

Xiaobai Angela Yao

Curriculum Vitae

212C GGY Bldg, Department of Geography, University of Georgia. Athens, GA, 30602

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ACADEMIC POSITIONS

Professor Department of Geography, University of Georgia, USA. 2016- present
Associate Professor Department of Geography, University of Georgia, USA. 2008-2016
Assistant Professor Department of Geography, University of Georgia, USA. 2002-2008

EDUCATION

Ph.D. Geography, 2002. University at Buffalo, the State University of New York, USA
M.S. GIS and urban analysis, 1997. Twente University (formerly ITC), the Netherlands
B.S. GIS and urban planning, 1990. Wuhan University (formerly WTUSM), China

RESEARCH INTERESTS

Geospatial data science: GIS, spatial statistics, machine learning, network analysis, location-based big data
Subject areas of focus: urban systems, human dynamics, public health

PUBLICATIONS

Books

Jiang, B. and **X. Yao**. (eds) 2010. *Geospatial Analysis and Modelling of Urban Structure and Dynamics*. In GeoJournal Library Book Series. Dordrecht, the Netherlands: Springer. ISBN: 9048185718.

Guest-edited Journal Volumes

Huang, H. **Yao, X.** J. Krisp, B. Jiang. 2020. Geospatial big data for smart cities. Special issue in *Computers, Environment and Urban Systems*.
Yao, X. H. Huang, J. Krisp, B. Jiang. 2019. Representation and Analytical Models for Location-based Social Media Data and Tracking Data. Special Issue in *International Journal of Geographical Information Science*.
Yao, X. and B. Jiang, M. Madden, Y. Liu. 2016. New Insights Gained from Location-based Social Media Data. Special Issue in *Computers, Environment, and Urban Systems*.
Yao, X. and B. Jiang. 2009. Geospatial Modeling of Urban Environments. Special Issue in *Environment and Planning B: Planning and Design*. 36(5).

Journal Articles (graduate advisees underlined)

- Fan Q, X.A. Yao XA, X. Han. 2021 Spatial variation and disparity in female breast cancer relative survival in the United States. *Cancer*. doi: <http://doi.org/10.1002/cncr.33801>.
- Wei, X., **X. Yao**. 2021. Constructing and analyzing spatial-social networks from location-based social media data. *Cartography and Geographic Information Science* 48(3):258-274.
- Tian, Y. **X.Yao**. 2021. Urban form, traffic volume, and air quality: a spatiotemporal stratified approach. *Environment and Planning B: Urban Analytics and City Science*. <https://doi.org/10.1177/2399808321995822>
- Mertzlufft, C. E., M. Madden, N. Gottdenker, J. Runk, A. Saldana, S. Tanner, J. Calzada, **X. Yao**. 2020. Landscape disturbance impacts on *Attalea butyracea* palm distribution in central Panama. *International Journal of Health Geographics* 19, 58(2020). doi:[10.1186/s12942-020-00244-y](https://doi.org/10.1186/s12942-020-00244-y)
- Liu, R., **X.Yao**, C. Guo & X. Wei. 2020. Can we forecast presidential election using twitter data? An integrative modelling approach, *Annals of GIS*, DOI: [10.1080/19475683.2020.1829704](https://doi.org/10.1080/19475683.2020.1829704)
- Tian, Y. **X.Yao**, L. Mu. Q. Fan. Y. Liu. 2020. Integrating meteorological factors for a better understanding of the urban form-air quality relationship. *Landscape Ecology*. 35(10): 2357-2373
- G Liu, **X Yao**, Q. Fan. Agglomeration centrality examination of cities: an urban transport perspective. *Sustainable Cities and Society*, 2020. <https://doi.org/10.1016/j.scs.2020.102273>
- Rickless, D. **Yao, X.** Orland, B. Welch-Devine, M. 2020. Assessing social vulnerability through a local lens: An integrated geovisual approach. *Annals of the American Association of Geographers*. 110(1): 36-66. <https://doi.org/10.1080/24694452.2019.1625750>
- Pei, Y. **X.Yao**, A.Dang. 2019. Child-friendliness of urban neighborhood from a Healthy-City perspective. *Urban Development Studies*. ISSN: 1006-3862. 2019 (4):69-78.
- Mutembo, S., Mutanga, J.N., Musokotwane, K., Kanene, C., Dobbin, K. **X. Yao**, Li, C., Marconi, V.C., Whalen, C. 2019. Urban-rural disparities in treatment outcomes among recurrent TB cases in Southern Province, Zambia. *BMC Infectious Disease* 19, 1087. doi:10.1186/s12879-019-4709-5
- Liu, G. **X. Yao**, Z. Luo, S. Kang, W. Long, Q. Fan, P. Gao. 2019. Agglomeration Centrality to examine spatial scaling law in cities. *Computers, Environment and Urban Systems*. 77:101357. <https://doi.org/10.1016/j.compenvurbsys.2019.101357>
- Yao, X.**, Huang, H., Jiang, B., & Krisp, J. M. 2019. Representation and analytical models for location-based big data. *International Journal of Geographical Information Science*, 33(4): 707-713. doi: [10.1080/13658816.2018.1562068](https://doi.org/10.1080/13658816.2018.1562068)
- Tian, Y. **X. Yao**, L. Chen. 2018. Analysis of spatial and seasonal distributions of air pollutants by incorporating urban morphological characteristics. *Computers, Environment and Urban Systems*. 75:35-48. <https://doi.org/10.1016/j.compenvurbsys.2019.01.003>
- Xi, D. Q. Fan, **X. Yao**, W. Jiang, D. Duan. 2016. A visual salience model for wayfinding in 3D virtual urban environments. *Applied Geography*. 75: 176-187. <http://dx.doi.org/10.1016/j.apgeog.2016.08.014>

- Sahoo K, G.L. Hawkins, **X.A.Yao**, K.Samples, S. Mani. 2016. GIS-based biomass assessment and supply logistics system for a sustainable biorefinery: A case study with cotton stalks in the Southeastern US. *Applied Energy*. 182:260-273. DOI: <http://dx.doi.org/10.1016/j.apenergy.2016.08.114>
- Wei, X. and **X.Yao**. 2015. 3D model construction in an urban environment from sparse LiDAR points and aerial photos – a statistical approach. *Geomatica*. 69(3): 271-284. DOI:10.5623/cig2015-302
- Chen, A., **X.A.Yao**, R.Sun, & L. Chen. 2014. Effect of urban green patterns on surface urban cool islands and its seasonal variations. *Urban Forestry & Urban Greening*. 13(4):646-654.
DOI:10.1016/j.ufug.2014.07.006
- Wei, X. and **X.Yao**. 2014. A Hybrid GWR-Based Height Estimation Method for Building Detection in Urban Environments. *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* 2(2):23-29. DOI: 10.5194/isprsannals-II-2-23-2014
- Wei, X. and **X.Yao**. 2014. Random Walking Value for Ranking Spatial Characteristics in Road Networks. *Geographical Analysis* 46(4):411-434. DOI: 10.1111/gean.12064
- Yao, X.** and S. Zhang. Social-spatial structure of Beijing: a spatial-temporal analysis. 2014. *International Journal of Society System Science* 6(1):18-33. DOI: 10.1504/IJSSS.2014.059923
- Jang, W. and **X.Yao**. 2014. Track Ethnically Divided Commuting Patterns Over Time – Method and a Case Study of Metropolitan Atlanta. *Professional Geographer*. 66(2):274-283. DOI: 10.1080/00330124.2013.784952
- Jang, W. and **X. Yao**. 2011. Interpolating Spatial Interaction Data. *Transactions in GIS*. 15(4):541-555. DOI: 10.1111/j.1467-9671.2011.01273.x
- Coleman, J.B. **X. Yao**, T. Jordan, and M. Madden. 2011. Holes in the Ocean: Filling Voids in Bathymetric Lidar Data. *Computers and Geosciences*. 37 (4):474-484. doi:10.1016/j.cageo.2010.11.008
- Shen, Z., **X.A.Yao**, M. Kawakami, P.Chen. 2011. Simulating spatial market share patterns for impacts analysis of large-scale shopping center on downtown revitalization. *Environment and Planning B: Planning and Design* 38(1):142-162. DOI: 10.1068/b35138
- Kim, H. and **X. Yao**. 2010. Pycnophylactic interpolation revisited: integration with dasymetric method. *International Journal of Remote Sensing*. 31(21):5657-5671. DOI:10.1080/01431161.2010.496805
- Yao, X.** and Jiang, B. 2009. Geospatial Modeling of Urban Environments. Editorial. *Environment and Planning B: Planning and Design*. 36(5):769-771. doi:10.1068/b3605ged
- Yao, X.** and L. Zou. 2008. Interoperable Internet Mapping - An Open Source Approach. *Cartography and Geographic Information Science*. 35(4):279-293. DOI:10.1559/152304008786140560
- Yao, X.** 2007. Where are public transit needed? - Examining potential demand for public transit for commuting trips. *Computers, Environment, and Urban Systems*. 31(5):535-550.
doi:10.1016/j.compenurbsys.2007.08.005
- (Note: The journal article has been invited for reprint in one edited book)

- Yao, X.** and J.C. Thill. 2007. Neuro-Fuzzy Modeling of Context-Contingent Proximity Relations. *Geographical Analysis: An International Journal of Theoretical Geography*. 39(2):169-194. DOI: 10.1111/j.1538-4632.2007.00700.x
- Jiang, B. and **Yao, X.** 2006. Location-Based Services and GIS in Perspective. *Computers, Environment and Urban Systems*. 30(6): 712-725. doi:10.1016/j.compenurbsys.2006.02.003
- Yao, X.** and Thill, J.C. 2006. Spatial Queries With Qualitative Locations In Spatial Information Systems. *Computers, Environment and Urban Systems*. 30(4):485-502. doi:10.1016/j.compenurbsys.2004.08.001
- Yao, X.** and Thill, J.C. 2005. How Far Is Too Far – A Statistical Approach To Proximity Modeling. *Transactions in GIS*. Vol. 9(2): 157-178. DOI: 10.1111/j.1467-9671.2005.00211.x
- Yao, X.** and B. Jiang. 2005. Visualization of Qualitative Locations. *Cartography and Geographic Information Science*. 32(4):219-229. DOI:10.1559/152304005775194683
- Yao, X.** 1993. Analyzing the GIS Data Structures for Urban Planning, *Shanghai Urban Planning* (in Chinese).

Peer-reviewed Book Chapters (graduate advisees underlined)

- Fan, Q., **X.Yao**, A. Dang. 2020. Spatio-temporal Analysis and Data Mining of the 2014-2016 Ebola Virus Disease Outbreak in West Africa. In Y. Lu., & E. Delmelle (Eds.), *Geospatial Technologies for Urban Health*. Springer.
- Wei, X., & **Yao, X. A.** 2018. A Conceptual Framework for Representation of Location-based Social Media Activities. In *10th International Conference on Geographic Information Science (GIScience 2018)*. Melbourne, Australia: Schloss Dagstuhl-Leibniz-Zentrum fuer Informatik. doi:[10.4230/LIPICs.GISCIENCE.2018.62](https://doi.org/10.4230/LIPICs.GISCIENCE.2018.62)
- Brown, C. and **X. Yao**. 2015. Development of a Nationwide Road Change Database for the U.S. in the Post-Recession Years (2008–2012). Chapter 10. In Francis Harvey and Yee Leung (eds) *Advances in Spatial Data Handling and Analysis*. 2015. Springer. pp.163-181.
- Shen, Z., **X.Yao**, M. Kawakami, P. Chen, M. Koujin. 2012. Integration of MAS and GIS using Netlogo. In Z.Shen (eds) *Geospatial Techniques in Urban Planning*, *Advances in Geographic Information Science*. Berlin: Springer-Verlag. pp.369-388.
- Yao, X.** 2010. Modeling and analyzing cities as spatio-temporal places. In B.Jiang and X.Yao (eds) *Geospatial Analysis and Modelling of Urban Structure and Dynamics*. Dordrecht, the Netherlands: Springer. pp.311-328.
- Jiang, B, and **X.Yao**. 2010. Geospatial Analysis and Modeling of Urban Structure and Dynamics: An Overview. In B.Jiang and X.Yao (eds) *Geospatial Analysis and Modelling of Urban Structure and Dynamics*. Dordrecht, the Netherlands: Springer. pp.3-11.
- Yao, X.** Qualitative Spatial Reasoning and GIS. 2009. In M. Madden (ed) *Manual of Geographic Information Systems*. 1st edition. ASPRS publisher. pp.71-86.

- Yao X.** 2009. Georeferencing, Geocoding. In Kitchin R, Thrift N (eds) *International Encyclopedia of Human Geography*, Volume 1, Oxford: Elsevier. pp. 458-465.
- Yao, X.** and Zhou, Y. 2009. Public Transit Need Index – Analyzing Spatial Distribution of the Potential Demand for Public Transit in a City. *Geo-spatial Information and Decision Support for Urban Planning*. Wuhan University Publishing. ISBN: 9787307066694. (in Chinese).
- Thill, J.C. Kretzschmar, W.A., Casas, I. and **Yao, X.** 2007. Detecting geographic and socio-economic associations in English dialect features with self-organising maps. In Agarwal, P. and Skupin, A. (Eds) *Self-Organising Maps: Applications in Geographic Information Science*, West Sussex, UK: Wiley. pp87-106.
- Thill, J.C. and **Yao, X.** 1999. Urban Land Management in Transitional Countries: A Decision Support Prototype for Shanghai. In J.C. Thill (ed) *Spatial Multicriteria Decision Making and Analysis: A Geographic Information Sciences Approach*, Brookfield, VT: Ashgate. pp. 175-197.

Research White Paper and Reports

- Yao, X.** 2006. Position Paper Selected for participation in Digital Gazetteer Research and Practice: A 2 1/2 – day workshop for the presentation, discussion, and summarization of current issues and opportunities. Dec. 7-9, 2006. Santa Barbara, CA.
- Yao, X.** 2003. Research Issues in Spatio-temporal Data Mining, a white paper prepared for the University Consortium for Geographic Information Science (UCGIS) workshop on Geospatial Visualization and Knowledge Discovery, Lansdowne, Virginia, Nov. 18-20, 2003.
- Yao, X.** 2003. Modeling Spatio-Temporal Interaction Data and Identifying Unusual Patterns. A proposal of research challenges submitted to the University Consortium for Geographic Information Science (UCGIS) workshop on Homeland Security, Dawsonville, GA. Nov. 6-7, 2003.

Book Review

- Yao, X.** (2013). A book review on Statistics for Spatio-temporal Data by Noel Cressie and Christopher K. Wikle. *Journal of the American Statistical Association*. 108(501): 357
- Yao, X.** (2010) A book review on Understanding Dynamics of Geographic Domain, by K.S. Hornsby and M. Yuan (eds), 2010. *Photogrammetric Engineering and Remote Sensing*. 76(4):525-526.

AWARDS AND HONORS

- 2013, 2015 President Venture Fund, University of Georgia
- 2014-2015, Online Teaching Fellow, University of Georgia
- 2011-2012 Fellow, Study in a Second Discipline Program, University of Georgia
- 2010 *Transactions in GIS* Best Paper Award (co-authored with Woo Jang). University Consortium of Geographic Information Science summer assembly, June 15-16, 2010. Hilton Head, SC.

- 2005 ESRI-UCGIS Young Scholar Award. University Consortium of Geographic Information Science (UCGIS).
- 2004 Sarah Moss Fellowship. University of Georgia, 2004-2005.
- 2004 Nominee (representing SUNY at Buffalo) of Outstanding Dissertation in Social Science and Education for the 2004 NAGS (Northeastern Association of Graduate Schools)'s Outstanding Dissertation Award.
- 2004 J. Warren Nystrom Award Finalist. Association of American Geographers.
- 2002 Best Paper Award (first place), GIS Specialty Group Student Paper Competition, AAG Annual Meeting, Los Angeles, CA.
- 1997 Graduation with the honor of "DISTINCTION" in ITC, the Netherlands.
- 1993 Best paper award (first place), East China Urban Planning Young Scholar Paper Competition. Shanghai, China.
1990. Ye Xuean Fellowship Award. WTUSM (now Wuhan University).

CURRENT DISCIPLINARY SERVICE

Vice President (2021- present), Cartography and Geographic Information Society

Commission Chair (2015-present), International Cartographic Association (ICA) Commission on Geospatial Analysis and Modeling

UCGIS Board of Directors (2020 - present), University Consortium of Geographic Information Science

UCGIS Delegate (2013- present), University Consortium of Geographic Information Science