

Curriculum Vitae

Dr Jing Yao (BSc, MSc, MSc (Eng.), PhD)

Senior Lecturer in Urban Big Data and Quantitative Methods

Urban Big Data Centre (UBDC), the GCRF Centre for Sustainable, Healthy and Learning Cities and Neighbourhoods (SHLC), School of Social & Political Sciences, University of Glasgow

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Employment History

2019.8-now	Senior Lecturer	University of Glasgow, UK
2014.10-2019.7	Lecturer	University of Glasgow, UK
2013.6-2014.9	Research Fellow	University of St Andrews, UK
2013.1- 2013.5	Postdoctoral Associate	Arizona State University, USA
2012.8-2012.12	Teaching Assistant	Arizona State University, USA
2009.8-2012.8	Research Assistant	Arizona State University, USA
2008.5-2009.8	Lecturer (faculty)	Hohai University, China
2005.6-2008.5	Teaching Assistant (faculty)	Hohai University, China

Academic Qualifications

2012. 12	PhD in Geography	Arizona State University, USA
2012. 05	M.S. in Industrial Engineering	Arizona State University, USA
2005. 05	M.S. in Geography	Nanjing University, China
2002. 05	B.S. (Honours) in Geography	Nanjing University, China

Research and Teaching Interests

GIScience; Spatial Optimization; Spatial Statistics; Quantitative Methods; Health Geography; Urban and Regional Planning and Development; Location Modelling; GeoAI.

Awards and Fellowships

2017	Fellow of the Higher Education Academy (FHEA), UK.
2012	Chinese Government Award for Outstanding Self-financed Students Abroad, China Scholarship Council, \$6,000.
2009	University Graduate Fellowship, Arizona State University, USA.

Grants

2023-2025	<i>A Big Data Approach to Remotely Tracking Global Rangeland Condition Changes.</i> PI. The Royal Society, £11,970.
2023	<i>Internal Funding for NERC Supporting Interdisciplinarity in Discovery Science.</i> PI. University of Glasgow, £8,791.
2021-2023	<i>Towards a Healthy Urban Environment: Post-pandemic Urban Public Space Planning, Design and Management.</i> PI. The Royal Society of Edinburgh, £9,800.
2019-2024	<i>Urban Big Data Centre.</i> Co-I (PI: Prof. Nick Bailey). Economic and Social Research Council.
2017-2021	<i>GCRF Centre for Sustainable, Healthy, and Learning Cities and Neighbourhoods (SHLC).</i> Co-I (PI: Prof. Ya Ping Wang). Global Challenges Research Fund (GCRF) Research Councils UK Collective Fund, £7,105,262.
2017-2019	<i>EuroGEOSS-Hub: the European approach to Data Hub for GEOSS.</i> Co-I. (PI: François ROBIDA, Geological and Mining Research Bureau Joint Research Center, European). Horizon 2020 Research and Innovation Framework Programme. European Commission.
2016	<i>Postdoctoral and Early Career Researcher Exchanges Funds.</i> <i>Scottish Alliance for Geoscience, Environment and Society</i> , £2,500.
2015-2018	<i>The Re-Making of Chinese Urban Neighborhoods: Socio-Spatial Transformation and Access to Public Services.</i> Co-I (PI: Prof. Ya Ping Wang). Economic and Social Research Council and National Natural Science Foundation of China: UK-China Research and Innovation Partnership Fund (Newton Fund), £606,945.
2015	<i>Glasgow-Nankai Research Exchange Grant.</i> University of Glasgow, £1,500.
2013-2015	<i>Spatial Optimization Approaches for Solving the Continuous multi-Weber Problem.</i> PI. National Natural Science Foundation of China, ¥230,000.
2013-2015	<i>Continuous Geographic Physical Process Model and its Integration with GIS.</i> Co-I (PI: Dr. Xiaoxiang Zhang). National Natural Science Foundation of China, ¥250,000.

Publications

Book Chapter

- Yao, J.**, & Murray, A. T. (2020). A spatial optimization approach for solving a multi-facility location problem with continuously distributed demand. In: Thill, J.-C. (ed.) *Innovations in Urban and Regional Systems*. Springer, pp. 113-135. ISBN 9783030436926.
- Yao J.** 2009. Chapter 9 *Application of GIS in the Management of Flood*. In L. Kang and X. Zhang (ed.), *Principles and Applications of Geographical Information Systems (in Chinese)*. China Water & Power Press, pp. 143-156.
- Michael Zeiler, *Modeling Our World: The ESRI® Guide to Geodatabase Design*, translated by X. Zhang, F. Zhang, & **J. YAO** et al., Posts & Telecom press, 2004, 200pp. (in Chinese) (English Version: Michael Zeiler, *Modeling Our World: The ESRI® Guide To Geodatabase Design*, ESRI Press, 1999, 200pp).

Peer-reviewed Journal Articles

- Yao, J.**, Zhang, X., Luo, W., Liu, C., & Ren, L. (2022). Applications of Stacking/Blending ensemble learning approaches for evaluating flash flood susceptibility. *International Journal of Applied Earth Observation and Geoinformation*, 112, 102932.
- Luo, W., **Yao, J.**, Mitchell, R., Zhang, X., & Li, W. (2022). Locating emergency medical services to reduce urban-rural inequalities. *Socio-Economic Planning Sciences*, 84, 101416.
- Colbert, J., Sila-Nowicka, K., & **Yao, J.** (2022). Driving forces of population change following the Canterbury Earthquake Sequence, New Zealand: A multiscale geographically weighted regression approach. *Population, Space and Place*, 28(8), e2583.
- Luo, W., Chen, C., Li, H., Hou, Y., Xia, Y., Liu, J., ... & **Yao, J.** (2022). Residential open space and the perception of health benefits: How much is the public willing to pay?. *Journal of Environmental Management*, 316, 115273.
- Chen, C., Li, H., Luo, W., Xie, J., **Yao, J.**, Wu, L., & Xia, Y. (2022). Predicting the effect of street environment on residents' mood states in large urban areas using machine learning and street view images. *Science of The Total Environment*, 816, 151605.
- Li, H., Luo, W., Hou, Y., Xia, Y., **Yao, J.**, Kang, N., ... & Chen, C. (2021). Factors Affecting Perceived Health Benefits and Use Behaviors in Urban Green Spaces During the COVID-19 Pandemic in Southern China Megacities. *Frontiers in Public Health*, 9, 759444.
- Zhang, X., **Yao, J.**, Sila-Nowicka, K., & Song, C. (2021). Geographic concentration of industries in Jiangsu, China: a spatial point pattern analysis using micro-geographic data. *The Annals of Regional Science*, 66(2), 439-461.

- Zhang, X., **Yao, J.**, Wang, J., & Sila-Nowicka, K. (2020). Changes of forestland in China's coastal areas (1996-2015): Regional variations and driving forces. *Land Use Policy*, 99, 105018.
- Luo, W., **Yao, J.**, Mitchell, R., & Zhang, X. (2020). Spatiotemporal access to emergency medical services in Wuhan, China: accounting for scene and transport time intervals. *International Journal of Health Geographics*, 19(1), 1-14.
- Yuan, Q., Zhou, K., & **Yao, J.** (2020). A new measure of wind power variability with implications for the optimal sizing of standalone wind power systems. *Renewable Energy*, 150, 538-549.
- Zhang, X., **Yao, J.**, Sila-Nowicka, K., & Jin, Y. (2020). Urban fire dynamics and its association with urban growth: evidence from Nanjing, China. *ISPRS International Journal of Geo-Information*, 9(4), 218.
- Jin, Y., Liu, X., **Yao, J.**, Zhang, X., & Zhang, H. (2020). Mapping the annual dynamics of cultivated land in typical area of the Middle-lower Yangtze plain using long time-series of Landsat images based on Google Earth Engine. *International Journal of Remote Sensing*, 41(4), 1625-1644.
- Yao, J.**, Murray, A. T., Wang, J., & Zhang, X. (2019). Evaluation and development of sustainable urban land use plans through spatial optimization. *Transactions in GIS*. 23, 705-725.
- Yao, J.**, Zhang, X., & Murray, A. T. (2019). Location Optimization of Urban Fire Stations: Access and Service Coverage. *Computers, Environment and Urban Systems*, 73, 184-190.
- Yao, J.**, & Agadjanian, V. (2018). Bypassing health facilities in rural Mozambique: spatial, institutional, and individual determinants. *BMC Health Services Research*, 18(1), 1006.
- Yao, J.**, Wong, D. W.S., Bailey, N. and Minton, J. (2018). Spatial segregation measures: a methodological review. *Tijdschrift voor Economische en Sociale Geografie*, Doi:10.1111/tesg.12305.
- Yao, J.**, Zhang, X., & Murray, A. T. (2018). Spatial Optimization for Land-use Allocation: Accounting for Sustainability Concerns. *International Regional Science Review*, 41(6), 579-600.
- Zhang, X., **Yao, J.** and Sila-Nowicka, K. (2018). Exploring spatiotemporal dynamics of urban fires: A case of Nanjing, China. *ISPRS International Journal of Geo-Information*, 7(1), 7. (doi:10.3390/ijgi7010007).
- Yao, J.**, & Fotheringham, A. S. (2016). Local spatiotemporal modeling of house prices: a mixed model approach. *The Professional Geographer*, 68(2), 189-201.
- Agadjanian, V., **Yao, J.**, & Hayford, S. R. (2016). Place, Time and Experience: Barriers to Universalization of Institutional Child Delivery in Rural Mozambique. *International Perspectives on Sexual and Reproductive Health*, 42(1), 21-31.

- Agadjanian, V., Hayford, S. R., Luz, L., & **Yao, J.** (2015). Bridging user and provider perspectives: Family planning access and utilization in rural Mozambique. *International Journal of Gynecology & Obstetrics*, 130, E47-E51.
- Fotheringham, A. S., Crespo, R., & **Yao, J.** (2015). Exploring, modelling and predicting spatiotemporal variations in house prices. *The Annals of Regional Science*, 54(2), 417-436.
- Fotheringham, A. S., Crespo, R., & **Yao, J.** (2015). Geographical and temporal weighted regression (GTWR). *Geographical Analysis*, 47(4), 431-452.
- Yao, J.**, Agadjanian, V., & Murray, A. T. (2014). Spatial and social inequities in HIV testing utilization in the context of rapid scale-up of HIV/AIDS services in rural Mozambique. *Health & Place*, 28, 133-141.
- Yao, J.**, & Murray, A. T. (2014). Locational effectiveness of clinics providing sexual and reproductive health services to women in rural Mozambique. *International Regional Science Review*, 37(2), 172-193.
- Yao, J.**, & Murray, A. T. (2014). Serving regional demand in facility location. *Papers in Regional Science*, 93(3), 643-662.
- Yao, J.**, Murray, A. T., & Agadjanian, V. (2013). A geographical perspective on access to sexual and reproductive health care for women in rural Africa. *Social Science & Medicine*, 96, 60-68.
- Yao, J.**, & Murray, A. T. (2013). Continuous surface representation and approximation: spatial analytical implications. *International Journal of Geographical Information Science*, 27(5), 883-897.
- Yao, J.**, Murray, A. T., Agadjanian, V., & Hayford, S. R. (2012). Geographic influences on sexual and reproductive health service utilization in rural Mozambique. *Applied Geography*, 32(2), 601-607.
- Cudnik, M. T., **Yao, J.**, Zive, D., Newgard, C., & Murray, A. T. (2012). Surrogate markers of transport distance for out-of-hospital cardiac arrest patients. *Prehospital Emergency Care*, 16(2), 266-272.

Software Development

2013-2014 PyGWR — A New Version GWR and Extension.

- A project led by Professor Stewart Fotheringham at Centre for Geoinformatics, University of St Andrews, UK.
- The only developer of PyGWR.
- A prototype was used in a short course for PhD students given by Professor Stewart Fotheringham and Dr Jing Yao (Lab Instructor) at Arizona State University, USA in March 2014.

2013-2014 Development of GWR4.0.8 and GWR 4.0.9.

- An international collaboration project organized by Tomoki Nakaya (Department of Geography, Ritsumeikan University, Japan), Martin Charlton, Paul Lewis, Chris Brunsdon (National Centre for Geocomputation, National University of Ireland, Ireland), Jing Yao (School of Social and Political Sciences, University of Glasgow) and Stewart Fotheringham (School of Geographical Sciences & Urban Planning, Arizona State University) (<http://gwr.maynoothuniversity.ie/gwr4-software/>).
- Developer and group member.

2010-2011 Development of GeoDaSpace and PySAL.

- Projects led by Professors Luc Anselin and Serge Rey at the GeoDa Center for Geospatial Analysis and Computation, Arizona State University, USA (<https://spatial.uchicago.edu/software>).
- Developer and group member.

Presentations

Yao J., Y.P. Wang, X. Zhang. Spatial Patterns of Urban Expansion in Chinese Cities. *The 29th International Cartographic Conference of the International Cartographic Association*, Tokyo, Japan, July 15 – 20, 2019.

Yao J., X. Zhang. A Spatial Optimization Approach for Vector-based Land Use Planning. *The 22nd Conference on Geo-inforamtion Science*, Limassol, Cyprus, June 17 – 20, 2019.

Yao J., A.T. Murray. Location Modeling to Support Sustainable Urban Land Use Planning. *International Symposium on Locational Decisions (ISOLDE) XIV*, Toronto, Ontario, Canada, July 9 – 14, 2017.

Yao J., X. Zhang. Location Optimization of Fire Stations: Trade-off between Accessibility and Service Coverage. *The Ninth International Conference on Geographic Information Science*, Montreal, Canada, September 27-30, 2016.

Yao J., X. Zhang. Spatial-Temporal Dynamics of Urban Fire Incidents: A Case Study of Nanjing, China. *The XXIII International Society for Photogrammetry and Remote Sensing (ISPRS) Congress*, Prague, Czech Republic, July 12-19, 2016.

Yao J., A.S. Fotheringham. A Framework for Geographically Weighted Analysis and a Supporting Python Library – PyGWA. *Annual Meeting of the Association of American Geographers*, Chicargo, IL, USA, April 21-25, 2015.

Yao J., A.S. Fotheringham. Local Spatiotemporal Modelling of House Prices: A Mixed Model Method. *The 61st North American Meetings of the Regional Science Association International*, Bethesda, Washington, D.C., USA, November 12-15, 2014. 6.

- Yao J.**, A.T. Murray, and V. Agadjanjan. Geographical Access to Sexual and Reproductive Health Care for Women in Rural Mozambique. *Annual Meeting of the Association of American Geographers*, Los Angeles, CA, USA, April 9-13, 2013.
- Yao J.**, A.T. Murray. Evaluation of Health Care Facility Locations: a Case Study in Rural Mozambique. *Western Regional Science Conference*, Santa Barbara, CA, USA, Feb 25 - 27, 2013.
- Yao J.**, A.T. Murray. Assessment of Sexual and Reproductive Health Service Location in Rural Mozambique. *International Symposium on locational decisions (ISOLDE) XII*, Nagoya and Kyoto, Japan, July 19 - 24, 2012.
- Yao J.**, A.T. Murray. Continuous Surface Representation and Approximation: Spatial Analytical Implications. *Annual Meeting of the Association of American Geographers*, New York, NY, USA, February 24-28, 2012.
- Yao J.**, A.T. Murray. Heuristics for Solving Multi-Weber Problem Extensions. *North American Regional Science Conference*, Miami, FL, USA, November 9-12, 2011.
- Yao J.**, A.T. Murray, V. Agadjanjan, S. Hayford. Exploratory Spatial Analysis of Sexual and Reproductive Health Services Utilization in Rural Mozambique. *Annual Meeting of the Association of American Geographers*, Seattle, WA, USA, April 12-16, 2011.
- Yao J.**, A.T. Murray. Siting A Single Facility to Best Serve an Area. 2010 North American Regional Science Conference, Denver, CO, USA, November 10-13, 2010.
- Yao J.**, A.T. Murray, S. Hayford, V. Agadjanjan, B. Cau. Regional Variability of Women's HIV/AIDS Risks: A Case Study of Gaza, Mozambique. *Annual Meeting of the Association of American Geographers*, Washington, D.C., USA, April 14-18, 2010.

Supervision

PhD Students

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| 2023- | Ms Huan Chen (lead supervisor), University of Glasgow |
| 2018-2022 | Dr Weicong Luo (lead supervisor), " <i>Measuring and Optimizing Accessibility to Emergency Medical Services</i> ". University of Glasgow (Assistant Professor, Huazhong Agricultural University, China) |
| 2018-2019 | Dr Yuhao Jin (1-year visiting student at University of Glasgow), " <i>Big-data Driven Spatial Analytics for Land-use Dynamics Analysis and Modelling</i> ". Sun Yat-sen University, China (Associate Professor, South China Agricultural University, China) |

Master Students

I've supervised about 40 Master dissertations at University of Glasgow on a variety of topics including urban planning, real estate market and urban transport, among others.

Visiting Scholar

2022-2023	Dr Qiuping Li, Sun Yat-sen University, China
2023	Dr Yunxia Liu, Zhou Enlai School of Government, Nankai University, China
2016-2017	Dr Xuemei Bi, the Center of Earthquake Emergency Technical Support, Earthquake Administration of Jiangsu, China
2016	Professor Jing Wang, Wuhan University, China

Teaching & Related Administration

2014-2023, University of Glasgow, UK

Postgraduate	<ul style="list-style-type: none">• Social Science Statistics I (course convener) (2014-2018)• Social Science Statistics II (course convener) (2014-2018)• Principles of Applications of GIS (course convener) (2018-now)• Programming with GIS (course convener) (2020)• Fundamental of Transport Studies (co-taught) (2015-2018)• International Real Estate Analysis (co-taught) (2015)
Undergraduate	<ul style="list-style-type: none">• Researching the City: A Spatial Perspective (course convener) (2017-)
UBDC/SHLC training courses	<ul style="list-style-type: none">• Introduction to R• Using R: Mapping Spatial Data• Introduction to R for Spatial Analysis• Introduction to R for Statistical Analysis

2014, University of St Andrews, UK

- Quantitative Methods in Geography (co-taught)

2012, Arizona State University, Arizona, USA.

- Geographic Information Science I (teaching assistant)

2005-2009, Hohai University, Nanjing, China.

- Undergraduate thesis advisor (number students: 6)
- Principles of Spatial Databases (course convener)
- Principles of Geographic Information Systems (course convener)
- Web-based Geographic Information Systems (course convener)

Administration, University of Glasgow, UK.

2018 – 2019	MSc Urban Analytics program convener
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2017 – now	Nankai undergraduate exchange program convenor
2015 – 2017	Honours convenor
2015 – 2017	Exam Officer
2015 – 2017	International/Erasmus exchange coordinator
2016 – now	Advisor of Studies

Invited Talks

2022.12	<i>“Reducing Emergency Medical Service Inequalities with Spatial Optimization”</i> . Sun Yat-Sen University, China (Online).
2022.05	<i>“Locating Emergency Medical Service Stations to Reduce Urban-Rural Inequalities with Spatial Optimization”</i> . Sheffield Spatial Analysis Network, University of Sheffield, UK (Online).
2020.06	<i>“Applications of GIS in Public Health Management and Planning”</i> . Renmin University of China, China (Online).
2019.07	<i>“Urban Fire Dynamics and Location Optimization of Urban Fire Stations”</i> . University of Tohoku University, Sendai, Japan.
2019.07	<i>“GIS Teaching in Higher Education: Cases in the USA and the UK”</i> . The 8th Teaching Workshop for National College Young Teachers of GIS, Hohai University, Nanjing, China.
2018.01	<i>“Design and Development of Open-source Software for Spatial Analysis”</i> . Institute of Geographic Sciences and Natural Resources Research, Chinese Science Academy, China.
2017.06	<i>“Optimisation Problems in Geographically Weighted Regression.”</i> School of Government, Peking University, China.
2016.05	<i>“Spatiotemporal Analyses of Urban Fires and Optimizing Fire Station Locations: An Initial Study on Smart Fire Fighting.”</i> Department of Geography & Planning, University of Liverpool, UK.
2015.12	<i>“Spatial Analysis and Urban Big Data in Agricultural Land Use Research.”</i> Beijing Agriculture and Forestry Academy of Sciences, Beijing, China.
2015.08	<i>“Spatial Analysis and Urban Big Data Research in UK.”</i> the Institution of Remote Sensing and Digital Earth, Chinese Academy of Sciences, Beijing, China.
2015.07	<i>“Spatial Statistics in Social Sciences and the Challenges of Big Data.”</i> Zhou Enlai School of Government, Nankai University, Tianjin, China.

2014.12 *"Applications of Spatial Analytics in National Geographic Conditions Monitoring."* National Administration of Surveying, Mapping and Geoinformation, Beijing, China.

Invited Master Courses

2019.08 *"Geographically Weighted Regression"*. University of Augsburg, Germany.

2017.06 *"Using PySAL for Spatial Analysis"*. Hohai University, China.

2017.06 *"Geographically Weighted Regression"*. Hohai University, China.

Professional Services

PhD Examiner

2023 External *"Determinants of multidimensional child poverty in Pakistan: an empirical investigation using micro data"* by Mr Afra Kanwal, University of Gujrat, Pakistan.

2021 External *"Measurement and determinants of horizontal inequalities in Pakistan: An empirical analysis using microdata"* by Mr Faisal Munir, University of Gujrat, Pakistan.

2018 Internal *"Monitoring and Control of Transport Networks Using Parsimonious Models"* by Ms Ruzanna Mat Jusoh, University of Glasgow, UK.

2018 External *"Error Propagation in Geographically Weighted Regression"* by Mr Jaakko Madetoja, Aalto University, Finland.

Editorial Appointments

2022 – present Editorial Board, Journal of Geodesy and Geoinformation Science

2021 – present Editorial Board, Transactions in Urban Data, Science, and Technology

2020 – present Editorial Board, International Journal of Geographical Information Science

External Examiner

2022 – 2026 MSc Spatio-temporal Analytics and Big Data Mining, University College London

2022 – 2026 MSc Geospatial Sciences (GIS & Computing), University College London

Grant Reviewer

- National Natural Science Foundation of Chinese (China)
- Economic and Social Research Council (UK)

Book Reviewer

- “Multiscale Geographically Weighted Regression: Context-Driven Spatial Modeling” CRC Press/Taylor and Francis Group (2022)
- “Applied Data Analysis for Urban Planning and Management” SAGE Publications Ltd (2019)
- “Seeing Cities Through Big Data – Research, Methods and Applications in Urban Informatics” Springer (2015)

Journal Reviewer

<i>Geographical Analysis</i>	<i>Applied Geography</i>
<i>International Regional Science Review</i>	<i>PLOS ONE</i>
<i>International Journal of Geographical Information Science</i>	<i>Socio-Economic Planning Sciences</i>
<i>The Annals of Regional Science</i>	<i>Spatial Economic Analysis</i>
<i>Transactions in GIS</i>	<i>Social Science & Medicine</i>
<i>Computers, Environment and Urban Systems</i>	<i>International Journal of Health Geographics</i>
<i>Environment and Planning B: Urban Analytics and City Science</i>	<i>Annals of the American Association of Geographers</i>
<i>Health and Place</i>	<i>Journal of Geographical Systems</i>
<i>International Journal of Applied Earth Observation and Geoinformation</i>	<i>Papers in Regional Science</i>
<i>Journal of Urban Planning and Development</i>	<i>Journal of the Operational Research Society</i>
<i>Land Use Policy</i>	<i>Journal of Official Statistics</i>
<i>Geocarto International</i>	<i>Habitat International</i>
<i>Cities</i>	<i>BMJ Open</i>
<i>Transportation Letters: The International Journal of Transportation research</i>	<i>Tropical Medicine & International Health</i>

Professional Society Membership

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| Since 2018 | Association of Geographic Information Laboratories in Europe
(Council Member) |
| Since 2013 | Scottish Alliance for Geoscience, Environment and Society |

2010 – 2014	Regional Science Association International
2011 – 2013	Western Regional Science Association
Since 2009	Association of American Geographers

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