

Curriculum Vitae

Xinyi Zhao

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Research Interests

Digital and computational demography	Gender disparities
Migration studies	Spatial data analysis
Applied statistics	Geographic Information System (GIS)
Cartography	

Education

2021.10 - 2024.10	Doctorate of Philosophy in Sociology University of Oxford, Oxford, United Kingdom
2020.09 - 2023.09	Doctorate of Philosophy in Demography Max Planck Institute for Demographic Research, Rostock, Germany Thesis title: Analyzing international and internal migration of researchers by combining traditional and novel data sources
2016.09—2019.06	Master of Science in Cartography and Geographical Information System Nanjing University, Nanjing, China (GPA: 90.28/100) Thesis title: Spatio-temporal Dynamics Analysis of Interprovincial Migration System in China
2012.09—2016.06	Bachelor of Science in Geographical Information System China University of Geosciences, Wuhan, China (GPA: 3.64/5, Rank: 3/96) Thesis title: Modelling OD Flows of Bus Trip based on GPS and IC Card Data

Work Experience

2020.1 - 2020.9	Dept. of Urban planning and Design, The University of Hong Kong Research Assistant Main responsibilities: data collection and analysis; model programming; project reporting
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Selected Research Projects

1. Modeling and Analysis of Migration and Mobility among Scholars

This project leverages bibliometric data from more than 8 million publications to (1) analyze migration of researchers to and from Germany, (2) evaluate its impact on different fields of scholarship, research productivity, and research impact, and (3) explore the mobility pattern and its interaction with multiple social indicators including gender inequality and ethnic minorities.

2. Investigating Nighttime Light Data for Population Health

The long time-series nighttime light data extracted from multiple sources of remote sensing images is calibrated and processed to evaluate its relationship with population health development in Hong Kong.

3. The Pattern Discovery and Mechanism Research on Migration Flows

Spatial dependence among O-D flows and spatial spillovers combined with Bayesian statistics are integrated to construct Spatial O-D models. The application of these models in the case of Chinese interprovincial migration are used to explain the spatial pattern and driving mechanism of migration in China. Temporal scales are further incorporated to explore the development of the migration system.

4. The Optimization and Uncertainty Analysis of Spatial O-D Models

Various spatial O-D models in different forms are established to characterize O-D flows and applied in a study on interprovincial migration in China from 1985-2015. These models are then compared and optimized using Bayesian model averaging methods in order to provide a sound interpretation of the population evolution in China.

5. Workflow Based Spatial Data Analysis

Workflow data analysis with R AnalyticFlow is utilized in social case studies to replicate the classical research study of Prof. Luc Anselin on spatial regression functionality.

6. The Parallelization of a Geographically Weighted k-Nearest Neighbor Classifier

The geostatistics and parallel computation are incorporated into the traditional k-nearest neighbors (gwk-NN) classifier to simultaneously improve efficiency and timeliness of remote sensing image classification.

7. iLBSoNe Project

The design and implementation of a Location-based mobile social system for Indoor positioning and navigation was investigated systematically.

8. Footprint Network System

A Browser/Server tourism service system based on MapGIS for recording tourism footprints and inquiring tourism information was developed.

Publications

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1. Yin, Y.F., Pu, Y.X., Zhao, X.Y., Chi, G.Q., and Ye, C. (2023). "The Spatiotemporal Elasticity of Age Structure in China's Interprovincial Migration System" *Sustainability*. <https://www.mdpi.com/2071-1050/15/10/8001>
 2. Zhao, X.Y., Akbaritabar, A., Kashyap, R., and Zagheni, E. (2023). "A gender perspective on the global migration of scholars" *Proceedings of the National Academy of Sciences (PNAS)*. <https://doi.org/10.1073/pnas.2214664120>

3. Zhao, X.Y., Aref, S., Zagheni, E., and Stecklov, G. (2022). "Return migration of German-affiliated researchers: Analyzing departure and return by gender, cohort, and discipline using Scopus bibliometric data 1996-2020" *Scientometrics*. <https://doi.org/10.1007/s11192-022-04351-4>

4. Zhao, X.Y., Aref, S., Zagheni, E., and Stecklov, G. (2021). "Mapping academic migration of German-affiliated researchers across countries using 8 million Scopus publications from 1996 to 2020", *Abstr. Int. Cartogr. Assoc.*, 3, 327. <https://doi.org/10.5194/ica-abs-3-327-2021>

5. Zhao, X.Y., Aref, S., Zagheni, E., and Stecklov, G. (2021). "International migration in academia and citation performance: an analysis of German-affiliated researchers by gender and discipline using Scopus publications 1996-2020" In: *Proceedings of the 18th International Conference on Scientometrics and Informetrics (ISSI 2021)*, Leuven, Belgium, July 12-15, 2021. Leuven: ISSI. <https://arxiv.org/abs/2104.12380>

6. Pu, Y.X., Zhao, X.Y., Chi, G.Q., Zhao, J., and Kong, F.H. (2019). "A Spatial Dynamic Panel Approach to Modelling the Space-time Dynamic of Interprovincial Migration Flows in China" *Demographic Research* 41(31): 913-948. <https://doi.org/10.4054/DemRes.2019.41.31>

7. Pu, Y.X., Zhao, X.Y., Chi, G.Q., Zhao, S.H., Wang, J.C., Jin, Z.B and Yin, J.J. (2019). "Design and Implementation of a Parallel Geographically Weighted k- Nearest Neighbor Classifier" *Computers and Geosciences* 6(127): 111-122. <https://doi.org/10.1016/j.cageo.2019.02.009>

8. Zhao, X.Y., and Pu, Y.X. (2018). "Space-time Spillover Effects and Driving Forces of Regional Migration Process" *Journal of Geoinformation Science* 6(29): 817-826 (in Chinese).

9. Zhao, X.Y., and Pu, Y.X. (2018). "The Complex System of Interprovincial Migration Flows in China, 1985– 2015" 2018 26th *International Conference on Geoinformatics*, 2018: 1-6. <https://doi.org/10.1109/GEOINFORMATICS.2018.8557095>

10. PU, Y.X., Deng, D.M., and Zhao, X.Y. (2018). "The Measurement of New Urbanization Level in Sichuan Province Based on AHP-BN Methods" *Journal of Northwest Normal University* (Natural Science) 1(54): 77-83 (in Chinese).

Book Chapters

1. KASHYAP, R.; RINDERKNECHT, R. G.; AKBARITABAR, A.; ALBUREZ-GUTIERREZ, D.; GIL-CLAVEL, B. S.; GROW, A.; KIM, J.; LEASURE, D. R.; LOHMANN, S.; NEGRAIA, D. V.; PERROTTA, D.; RAMPAZZO, F.; TSAI, C.-J.; VERHAGEN, M. D.; ZAGHENI, E.; ZHAO, X. (2023). Digital and computational demography In: *Research handbook on digital sociology*, 48–86. Cheltenham: Edward Elgar Publishing.

International Conferences/workshops

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| <ol style="list-style-type: none"> 1. 2023 Population Association of America (PAA 2023)
Poster presentation
Title: Gendered patterns of global scholarly migration: Evidence on mobile researchers from bibliometric data | New Orleans, USA
April 12 - 15,
2023 |
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2. The workshop on "Detecting and Mitigating Bias in Migration Research" Córdoba, Spain
 Oral presentation March 30 - 31,
 Title: Identifying and Mitigating Bias in the Study of Scholarly Migration using 2023
 Bibliometric Data

3. Popdays 2023- Giornate di Studio sulla Popolazione Rome, Italy
 Oral presentation Feb 01 - 03,
 Title: Gendered patterns of global scholarly migration: Evidence on mobile 2023
 researchers from bibliometric data

4. The 28th Annual Population Postgraduate Conference Florence, Italy
 Oral presentation October 26 - 28,
 Title: Gendered patterns of global scholarly migration: Evidence on mobile 2022
 researchers from bibliometric data

5. VI Portuguese Conference of Demography Lisbon, Portugal
 Oral presentation October 13 - 14,
 Title: Gendered patterns of global scholarly migration: Evidence on mobile 2022
 researchers from bibliometric data

6. British Society for Population Studies 2022 Conference Winchester, UK
 Oral presentation September 05 - 07,
 Title: Gendered patterns of global scholarly migration: Evidence on mobile 2022
 researchers from bibliometric data

7. 2022 Annual Meeting of the American Sociological Association Los Angeles, USA
 Oral presentation August 05 - 09, 2022
 Title: Gendered patterns of global scholarly mobility: Evidence on mobile
 researchers from bibliometric data

8. European Population Conference 2022 Groningen, Netherland
 Oral presentation June 29 - July02
 Title: Return migration in academia: an analysis of German-affiliated 2022
 researchers by gender, cohort and discipline using Scopus publications
 1996-2020

9. 2022 Population Association of America (PAA 2022) Atlanta, USA (online)
 Oral presentation April, 06-09
 Title: Gender Inequality in International Scholarly Migration: Evidence on 2022
 German-Affiliated Researchers From 8 Million Scopus Publications

10. 30th International Cartographic Conference Florence, Italy
 (online)
 Oral presentation December, 14-18,

- Title: Mapping academic migration of German-affiliated researchers across countries using 8 million Scopus publications from 1996 to 2020 2021
11. 2021 International Population Conference (IPC 2021) Hyderabad, India
 Oral presentation (online)
 Title: The interplay between scholarly migration, gender, career stages, and citations: Evidence on German-affiliated researchers from 8 million Scopus publications December, 5-10, 2021
12. Migration and Mobility Research in the Digital Era (MIMODE 2021) Lyon, France (online)
 A satellite event of the Conference on Complex Systems 2021 October, 27, 2021
 Oral presentation
 Title: The interplay between migration, gender, career stages, and citations: Evidence on German-affiliated researchers from Scopus
13. Workshop “Methodological Innovations in Research on Spatial Mobility: Potentials and Pitfalls” Berlin, Germany
 Oral presentation (online)
 September, 27, 2021
 Title: The interplay between migration, gender, career stages, and citations: Evidence on German-affiliated researchers from Scopus
14. Flash Talk Competition at the Conference “New Data for the New Challenges of Population and Society” Padua, Italy (online)
 3-min talk September 22-24, 2021
 Title: The interplay between scholarly migration, gender, career stages, and citations: Evidence on German-affiliated researchers from 8 million Scopus publications
15. The 7th International Conference on Computational Social Science (IC2S2) Zurich Switzerland
 Oral presentation (online)
 Title: The interplay between migration, gender, career stages, and citations: Evidence on German-affiliated researchers from Scopus July, 27-31, 2021
16. The 18th International Conference on Scientometrics & Informetrics (ISSI) Leuven, Belgium
 Oral presentation (online)
 Title: International migration in academia and citation performance: an analysis of German-affiliated researchers by gender and discipline using Scopus publications 1996-2020 July, 12-15, 2021
17. The 58th European Regional Science Association (ERSA) Congress Cork, Ireland
 Oral presentation (Young Scientist Session) August, 28-31, 2018
 Title: Modeling and Interpreting the Space-time Dynamics of Migration System: A case of Interprovincial Migration in China, 1985-2015

18. The 4th Asian Population Association (APA) Conference
Oral presentation
Title: Modeling and Interpreting the Space-time Dynamics of Migration System:
A case of Interprovincial Migration in China, 1985-2015
Shanghai, China
July, 11-14, 2018
19. The 26th International Conference on Geoinformatics
Oral presentation
Title: Modeling and Interpreting the Space-time Dynamics of Migration System:
A case of Interprovincial Migration in China, 1985-2015
Kunming, China
June, 28-30, 2018
20. The Asia GIS Conference 2017
Oral presentation
Title: Design and implementation of parallel geographically weighted k-nearest
neighbor classifier
Hong Kong, China
January, 5-7, 2017
21. The 33rd International Geographical Congress
Poster presentation
Title: The design and implementation of parallel gwk-NN classifier
Beijing, China
August, 21-25, 2016

Popular Press, Policy Features, and Science Communications:

1. [More female researchers than ever migrate internationally](#). *Nature* (March 2023)
2. [Wereldwijde mobiliteit onder vrouwelijke wetenschappers versnelt](#). *ScienceGuide* (March 2023)
3. [Female academics migrate shorter distances and to fewer countries than men, finds study](#). *Physicsworld* (March 2023)
4. [Female scientists miss out on overseas opportunities](#). *Nature.com* (March 2023)
5. [International recognition is important but female scientific researchers are less internationally](#). *ox.ac.uk* (February 2023)
6. [Migration of Academics Worldwide: Women in Science are Less Mobile but the Gender Gap has Shrunk](#). *demogr.mpg.de* (February 2023).
7. [Female researchers close global mobility gap on men](#). *Times Higher Education* (February 2023)
8. [A gender perspective on the global migration of scholars](#). *sciencenewsnet.in* (February 2023)
9. [A gender perspective on the global migration of scholars](#). *phys.org* (February 2023)
10. [A gender perspective on the global migration of scholars](#). *newswise* (February 2023)
11. [Will we ever see them again?](#) *Population Europe* (Jul 2022)

12. [Migration of German Scientists: Men Are More Likely to Return to Germany](#). *demogr.mpg.de* (June 2022)

13. [Migration of Scientists: Who Moves to Germany? Who Leaves Germany?](#) *demogr.mpg.de* (July 2021)

Academic Service

1. Peer reviewing for **Higher education policy** 2022
2. Co-organizing a preconference workshop “Using bibliometric data in demographic research” at the European Population Conference 2022.
3. Teaching Service: Training Workshop on “Spatial Data Lab” at the 10th Forum on Spatially Integrated Humanities and Social Science, 2019.
4. Reviewing for scientific journals and conferences: The Web Conference 2021 (sub-reviewer)

Awards and Honors

International:

1. Student Travel Award for the 18th International Conference on Scientometrics & Informetrics (ISSI) (2021)

National:

1. First prize of Excellent Paper at China Annual Conference on Theories and Methods of Geographic Information Science (2017)
2. Honorable award of the 6th GIS Skills Competition for College Students in China (2014)

Provincial and municipal:

1. First prize of Excellent Master Thesis of Surveying and Mapping in Jiangsu province (2019)
2. Second prize of Excellent Postgraduates' Thesis at Geography Postgraduates Forum in Jiangsu province (2016)
3. Grand prize of the 14th Challenge Cup National College Student Curricular Academic Science and Technology Works Completion in Hubei province (2015)

University and College Level :

1. International Max Planck Research School for Population, Health and Data Science / Departmental/ Leverhulme Centre for Demographic Science Scholarship
2. Second Prize Scholarship at Nanjing University (2018, 2017)
3. First Prize Scholarship at Nanjing University (2016)
4. Outstanding Graduate at China University of Geosciences (2016)
5. Presidential Scholarship at China University of Geosciences (2014, 2013)
6. Outstanding works award of the Winter Vacation Social Practice at China University of Geosciences (2014)
7. Second prize of College Physics Competition at China University of Geosciences (2014)

8. Third prize of Golden Idea Competition at China University of Geosciences (2013)

Additional Training

2022:

Advanced Methods for Causal Inference	Max Planck Institute for Demographic Research
12th Winter School on Longitudinal Social Network Analysis	University of Linköping

2021:

European summer school for scientometrics 2021	University of Vienna
Data visualization – the art/skill cocktail	Max Planck Institute for Demographic Research
Online webinar: Applied Regression Modeling	University of Greifswald
Population Grids & their Integration with Remote Sensing Data National Aeronautics and Space for Sustainable Development & Disaster Management	Earth Science Applied Science (NASA)

2020:

Demographic Methods	Max Planck Institute for Demographic Research
Digital and Computational Demography	Max Planck Institute for Demographic Research
Population Health	Max Planck Institute for Demographic Research
Basic Statistics for Demographers	European Doctoral School of Demography
Professional Development for Presentation	Max Planck Institute for Demographic Research

2017:

Understanding Complexity	University of Michigan-Peking University Joint Institute
Advanced Quantitative Methodology	University of Michigan-Peking University Joint Institute

Certificates

1. Information system project manager (senior)
2. Software developer
3. MapGIS development engineer

Academic Membership

1. IMSCOE (International Migration Research Network) PhD Academy
2. Migration Oxford
3. The International Max Planck Research School for Population, Health and Data Science (IMPRS-PHDS)

Computer and Language Skills

Proficient in programming (Python, R, C++, C#, JavaScript, Matlab)
Experienced in using professional software (ArcGIS, MapGIS, Erdas, GeoDa, SPSS, Flex)
Languages: Proficiency in written and verbal English; native in Chinese

Referees

Prof. Emilio Zagheni

Professor and Institute Director, Max Planck Institute for Demographic Research
zagheni@demogr.mpg.de

Dr. Ridhi Kashyap
Associate Professor of Social Demography, University of Oxford
ridhi.kashyap@nuffield.ox.ac.uk

Dr. Samin Aref
Assistant professor Department of Mechanical & Industrial Engineering, University of Toronto
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Dr. Yingxia Pu
Associate Professor, Nanjing University
yingxiapu@nju.edu.cn