Junjun Yin, Ph.D

Contact Information

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The Pennsylvania State University
University Park, PA, 16802, United States

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URL: www.junjunyin.com

Current Position

Assistant Research Professor
Social Science Research Institute
The Pennsylvania State University

ICDS Associate
Institute for Computational and
Data Sciences (ICDS)

Previous Position

Postdoctoral Research Fellow
CyberGIS Center for Advanced Digital and Spatial Studies
Department of Geography and Geographic Information Science
National Center for Supercomputing Applications (NCSA)
University of Illinois at Urbana-Champaign, IL, USA

Research Interests

GIScience; Geospatial Data Science; Geographic Big Data; Human-Urban Interactions; Human Mobility; Urban Informatics; (Geo)Visual-Analytics; Spatial Data Mining and Deep Learning (GeoAI); Spatial/Graph Neural Networks; High-performance (cyberGIS), Web, and Mobile GIS

Education

2009 - 2013 *Ph.D* in Spatial Information Science, Dublin Institute of Technology, Ireland
Scince Fundation Ireland Scholarship
Advisors: Dr. James D. Carswell (Dublin Institute of Technology), Dr. Michela Bertolotto (University College Dublin)

2006 - 2009 *MSc* in Geoinformatics, University of Gävle, Sweden
Advisor: Dr. Bin Jiang (University of Gävle)

2002 - 2006 *BSc* in Electronics Engineering, University of Electronic Science and Technology of China

Academic Experience

2017- Social Science Big Data Research Scientist, Pennsylvania State University, USA

2016 Lecturer, Department of Geography and Geographic Information Science; University of Illinois at Urbana-Champaign, USA

2014-2016 Postdoctoral Research Associate, CyberGIS Center for Advanced Digital and Spatial Studies; National Center for Supercomputing Applications; University of Illinois at Urbana-Champaign, USA

2013-2014 Assistant Lecturer, Dublin Institute of Technology, Ireland

2007-2008 Research Assistant, Hong Kong Polytechnic University, Hong Kong SAR, China

Research Grants and Projects

PI. "Deep learning for Fine-grained Population Estimation in the Arctic Region". Nvidia Academic Hardware Grant Program. Project dates: 06/01/2023—05/30-2024

Co-PI. "RAPID: Using Mobile Phone Data to Understand the Impacts of the COVID-19 Pandemic on Food Assistance Use in Alaska". NSF (National Science Foundation) SOC grant, $200,000. Project dates: 02/01/2022—01/31-2025

PI. "A Deep Learning-enabled Dasymetric Mapping Approach for Fine-Scale Population Estimation in Alaska". ICDS computational and Data Sciences seed grant award, $35,000 Project dates: 05/01/2020—03/30-2022

PI. "Mobility Patterns and Their Influence on Food Security in Alaskan Communities: Using Digital Trace Data for Social and Behavioral Research during the COVID-19 Pandemic". SSRI COVID-19 Pandemic Emergency Research Funding, $30,000 Project dates: 04/01/2020—03/30-2022

PI. "Identifying Discrimination During COVID-19 Pandemic on Twitter", ICDS (Institute for Computational and Data Sciences) COVID-19 explore grant, $5,840. Project dates: 07/01/2020—06/30-2022

Co-PI. "Are we more willing to speak up through mobile phones? A comparison of desktop vs. mobile political sharing on Facebook". SSRC (Social Science Research Council) grant, $49,017. Project dates: 02/01/2020—01/31-2021

Senior Personnel. "Pursuing Opportunities for Long-term Arctic Resilience for Infrastructure and Society". NSF (National Science Foundation) NNA grant, $3,000,000. Project dates: 01/01/2020—12/31-2022

Co-PI. "RR: The Generalizability and Replicability of Twitter Data for Population Research". NSF (National Science Foundation) SOC grant, $500,000. Project dates: 07/15/2018—06/30-2021

Co-PI. "Understanding National Park Visitors' Spatial Behavior with Twitter Data". Penn State Seed Grant (SSRI, ICS, and IST), $20,000. Project dates: 03/01/2019—02/28-2021

PI. "Data Science: Mining sequential mobility patterns from semantic Twitter user trajectories". Microsoft Azure Data Science Research Award, $10,000. Project dates: 05/01/2018—04/30/2019

Co-PI. "An Innovative Approach to Tackle the Opioid Epidemic: Utilizing Twitter Data and Integrating Big Data Analytics and Spatial and Social Network Analyses'. Social Science Research Institute Level 2 Research Award, $20,000. Project dates: 09/01/2018—08/30-

2020

Co-I. "Cognitive Changes Associated with Hormonal Treatment for Breast Cancer". Health & Environment initiative seed grant award, $49,972. Project dates: 07/01/2017—06/30-2019

Co-PI. "The Generalizability and Replicability of Twitter Data for Population Research". ICS seed grant award, $35,000. Project dates: 07/01/2018—06/30-2019

Co-PI. "Ecological Migration in a Large-Scale Quasi-Experiment Design in China: Implications of Climate Change, Landscape Structure, Ecosystem Services and Government Intervention". IEEE seed grant award, $25,000. Project dates: 04/15/2017—06/30-2018

PI. "Mining Twitter User Demographics as a First-Step in Big Data for Population Research". XSEDE (Extreme Science and Engineering Discovery Environment) Startup computational resource allocation award, 50,000 SUs & 40 TB storage (estimated $2,794.78). Project dates: 03/27/2017—03/26-2019

PI. "A cloud computing enabled GIS platform for the integration and synthesis of multi-layer geospatial data sources in urban studies: Understanding urban dynamics from geospatial Big Data". Microsoft Azure Data Science Research Award, $20,000. Project dates: 12/04/2016—12/03/2017

SP/Research Scientist. "Activity space contexts and measuring environmental exposure in behavioral research". R21 NCI grant (ASCMEE Study).

Publications

Online: Google Scholar

Submitted and In preparation

2024 **Yin, J.** Unlocking the Secrets of Scenic Beauty: An artificial intelligence approach to understanding public perceptions of environmental aesthetics. (*submitted to Journal of the Royal Society Interface, in revision*)

2024 **Yin, J.**, Brooks, M., Wang, D. and Chi, G., Characterizing Climate-Change Sentiment in Alaska with Twitter Data. (*submitted to Digital Geography and Society, in revision*)

2024 Chi, G., **Yin, J.**, Van Hook, J., Plutzer, E. and Xu, H., The Mis-representativeness of Twitter Data. (*submitted to Demography, in review*)

2024 Chi, G., Morris, L., **Yin, J.** and Sundar, S.S., County Partisanship Affects Engagement with X (Twitter) Over the Course of a Global Pandemic. (*submitted to Journal of Health Politics, Policy and Law, in review*)

Peer Reviewed Journals

2024 Sundar, S.S., Snyder, E., Liao, M., **Yin, J.**, Wang, J., and Chi, G., Sharing without clicking: The concerning phenomenon of mindless news forwarding on social media. *Nature Human Behaviour*. (DOI:10.1038/s41562-024-02067-4)

2024 Chi, G., Zhou, S., Mucioki, M., Miller, J., Korkut, E., Howe, L., **Yin, J.** et al. "Climate impacts on migration in the Arctic North America: existing evidence and research recommendations." *Regional Environmental Change*, 24(2): 47

2023 **Yin, J.** and Chi, G. (2023), A Tale of Three Cities: Uncovering human-urban interactions with geographic-context aware social media data. *Urban Informatics, 1(1), 20* (DOI:10.1007/s44212-022-00020-2)

2023 Yu, M., Zhang, S., Zhang, K., **Yin, J.**, Varela, M. and Miao, J. (2023), Developing high-resolution PM2.5 exposure models by integrating low-cost sensors, automated machine learning, and big human mobility data. *Frontiers in Environmental Science* (DOI:10.3389/fenvs.2023.1223160)

2023 Liang, Y., **Yin, J.**, Park, S., Pan, B., Chi, G., and Miller, Z. (2023), Using social media user profiles to identify visitor demographics and origins in Yellowstone national park. *Journal of Outdoor Recreation and Tourism* (DOI:10.1016/j.jort.2023.100620)

2022 **Yin, J.**, Gao, Y. and Chi, G. (2022), An evaluation of geo-located Twitter data for measuring human migration. *International Journal of Geographical Information Science*, 36(9), pp. 1830-1852, DOI: 10.1080/13658816.2022.2075878

2022 Li, C., Zhao, J., **Yin, J.** and Chi, G. (2022), Park access affects physical activity: new evidence from geolocated Twitter data analysis. *Journal of Urban Design* (DOI: 10.1080/13574809.2022.2118698)

2022 Alba, C., Pan, B., **Yin, J.**, Rice, W., Lin, M., Liang, Y. and Mitra, P. (2022), COVID-19's impact on visitation behavior to US national parks from communities of color - evidence from mobile phone data. *Scientific reports*, 12:13398, DOI: 10.1038/s41598-022-16330-z

2022 Liang, Y., **Yin, J.**, Pan, B., Lin, M., Millerm, L., Taff, D., Chi, G. (2022), Assessing the Validity of Mobile Device Data for Estimating Visitor Demographics and Visitation Patterns in Yellowstone National Park. *Journal of Environmental Management*, 317(115410), DOI:10.1016/j.jenvman.2022.115410

2022 Chi, G., **Yin, J.**, Morris, L., and Bodovski, Y., Global Tweet Mentions of COVID-19 (2022). *Health Data Science*

2021 **Yin, J.** and Chi, G., Characterizing People's Daily Activity Patterns in the Urban Environment: A mobility network approach with geographic context-aware Twitter data. *Annals of the Association of American Geographers*, 111(7), pp.1967-1987

2020 Abdar, M., Basiri, M.E., **Yin, J.**, Asadi, S. and Chi, G. (2020), Energy Choices in Alaska: Mining People's Perception and Attitudes from Geotagged Tweets. *Renewable & Sustainable Energy Reviews*, 124, p.109781

2019 Pu, Y., Zhao, X., Chi, G., Zhao, S., Wang, J., Jin, Z. and **Yin, J.** (2019). Design and implementation of a parallel geographically weighted k-nearest neighbor classifier. *Computers & Geosciences*, 127, pp. 111-122

2018 Gao, Y., Wang, S. Padmanabhan, A., **Yin, J.** and Cao, G. (2018). Mapping Spatiotemporal Patterns of Events Using Social Media: A Case Study of Influenza Trends. *International Journal of Geographical Information Science*, 32(3), pp. 425-449

2017 **Yin, J.**, Soliman, A., Yin, D. and Wang, S. (2017). Delineate Urban Boundaries in Great Britain from the Network of Large Scale Twitter User Spatial Interactions. *International Journal of Geographical Information Science*, 31(7), pp. 1293-1313

2017 Soliman, A., Soltani, Q., **Yin, J.**, Padmanabhan, A., and Wang, S (2017). Social sensing of urban land use based on analysis of Twitter users' mobility patterns. *PLoS ONE*, 12(7): e0181657. DOI:10.1371/journal.pone.0181657

2017 Zheng, K., Kwan, M.P., Fang, L., **Yin, J.**, Gu, D. and Fu, Y. (2017). A Topology-concerned Spatial Vector Data Model for Column-oriented Databases. *International Journal of Database*

Theory and Application, 10(5), pp. 33-46

2016 **Yin, J.**, Gao, Y., Du, Z. and Wang, S. (2016). Exploring Multi-Scale Spatiotemporal Twitter User Mobility Patterns with a Visual-Analytics Approach. *ISPRS International Journal of Geo-Information*, 5(10):187.

2016 Jiang, B., Ma, D., **Yin, J.** and Sandberg, M. (2016). Spatial Distribution of Tweet Numbers and Densities in Cities. *Geographical Analysis*, 48(3), pp. 337-351

2015 Jiang, B.,**Yin, J.** and Liu, Q. (2015). Zipf's Law for All the Natural Cities around the World. *International Journal of Geographical Information Science, 29(3), pp. 498-522*

2014 Jiang, B. and **Yin, J**. (2014). Ht-Index to Quantify the Fractal or Scaling Structure of Geographic Features. *Annals of the Association of American Geographers*, 104(3), pp. 530–540

2013 **Yin, J.** and Carswell, J.D. (2013). Spatial Search Techniques for Mobile 3D Queries in Sensor Web Environments. *ISPRS International Journal of Geo-Information*, 2(1): pp.135-154

2010 Carswell, J. D., **Yin, J.** and Gardiner, K. (2010). 3DQ: Threat Dome Visibility Querying on Mobile Devices *GIM International*, 24(8)

2010 Carswell, J.D., Gardiner, K. and **Yin, J.** (2010). Mobile Visibility Querying for LBS. *Transactions in GIS*, 14(6): pp. 791-809, Wiley online library

2009 Jiang, B., **Yin, J.** and Zhao, S. (2009). Characterizing the human mobility pattern in a large street network. *Physical Review E*, 80(2), 021136

2008 Jiang, B., Zhao, S. and **Yin, J.** (2008). Self-organized natural roads for predicting traffic flow: a sensitivity study. *Journal of statistical mechanics: Theory and experiment*, P07008, IOP Publishing

Peer Reviewed Conferences and Lecture Notes

2023 **Yin, J.** and Chi, G. (2023). Fine-grained Population Estimates: Infusing Deep Learning into Dasymetric Mapping of Buildings. *2023 North American Meetings of the Regional Science Association Internationa*, San Diego, CA, November 15 -18, 2023

2022 Miller, J., **Yin, J.** and Chi, G. (2022). Does Environmental Perception Matter? Using Twitter Data to Explore the Mediating Effects of Environmental Risk Perception on Out-Migration From Coastal Alaska. *Population Association of America (PAA) Annual Meeting*, April 6-9, 2022 (full paper, oral presentation)

2022 Pan, B., Savanapelli, V., Shukla, A., **Yin, J.**∗ (2022). Monitoring Human-Wildlife Interactions in National Parks with Crowdsourced Data and Deep Learning. *Proceedings of the ENTER 2022 eTourism Conference*, January 11-14, 2022 (∗*corresponding author,* ∗Best paper award)

2021 Liang, Y., **Yin, J.**, Lin, M., Pan, B., Chi, G. (2021). Assessing the validity of SafeGraph data for visitor monitoring in Yellowstone National Park. *Travel and Tourism Research Association: Advancing Tourism Research Globally*, June 14-16, 2021, Fort Worth, Texas, USA

2021 **Yin, J.**, Brooks, M., Wang, D. and Chi, G. (2021). Characterizing Climate-Change Sentiment in Alaska with Twitter Data. *Population Association of America (PAA) Annual Meeting*, May 5-8, 2021 (full paper, oral presentation)

2021 **Yin, J.**, Gao, Y.. Chi, G. and Van Hook, J. (2021). An Evaluation of Geo-located Twitter Data for Measuring Human Migration. *Population Association of America (PAA) Annual Meeting*, May 5-8, 2021 (full paper, oral presentation)

2020 Liang, Y., **Yin, J.**, Pan, B., Chi, G., Andris, C., Miller, Z., Jorgenson, J. and Nickerson, N.

(2020). Understanding Demographics and Experience of Tourists in Yellowstone National Park through Social Media. Travel and Tourism Research Association: Advancing Tourism Research Globally. 54

2019 **Yin, J.**, and Chi, G. (2019). Understanding Spatiotemporal Urban Activity Patterns with Geo-located Twitter Data: A GIS-based Synthesis Approach. *66th Annual North American Meetings of the Regional Science Association International (NARSC)*, November 13-16, 2019, Pittsburg, Pennsylvania

2019 **Yin, J.**, and Chi, G. (2019). An Evaluation of Geo-located Twitter Data as Indicators for Human Migration. *IUSSP Research Workshop on Digital Demography in the Era of Big Data*, June 6-7, 2019, Seville, Spain

2019 Chi, G., **Yin, J.**, Van Hook, J., Plutzer, E. and Heng, X. (2019). The Generalizability of Twitter Data for Population Research. *Population Association of America (PAA) Annual Meeting*, April 22-25, Washington, DC, USA

2018 **Yin, J.**, Chi, G. and Van Hook, J. (2018). Evaluating the Representativeness in the Geographic Distribution of Twitter User Population. *The 12th Workshop on Geographic Information Retrieval in ACM SIGSPATIAL 2018*, November 6-9, 2018, Seattle, Washington, USA

2018 Jeong, M., **Yin, J.**, and Wang, S. (2018). Outliers Detection and Comparison of Origin-Destination Flows with Data Depth. *The 10th International Conference on Geographic Information Science (GIScience 2018)*, August 28-31, 2018, Melbourne, Australia

2017 **Yin, J.** (2017). Mining sequential mobility pattern from semantics enriched Twitter user trajectories. *NSF Mobility Workshop on Analyzing Movement and Mobility within Geographic Context*, May 11-12, 2017, The Ohio State University, Columbus, Ohio

2017 Chi, G., **Yin, J.** and Hook, J.V. (2017). Predicting Twitter User Demographics as a First Step in Big Data for Population Research. *The 28th International Population Conference of the International Union for the Scientific Study of Population*, October 29-November 4, 2017, Cape Town, South Africa

2016 **Yin, J.**, Lu, B., Yin, D. and Wang, S. (2016). A scalable visual-analytics approach for studying mobility networks: Revealing hierarchical structures in taxi mobility flows of New York, *The Third International Conference on CyberGIS and Geospatial Data Science*, July 26-28, 2016, Urbana, Illinois

2016 **Yin, J.**, Gao, Y. and Wang, S. (2016). Urban Sensing from Volunteered Citizen Participation using Mobile Devices. In *Seeing Cities through Big Data: Research, Methods and Applications in Urban Informatics*, Springer

2015 Soliman, A., **Yin, J**, Soltani, K., Padmanabhan, A., and Wang, S. (2015). Where Chicagoans tweet the most: Semantic analysis of preferential return locations of Twitter users, *1st International Workshop on Smart Cities and Urban Analytics 2015, 23rd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*

2014 **Yin, J.** and Wang, S. (2014). Understanding the Evolvements of Natural Cities from Nighttime Light Images: A CyberGIS-Enhanced Approach to Large Scale Geospatial Data Analysis, *The Second International Conference on CyberGIS and Geodesign*, August 19-21, 2014, Redlands, California

2014 **Yin, J.**, Gao, Y. and Wang, S. (2014). CyberGIS Enabled Urban Sensing from Volunteered Citizen Participation using Mobile Devices. *NSF Workshop on Big Data and Urban Informatics 2014*

2013 Truong-Hong, L., Thi, T.T.P, **Yin, J.** and Carswell, J.D. (2013). Detailed 3D building models

for Google Earth integration. In *Proceedings of the 13th International Conference on Computational Science and Its Applications (ICCSA 2013)*, Ho Chi Minh City, Vietnam: Springer (∗***Best paper award***)

2013 Thi, T.T.P, Truong-Hong, L., **Yin, J.** and Carswell, J.D. (2013). Exploring Spatial Business Data: A ROA-based eCampus application. In *Proceedings of the 11th International Conference on Web and Wireless Geographical Information Systems*, Banff, AB: Springer Berlin Heidelberg, pp. 164-179

2012 **Yin, J.** and Carswell, J.D. (2012). Effects of Variations in 3D Spatial Search Techniques on Mobile Query Speed vs Accuracy. *Web and Wireless Geographical Information Systems*, Naples, Italy. (∗***Best paper award***)

2012 Carswell, J.D. and **Yin, J.** (2012). Mobile Spatial Interaction in the Future Internet of Things. In *Proceedings of the 20th International Conference on Geoinformatics (GEOINFORMATICS)*, 2012, pp. 1-6

2012 **Yin, J.** and Carswell, J.D. (2012). MobiSpatial: Open-source for Mobile Spatial Interaction. *Proceedings of the 27th Annual ACM Symposium on Applied Computing*, pp. 572-573

2012 **Yin, J.** and Carswell, J.D. (2011). Touch2Query enabled mobile devices: A case study using OpenStreetMap and iPhone. *Web and Wireless Geographical Information Systems*, pp. 203-218, Springer

2009 Gardiner, K., **Yin, J.** and Carswell, J.D. (2009). EgoViz: A mobile-based spatial interaction system. *Web and Wireless Geographical Information Systems*, pp. 135-152, Springer

Books

2009 **Yin, J.** (2009), *The Topological Patterns of Urban Street Networks: Exploring the topological patterns of urban street networks from analytical and visual perspectives*, VDM: Germany, ISBN: 3639161734

Data

2020 **Yin, J.**. Estimation of Twitter user demographics in the USA, 2014. *Harvard Dataverse*, doi:10.7910/DVN/PKKAPK

Invited talks

2024 Yin, J. (2024). Modeling Geo-Complexity in Human-Urban Interactions: Computational Geography meets Geographic Big Data. June 2024, Department of Geography, the University of Manchester, United Kingdom

2024 Yin, J. (2024). A New Era of Urban Informatics: Multi-Layered Data Synthesis Approaches and Frameworks. June 2024, Department of Geography and Environmental Science, the University of Southampton, United Kingdom

2023 Yin, J. (2023). Geographic Data Science: Spatial Data mining and machine learning with mobility Big Data. April, 2023, Department of Geography, the University of Liverpool, United Kingdom

2022 Yin, J. (2022). A computational geography approach to understanding human-urban environment interactions. July 2022, Department of Land Surveying and Geo-Informatics

(LSGI), the Hong Kong Polytechnic University, Hong Kong SAR, China

2021 Yin, J. (2021). Human-Urban Interactions: A computational geography approach. October 2021, Department of Geography, Pennsylvania State University, University Park, PA, USA

2020 Yin, J. (2020). Uncovering universal human activity patterns with geospatial big data: complexity, unity, and regularity. March 2020, Auburn University, Auburn, AL, USA

2020 Yin, J. (2020). Computational Social Sciences: spatial interactions and geo-complexity. February 2020, University of Arkansas, Fayetteville, AR, USA

2019 Yin, J. (2019). Spatial Networks: A computational geography approach to new insights into spatial interactions and geo-complexity. January 2019, University of Florida, Gainesville, FL, USA

2018 Yin, J. (2018). Computational Geography for Capturing Geo-Complexity in Urban Studies. June 2018, Newcastle University, Newcastle upon Tyne, UK

2018 Yin, J. (2018). Advanced Methods and Techniques for Big GeoData. June, 2018, ITC, University of Twente, Enschede, the Netherlands

2018 Yin, J. (2018). Geo-Complexity and Human mobility: Through the lens of spatial Big Data to understand urban dynamics. February, 2018, University of Denver, Denver, USA

2018 Yin, J. (2018). High-performance Computing with Hadoop. Software in the Humanities and Social Sciences Workshop. February, 2018, Penn State, University Park, USA

Presentations

2018 Yin, J. (2018). Spatial Interaction Patterns of Preferential Return Behaviors in People's Daily Life. The Association of American Geographers Annual Meeting, April 10-14, 2018, New Orleans, Louisiana, USA

2017 Yin, J. (2017). A mobility network approach to modeling urban spatial interactions: Insights from the movement Big Data in New York City. The Association of American Geographers Annual Meeting, April 5-9, 2016, Boston, Massachusetts, USA

2016 Yin, J. and Wang, S. (2016). Mining Mobility Patterns From Semantic Twitter User Trajectories. The Association of American Geographers Annual Meeting, March 29-April 2, 2016, San Francisco, California, USA

2015 Yin, J. and Wang, S. (2015). Finding community structures of UK cities based on large-scale Twitter user mobility patterns, *Association of American Geographers Annual Meeting, Chicago, 2015*, April 21-25, 2015, Chicago, Illinois, USA

2011 Yin, J. (2011). Web-service based Mobile Geospatial Application Development using Python, *PyCon 2011*, Dublin, Oct 8-9

Teaching/Instructing

2024 Stochastic Modeling and Computation (SMAC series): Geographic Data Science, *Guest lecturer*, Penn State

2023 SoDA501 : Social Data Analytics, Spring, *Guest lecturer*, Penn State

2022 Quantitative Developmental Systems Methodology (QuantDev Series): Machine learning/Deep learning for text analysis in social science applications, *Guest lecturer*, Penn State

2021- Spatial Networks, *lecturer*, Penn State

2017- Computational Social Sciences: data, methods, and applications, *lecturer*, Penn State

2016 GEOG 479: Advanced Topics in GIS – CyberGIS, Spring, 2016, *Lecturer*, Department of Geography and Geographic Information Science, UIUC

2015 Parallel Databases, *workshop/short course series*, CyberGIS Center, UIUC

2015 Interactive Visualization of Large-scale Movement Data using Apache Spark, *Summer school series*, CyberGIS Center, UIUC

2015 Introducing the CyberGIS Toolkit in high performance computing environment, *workshop/short course series*, CyberGIS Center, UIUC

2015 Taming with geospatial Big Data with Hadoop, *workshop/short course series*, CyberGIS Center, UIUC

2014 Getting to know CyberGIS, *workshop/short course series*, CyberGIS Center, UIUC

2014 - 2016 Education and outreach at the CyberGIS Commons, *Lead*, University of Illinois at Urbana-Champaign, 2014 - 2016

2013 Programming in C, *assistant lecturer*, Dublin Institute of Technology, 2013 - 2014

2013 Object oriented programing for game development, *senior demonstrator/assistant lecturer*, Dublin Institute of Technology, 2013 - 2014

2013 User interface design and GUI programing with Java, *senior demonstrator/assistant lecturer*, Dublin Institute of Technology, 2013 - 2014

Mentorship

2023 Project: Mobility Big Data for studying return migrations amid natural disasters and environmental change. Ph.D student: Yining Feng

2023 Drawdown (Climate Change) Scholar mentor. Project: Geospatial Analysis of Socioeconomic Factors Impacting Electric Vehicle Charging Station Accessibility. Student: Fazil Farhan Iqbal

2022 Project: Exploring national park visitor dynamics with Location Based Social Media and Mobile Location Data. Ph.D student: Yun Liang (Currently Teaching Assistant Professor at Kansas State University)

2021 Capstone program mentor. Project: Assessing the impact of the COVID-19 pandemic on national park visitor patterns with model-driven approaches and mobility Big Data. Undergraduate student: Charles Alba (Currently Ph.D student at the Washington University in St Louis)

Skills

Programing languages: Python, R, Java, Objective-C, Matlab, JavaScript, NoSQL
Neural nets: ResNet, U-net, Convolutional Neural Networks, Graph Neural Networks
High performance computing (HPC): Hadoop, Spark, MongoDB
Mobile and web geo-visualization: iOS and Android, Cesium 3D Globe, D3.js
Spatial databases: PostGIS, Oracle Spatial, SpatiaLite, ArcGIS

Honors and Awards

2013 *Fiosraigh Head of School Research Award*: for excellence in research, Dublin Institute of Technology

2013 *EU Future Internet Award*: for excellence in Future Internet research

2009 *PhD scholarship from Science Foundation Ireland (SFI)*: StratAG PhD scholarship

2006 *Outstanding Graduate Student Award*: University of Electronic Science and Technology of China

2006 *Best Undergraduate Dissertation Award*: Department of Electronic Engineering, University of Electronic Science and Technology of China

2005 *National Undergraduate Electronic Design Contest: Second prize*:Embedded system for Multi-channel and frequency wave generating, (Team: Junjun Yin, Yu Chen, and Xia Yu)

Service to the Profession

Editorial board

- **Editorial board member** Journal of Geography and Cartography
- **Topic editor** Geosciences
- **Guest editor** Special Issue of "Spatial Demography": Big Spatial Data in Demography (2023)
- **Guest editor** Special Issue of "Chinese Sociological Dialogue": Spatiotemporal Big Data and Sustainable Social Development (2017)

Program Committees and Organizers

- **PC** member for W2GIS 2020: 18th International Symposium on Web and Wireless Geographical Information Systems, Wuhan, China, May 14-15, 2020
- **Chair** for Innovations in Spatial Data Analysis and Modeling, 66th Annual North American Meetings of the Regional Science Association International (NARSC), Pittsburg, Pennsylvania, November 13-16, 2019
- **PC** member for W2GIS 2019: 17th International Symposium on Web and Wireless Geographical Information Systems, Kyoto, Japan, May 16-17, 2019
- **PC** member for International Conference on Location-based Social Media Data, March 5-7, 2015, Athens, Georgia, USA
- **Co-chair** for Advances in Spatial Interaction Models and Methods in the Big Data Era I, Spatiotemporal Symposium, 2018 AAG Annual Meeting, New Orleans, April 10 – April 14, 2018
- **Chair** for Big Movement Data for Geospatial Analytics on Urban Interactions, Symposium on Human Dynamics in Smart and Connected Communities, 2017 AAG Annual Meeting, Boston, Massachusetts, April 5 - April 9, 2017

- **Chair** for Understanding Urban Dynamics Based on Movement Big Data, 2016 AAG Annual Meeting, San Francisco, California, March 29 - April 2, 2016

Reviewer for Proposals

- ***Methodology, Measurement, and Statistics Program***, *National Science Foundation* (2019)

Reviewer for Journals

Reviewed articles from over **50** journals, including Annals of the American Association of Geographers, International Journal of Geographical Information Science, and Applied Geography, etc.