & Connected Coastal Community using Spatial Integrated Modeling and Analysis of Infrastructures," the *National Science Foundation (NSF)*, (PI – Naeini, M. R., Co-PI – Buckman, S., Hu, Y., Kwon, C., and Uysal, I.)
- 2018 – 2021. "Capacity-flow based integrated recovery and mitigation framework for resilient transportation infrastructure system," the *National Science Foundation (NSF)*, \$324,880 (PI – Zhang, Y., Co-PI – Hu, Y. and Zhao, T.).
- 2018 – 2019. "Promoting Equal Accessibility to Bike-sharing Systems for Improving Community Health and Shrinking Food Deserts," the *Center for Transportation, Environment, and Community Health (CTECH) New Research Initiatives Fund*, \$62,315 (PI – Kwon, C., Co-PI – Hu, Y. and Charkhgard, H.).
- 2018 – 2020. "Establishing the first comprehensive mapping and management framework for marine Mollusca of the west Florida shelf ecosystem,"

- the *Gulf of Mexico Alliance*, \$114,997 (PI – Herbert, G., Co-PI – Hu, Y. and Geiger, S.).
- 2018 – 2019. “Multilevel Modeling Approach to Identifying Alcohol Impaired Driving Risks in Louisiana,” *Louisiana Transportation Research Center*, \$175,000 (PI – Wang, F., Co-PI – Hu, Y. and Guin, C.).
- 2018 – 2020. “Behavioral drivers and barriers to deep decarbonization in Houston,” the *Science to Achieve Results (STAR) Program* in the U.S. Environmental Protection Agency (EPA), \$899,856 (PI – Cohan, D., Co-PI – Hu, Y., Stadler, L., Sintov, N., Webber, M. E., and Dillingham, G.).
- 2017 – 2020. “Research and Education of Able Communities under Hazards (REACH),” the *National Science Foundation (NSF)*, \$985,117 (PI – Duenas-Osorio, L., Co-PI – Wilson, R., Subramanian, D., and Stein, R., Senior Personnel – Hu, Y.).
- 2016 – 2017. “Delineation and evaluation of hurricane evacuation zones,” *Transportation Innovation for Research Exploration (TIRE)*, Louisiana Transportation Research Center, \$30,000 (PI – Hu, Y., Co-PI – Wang, F.).

TEACHING

- 2018 Fall. **Instructor**, School of Geosciences, University of South Florida, USA
-GIS 6307: Socioeconomic Applications of GIS
- 2018 Fall. **Instructor**, School of Geosciences, University of South Florida, USA
-GIS 4043C: Geographic Information Systems
- 2018 Spring. **Instructor**, School of Geosciences, University of South Florida, USA
-GIS 4043C: Geographic Information Systems
- 2017 Fall. **Instructor**, School of Geosciences, University of South Florida, USA
-GIS 4043C: Geographic Information Systems
2015. **Guest Lecture**, Department of Geography and Anthropology, Louisiana State University, USA
-GEOG 4047: Geographic Information Systems
-GEOG 7945: Socio-Economic Applications of GIS
2011. **Teaching Assistant**, School of Geographic Sciences, East China Normal University, China
-Advanced Geographic Information Systems

HONORS AND AWARDS

2016. William Haag Graduate Award, Department of Geography and Anthropology, Louisiana State University
2016. Student Travel Award, Urban Geography Specialty Group, The Association of American Geographers
2014. Outstanding Graduate Student Research Award, Southeastern

2014. Association of State Highway and Transportation Officials (SASHTO)
Graduate Student Research Paper Award, East China Normal
University
2011. Excellent Graduate Student Fellowship, East China Normal University
2010. Graduate Student Scholarship, East China Normal University
2008. National Scholarship of China

MEDIA REPORT

- 2017: "New study finds intersections with stoplights more likely to see
deadly crashes" - *abc13 EYEWITNESS NEWS at 6PM* (TV).
<http://abc13.com/news/intersections-with-stoplights-likely-to-see-crashes/2087712/>
- 2017: "Study: Intersections With Traffic Lights Are Nine Times More
Dangerous," – *Houston Public Media News 88.7* (radio).
<https://www.houstonpublicmedia.org/articles/news/2017/07/12/221185/study-intersections-with-traffic-lights-are-nine-times-more-dangerous/>

SERVICE

Editorial Service

Co-editor of special issue "Accessibility and Transportation Equity." *Sustainability*, 2019,
ongoing.

Invited Journal Reviewer

ACTA POLYTECHNICA, Journal of Advanced Engineering
Acta Tropica
Annals of GIS
Cities
Computers, Environment and Urban Systems
Data-Enabled Discovery and Applications
Environmental Monitoring and Assessment
Frontiers of Earth Science
GeoJournal
Geographical Research
Growth and Change: A Journal of Urban and Regional Policy
International Journal of Computational Intelligence Techniques
International Journal of Environmental Research and Public Health
International Journal of Sustainable Transportation
International Regional Science Review
Journal of Regional Science
Journal of Transport Geography

Papers in Applied Geography
Physica A: Statistical Mechanics and its Applications
PLOS ONE
Transactions in GIS

Invited Book Reviewer

CRC Press

Invited Grant Reviewer

BTI (Borders, Trade, and Immigration) Institute Proposal Review

Professional Organizations

- 2018 – present Board Member, Transportation Geography Specialty Group, American Association of Geographers
- 2015 – present Member, American Association of Geographers
- 2017 – present Member, American Association for the Advancement of Science
- 2018 – present Member, International Association of Chinese Professionals in Geographic Information Sciences
- 2018 – present Member, Southeastern Division of the American Association of Geographers

Department Service

- 2017 – present Graduate Committee
- 2017 – 2018 Assistant Professor of GIScience Search Committee
- 2018 – present GIScience Committee

Chaired PhD Committees

- In progress Shakhawat Hosen Tanim, Geography and Environmental Science and Policy (Co-advise with Dr. Steven Reader)

Membership on PhD Committees

- In progress Michelle Saunders, Geography and Environmental Science and Policy
- In progress Semiha Ahmedova, Geography and Environmental Science and Policy
- In progress Nigel Joseph, Geography and Environmental Science and Policy
- In progress Nodjidoumde Mbaigoto, Geography and Environmental Science and Policy
- In progress Lubana Mazumder, Geography and Environmental Science and Policy
- In progress Jeff Burton, Geography and Environmental Science and Policy
- In progress Osen Pongen, Geography and Environmental Science and Policy
- In progress Zulqarnain Haider, Industrial Engineering

Chaired Master's Committees

- In progress Bailey Glover, Environmental Science and Policy
- In progress Nicole Seiden, Environmental Science and Policy (Co-advise with Dr. Gregory Herbert)

Membership on Master's Committees

In progress Christianne Pearce, Environmental Science and Policy

In progress Courtney Buck, Environmental Science and Policy