YUJIE HU

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RESEARCH AND TEACHING INTERESTS

Subjects: Human mobility and accessibility; transportation; health services research; crime
Methods: GIS; network science; machine learning; spatial modeling and analysis

EDUCATION

2016	Ph.D., Geography, Louisiana State University
2012	M.S., Cartography and GIS, East China Normal University
2009	B.S., GIS, North China University of Water Resources and Electric Power

PROFESSIONAL APPOINTMENTS

2019 – present	Assistant Professor, Department of Geography, University of Florida
2019 – present	Affiliate Faculty, UF Informatics Institute, University of Florida
2019 – present	Affiliate Faculty, UF Transportation Institute, University of Florida
2017 – 2019	Assistant Professor, School of Geosciences, University of South Florida
2016 – 2017	Research Fellow, Kinder Institute for Urban Research, Rice University
2012 – 2016	Research Assistant, Department of Geography & Anthropology, Louisiana State University
2011 – 2012	Research Scholar, Department of Geography, University of Utah

FELLOWSHIPS, HONORS, AND AWARDS

2019 – 2020	Ralph E. Powe Junior Faculty Enhancement Awards, Oak Ridge Associated Universities
2017 – 2022	Fellow, Kinder Institute for Urban Research, Rice University
2016	William Haag Graduate Award, Department of Geography & Anthropology, Louisiana State University
2016	Student Travel Award, Urban Geography Specialty Group, American Association of Geographers
2014	Outstanding Graduate Student Research Award, Southeastern Association of State Highway and Transportation Officials
2014	Graduate Student Research Paper Award, East China Normal University
2011	Excellent Graduate Student Fellowship, East China Normal University

GRANTS

06/22/2020 – 12/22/2020	PI, *Socioeconomic Impacts of COVID-19: A Criminological Perspective*, UFII COVID-19 Response Seed Funding, $20,000
08/16/2019 – 05/31/2020	PI, *Automated Delineation of Hospital Service Areas and Hospital Referral Regions*, Oak Ridge Associated Universities, $10,000

| 02/15/2019 – 02/14/2020 | Co-PI, *Incorporating mixed automated vehicle traffic in capacity analysis and system planning decisions*, CTEDD: Center for Transportation Equity, Decisions and Dollars, US DOT, $35,000 |
| 09/01/2017 – 08/31/2018 | Consultant, *Automated Delineation of Cancer Service Areas*, The National Cancer Institute (NCI), National Institutes of Health (NIH), 1R21CA212687-01A1, $10,000 |

PUBLICATIONS

Book

1. Hu, Y. & Wang, F. (2018). *GIS-Based Simulation and Analysis of Intra-Urban Commuting*. Boca Raton, FL: **CRC Press**.

Peer-Refereed Journal Articles

2. Hu, Y. (2022). The unequal commute: Comparing commuting patterns across income and racial worker subgroups. ***Environment and Planning A: Economy and Space***, *54*(3), 437-440.

3. Jing, Y., & Hu, Y. (2022). The unequal commuting efficiency: A visual analytics approach. ***Journal of Transport Geography***, *100*, 103328.

4. Haider, Z., Hu, Y., Charkhgard, H., Himmelgreen, D., & Kwon, C. (2022). Creating grocery delivery hubs for food deserts at local convenience stores via spatial and temporal consolidation. ***Socio-Economic Planning Sciences***, *82*, 101301.

5. Bohnett, E., Vacca, R., Hu, Y., Hulse, D., & Varda, D. (2022). Resilience and fragmentation in healthcare coalitions: The link between resource contributions and centrality in health-related interorganizational networks. ***Social Networks***, *71*, 87-95.

6. Tanim, S. H., Wiernik, B. M., Reader, S., & Hu, Y. (2022). Predictors of hurricane evacuation decisions: A meta-analysis. ***Journal of Environmental Psychology***, *79*, 101742.

7. Hu, Y. & Li, X. (2021). Modeling and analysis of excess commuting with trip chains. ***Annals of the American Association of Geographers***, *111*(6), 1851-1867.

8. Huang, J., Hu, Y., Wang, J., & Li, X. (2021). A tale of two cities: Jobs–housing balance and urban spatial structures from the perspective of transit commuters. ***Environment and Planning B: Urban Analytics and City Science***, *48*(6), 1543-1557.

9. Wang, D., White, J. R., Delaune, R. D., Yu, Z., & Hu, Y. (2021). Peripheral freshwater deltaic wetlands are hotspots of methane flux in the coastal zone. ***Science of The Total Environment***, *775*, 145784.

10. Zhang, F., Fan, Z., Kang, Y., Hu, Y., & Ratti, C. (2021). "Perception bias": Deciphering a mismatch between urban crime and perception of safety. ***Landscape and Urban Planning***, *207*, 104003.

11. Mardini, M. T., Nerella, S., Kheirkhahan, M., Ranka, S., Fillingim, R. B., Hu, Y., ... & Manini, T. M. (2021). The Temporal Relationship Between Ecological Pain and Life-Space Mobility in Older Adults With Knee Osteoarthritis: A Smartwatch-Based Demonstration Study. ***JMIR mHealth and uHealth***, *9*(1), e19609.

12. Downs, J., Buck, C., Qarah, F., & Hu, Y. (2020). Spatial analysis of potential nesting habitat for Florida sandhill cranes. ***Journal of Fish and Wildlife Management***, *11*(2), 443-454.

13. Hu, Y., Wang, C., Li, R., & Wang, F. (2020). Estimating a large drive time matrix between ZIP codes in the United States: A differential sampling approach. *Journal of Transport Geography*, *86*, 102770.

14. Niedzielski, M. A., Hu, Y., & Stępniak, M. (2020). Temporal dynamics of the impact of land use on modal disparity in commuting efficiency. *Computers, Environment and Urban Systems*, *83*, 101523.

15. Zhu, Y. J., Hu, Y., & Collins, J. M. (2020). Estimating road network accessibility during a hurricane evacuation: A case study of hurricane Irma in Florida. *Transportation Research Part D: Transport and Environment*, *83*, 102334.

16. Wang, F., Wang, C., Hu, Y., Weiss, J., Alford-Teaster, J., & Onega, T. (2020). Automated delineation of cancer service areas in northeast region of the United States: a network optimization approach. *Spatial and Spatio-temporal Epidemiology*, *33*, 100338.

17. Antipova, A., Sultana, S., Hu, Y., & Rhudy, J. P. (2020). Accessibility and Transportation Equity. *Sustainability*, *12*, 3611.

18. Balomenos, G. P., Hu, Y., Padgett, J. E., & Shelton, K. (2019). Impact of Coastal Hazards on Residents' Spatial Accessibility to Health Services. *Journal of Infrastructure Systems*, *25*(4): 04019028.

19. Hu, Y., Zhang, Y., Lamb, D., Zhang, M., & Jia, P. (2019). Examining and optimizing the BCycle bike-sharing system – A pilot study in Colorado, US. *Applied Energy*, *247*: 1-12.

20. Hu, Y. & Downs, J. (2019). Measuring and Visualizing Place-Based Space-Time Job Accessibility. *Journal of Transport Geography*, *74*: 278-288.

21. Hu, Y., Wang, F., Guin, C., & Zhu, H. (2018). A Spatio-Temporal Kernel Density Estimation Framework for Predictive Crime Hotspot Mapping and Evaluation. *Applied Geography*, *99*: 89-97.

22. Hu, Y., Zhang, Y., & Shelton, K. S. (2018). Where are the Dangerous Intersections for Pedestrians and Cyclists: A Colocation-Based Approach. *Transportation Research Part C: Emerging Technologies*, *95*: 434-441.

23. Hu, Y., Wang, F., & Xierali, I. (2018). Automated Delineation of Hospital Service Areas and Hospital Referral Regions by Modularity Optimization. *Health Services Research*, *53*(1): 236-255.

24. Xu, T., Xu, X., Hu, Y., & Li, X. (2017). An entropy-based approach for evaluating travel time predictability based on vehicle trajectory data. *Entropy*, *19*(4), 165.

25. Hu, Y., Wang, F., & Wilmot, C. G. (2017). Commuting variability by wage groups in Baton Rouge, 1990–2010. *Papers in Applied Geography*, *3*(1), 14-29.

26. Wang, F., Hu, Y., Wang, S., & Li, X. (2017). Local Indicator of Colocation Quotient with a Statistical Significance Test: Examining Spatial Association of Crime and Facilities. *The Professional Geographer*, *69*(1): 22-31.

27. Hu, Y., & Wang, F. (2016). Temporal trends of intraurban commuting in Baton Rouge, 1990–2010. *Annals of the American Association of Geographers*, *106*(2), 470-479.

28. Ikram, S. Z., Hu, Y., & Wang, F. (2015). Disparities in spatial accessibility of pharmacies in Baton Rouge, Louisiana. *Geographical Review*, *105*(4), 492-510.

29. Hu, Y., & Wang, F. (2015). Decomposing excess commuting: A Monte Carlo simulation approach. *Journal of Transport Geography*, *44*, 43-52.

30. Hu, Y., Miller, H. J., & Li, X. (2014). Detecting and analyzing mobility hotspots using surface networks. *Transactions in GIS*, *18*(6), 911-935.

31. Liu, L., Wang, D., Deng, H., Li, Y., Chang, S., Wu, Z., ... & Chen, Z. (2014). 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.

32. Li, X., Hu, Y., Xie, J., & Sun, J. (2013). An efficient approach to building image-based road network model. *Annals of GIS*, *19*(4), 209-217.

33. Xu, X., Li, X., Hu, Y., & Peng, Z. (2012). 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.

34. Hu, Y. & Li, X. (2010). 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

35. Hu, Y. & Reader, S. (2019). GIS and Health. In B. Warf (Ed.). *Oxford Bibliographies in "Geography"*. New York: Oxford University Press. DOI: 10.1093/obo/9780199874002-0211.

36. Hu, Y. & Wang, F. (2017). Temporal Trends of Intraurban Commuting in Baton Rouge, 1990–2010. In M. Kwan & T. Schwanen (Eds.). *Geographies of Mobility: Recent Advances in Theory and Method*. New York: Routledge.

37. Hu, Y. & Wang, F. (2015). Monte Carlo Method and Application in Urban Traffic Simulation. In F. Wang (Ed.). *Quantitative Methods and Socioeconomic Applications in GIS* (2nd ed.). Boca Raton, FL: Taylor & Francis.

Peer-refereed Conference Proceedings

38. Chen, Q., Yi, H., Hu, Y., Xu, X., & Li, X. (2018, June). A New Method of Selecting K-means Initial Cluster Centers Based on Hotspot Analysis. In *2018 26th International Conference on Geoinformatics* (pp. 1-6). IEEE.

39. Ye, J., Hu, Y., Xu, X., Yi, H., & Li, X. (2018, June). Evaluate Errors of 1-median Model: A Case Study in Spring Hill, FL, US. In *2018 26th International Conference on Geoinformatics* (pp. 1-6). IEEE.

40. Hu, Y., Li, X., Xie, J., & Guo, L. (2011, June). A novel approach to extracting street lamps from vehicle-borne laser data. In *2011 19th International Conference on Geoinformatics* (pp. 1-6). IEEE.

41. Hu, Y., Li, X., & Li, M. (2010, May). A novel approach to delineating the service area of facilities in a network. In *2010 2nd International Conference on Future Computer and Communication* (Vol. 2, pp. V2-35). IEEE.

Research Reports

42. Wu, J., Hu, Y., Zhang, M., & Patterson, G. (2018). Accessing Opportunity: Employment and Community Patterns among Low-, Medium-, and High-Wage Workers in Houston. *Rice University: Kinder Institute for Urban Research*, October.

43. Hu, Y., & Shelton, K. (2017). Dangerous Crossings: The Links Between Intersections and Crashes in Houston. *Rice University: Kinder Institute for Urban Research*, June.

PRESENTATIONS AT PROFESSIONAL CONFERENCES

2021   *Automated Delineation of Hospital Service Areas and Hospital Referral Regions by Modularity Optimization.* Networks 2021: A Joint Sunbelt and NetSci Conference, virtual, July 6.

2021   *Automated Delineation of Hospital Service Areas and Hospital Referral Regions by Modularity Optimization.* The 28th International Conference on Geoinformatics, virtual, November 1.

2019   *Where are the Dangerous Intersections for Pedestrians and Cyclists: A Colocation-Based Approach.* The 49th Urban Affairs Association Annual Conference, Los Angeles, California, April 25.

2019   *Where are the Dangerous Intersections for Pedestrians and Cyclists: A Colocation-Based Approach.* AAG Annual Meeting 2019, Washington DC, April 3.

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   *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

2021 *Constructing Optimal Geographic Units for Health Care Markets.* Department of Geography Seminar Series, Florida State University, October 15, 2021.

2020 *Examining the relationship between COVID-19 and crime—A pilot study in Florida.* UFII COVID-19 SEED Awardees Virtual Seminar Series, University of Florida, December 5, 2020.

2019 *Detecting the Dangerous Intersections for Pedestrians and Cyclists using GIS.* Institute of Transportation Engineers Seminar, University of Florida, October 24.

2019 *Socio-Economic Applications of GIS.* International Center for Adaption Planning and Design Seminar, University of Florida, September 27.

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.

TEACHING

University of Florida

GIS4113/6104 Spatial Networks (Fall 2019, Fall 2020, Fall 2021)

GEO3602 Urban/Business Geography (Spring 2020, Spring 2021, Spring 2022)

GEO4700/6938 Transportation Geography (Fall 2020)

GEO3502 Economic Geography (Fall 2021; invited lecturer)

University of South Florida

GIS4043C Geographic Information Systems (Fall 2017, Spring 2018, Fall 2018, Spring 2019)

GIS6307 Socioeconomic Applications of GIS (Fall 2018)

TTE4005 Transportation Engineering II (Spring 2019; invited lecturer)

Louisiana State University

GEOG7945 Socio-Economic Applications of GIS (Fall 2015; invited lecturer)

SERVICE

Professional Service

2020 – present Committee Member, T&DI (Transportation & Development Institute) Technical Committee on Artificial Intelligence, American Society of Civil Engineers

2018 – 2022 Board Member, Transportation Geography Specialty Group, American Association of Geographers

2020 – 2021 Newsletter Editorial Committee, International Association of Chinese Professionals in Geographic Information Sciences

Editorial Service

2022 – present Editorial board member of *Humanities & Social Sciences Communications*

2020 – present Editorial board member of *Southeastern Geographer*

2019 Guests-editor of special issue "Accessibility and Transportation Equity" in *Sustainability*

Ad Hoc Reviewer

Grants & Awards

Borders, Trade, and Immigration (BTI) Institute

National Institute for Congestion Reduction (NICR)

Oak Ridge Associated Universities (ORAU) Ralph E. Powe Junior Faculty Award

Research Grants Council (RGC) of Hong Kong

The John Odland Competition of AAG Spatial Analysis & Modeling (SAM) Specialty Group

University of Florida Informatics Institute (UFII) COVID-19 SEED Fund Program

<u>Scientific Journals</u>

Acta Polytechnica

Acta Tropica

Annals of the American Association of Geographers

Annals of GIS

Applied Geography

Applied Spatial Analysis and Policy

BMJ Global Health

Cities

Computers, Environment and Urban Systems

Data-Enabled Discovery and Applications

Environment and Planning B: Urban Analytics and City Science

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 Maps

Journal of Regional Science

Journal of Transport Geography

Landscape and Urban Planning

Papers in Applied Geography

Physica A: Statistical Mechanics and its Applications

PLOS ONE

Preventing Chronic Disease

Research in Transportation Business & Management

Scientific Reports

Singapore Journal of Tropical Geography

Socio-Economic Planning Sciences

Southeastern Geographer

Sustainable Cities and Society

Sustainability Science

The Professional Geographer

Transactions in GIS

Transportation

Transportation Research Board Annual Meeting

Transportation Research Part D: Transport and Environment

Transportation Research Record

Travel Behaviour and Society

Urban Geography

地理科学 (Scientia Geographica Sinica)

地理研究 (Geographical Research)

Book Publishers

CRC Press

Routledge Press

Conference Session Organizer/Chair

2019   Organizer and chair, *Travel and the built environment* session, AAG Annual Meeting 2019, Washington DC, April 3-7.

2019   Organizer, *Accessibility and the journey-to-work* session, AAG Annual Meeting 2019, Washington DC, April 3-7.

External Service

2019   External reviewer for the University of Memphis Earth Sciences' Major Field Test

University Service

2020 – present   Faculty mentor of the University Multicultural Mentor Program (UMMP) at UF

Department Service

University of Florida

2021 – present   AI & Program Development Committee

2021 – present   Social Media Committee

2019 – present   Graduate Admissions Committee

2022   Grad Recruitment Weekend Committee

2021   Social Media Co-coordinator

2021   Assistant Professor of Medical Geography in Global Health Search Committee

2021   Assistant Professor of Atmospheric and Climate Science Search Committee

2020 – 2021   Faculty Marshal

2019 – 2020   Development Geospatial Sciences Discussion Ad-hoc Committee

2019 – 2020   Awards Committee

2019   Participate in Undergraduate Research Expo

University of South Florida

2018 – 2019	GIScience Ad-hoc Committee
2017 – 2019	Graduate Admissions Committee
2017 – 2018	Assistant Professor of GIScience Search Committee

Chaired PhD Committees

<u>University of Florida</u>

Jing Yue, Geography (in progress)

<u>University of South Florida</u>

Shakhawat Hosen Tanim, Geography (co-advise with Dr. Steven Reader; serving 2017 – 2021)

Membership on PhD Committees

<u>University of Florida</u>

Charles Grigsby-Calage, Food and Resource Economics (in progress)

Ammar Mandourah, Geomatics @ Fort Lauderdale (in progress)

Yuting An, Tourism, Hospitality, and Event Management (in progress)

Luwei Wang, Urban and Regional Planning (in progress)

Bailey Glover, Geography (serving 2020 – 2021)

Ruijie Mao, Criminology & Law (serving 2020 – 2021)

<u>University of South Florida</u>

Nigel Joseph, Geography (in progress)

Xiaowei Shi, Civil Engineering (graduated in 2021)

Zulqarnain Haider, Industrial Engineering (graduated in 2020)

Michelle Saunders, Geography (graduated in 2020)

Natalia Barbour, Civil Engineering (graduated in 2019)

Yijie Zhu, Geography (serving 2019 – 2020)

Saurav Chakraborty, Geography (serving 2018 – 2019)

Nodjidoumde Mbaigoto, Geography (serving 2018 – 2019)

Jeff Burton, Geography (serving 2018 – 2019)

Osen Pongen, Geography (serving 2018 – 2019)

<u>Louisiana State University</u>

Cehong Luo, Geography (in progress)

Shaun Williams, Geography (graduated in 2022)

Ya Han, Geography (graduated in 2021)

Chaired Master's Committees

<u>University of Florida</u>

Cade Gouin, Geography (in progress)

<u>University of South Florida</u>

Bailey Glover, Environmental Science and Policy (graduated in 2019)

Membership on Master's Committees

<u>University of Florida</u>

John Newman, Geography (graduated in 2020)

<u>University of South Florida</u>

    Katie Wagner, Environmental Science and Policy (graduated in 2020)

    Christianne Pearce, Environmental Science and Policy (graduated in 2019)

    Courtney Buck, Environmental Science and Policy (graduated in 2019)

    Mathew Bauld, Geography (graduated in 2019)

PROFESSIONAL AFFILICATIONS

American Association of Geographers (2015-)

American Association for the Advancement of Science (2017-)

International Association of Chinese Professionals in Geographic Information Sciences (2018-)

International Network for Social Network Analysis (2020-)

Network Science Society (2020-)

Network on European Communications and Transport Activities Research (2020-2021)

Southeastern Division of the American Association of Geographers (2018-)