Bo Zhao

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Academic Positions

University of Washington

2021-now Associate Professor, Department of Geography. Affiliations: eScience Institute, China Studies Program, Center for Studies in Demography & Ecology, Center for Informed Public, and Urban Design & Planning Program.

2019-21   Assistant Professor, Department of Geography

Oregon State University

2016 - 19   Assistant Professor, College of Earth, Ocean, and Atmospheric Sciences

Harvard University

2016 - 17   Non-residential Fellow, J.F. Kennedy School of Government

2015 - 16   Rajawali Fellow, J.F. Kennedy School of Government

Education

2012 - 15   Ph.D. in Geography, Ohio State University

2006 - 08   M.S. in Cartography and GIScience, Nanjing University, China

2002 - 06   B.S. Honors in GIScience, Nanjing University, China

Fields of Specialization

Humanistic GIS, social implications of emerging GIS technologies.

Fake Geographies, deepfake geography and location spoofing.

Geospatial Artificial Intelligence (GeoAI) and geospatial big data analysis.

Grants – Awarded & Pending

2020-24. NSF Human-Environment and Geographical Sciences (HEGS): Examining Shifting Geographies of Historically Underrepresented Groups (Award ID: 1951072). $395,839. Lawrence Knopp (PI, UW), Michael Brown (Co-PI, UW), and Bo Zhao (Co-PI, UW).

2019-21. NSF Coastlines and People (CoPe) EAGER: Coastal Hazard Planning in Time (Award ID: 1940024). $297,288. Daniel Abramson (PI, UW), Ann Bostrom (Co-PI, UW), Harold Tobin (Co-PI, UW), Jeffrey Berman (Co-PI, UW), and Bo Zhao (Co-PI, UW).

2023. Critical and Creative (Un)Mapping of the Capitol Hill Organized Protest (CHOP), UW Humanities Data Science Summer Institute. ~$22,000. Jin-Kyu Jung (PI, UW), Bo Zhao (Co-PI).

2022. Samsung/Joule: Develop a Machine Learning Algorithm to Detect Deepfaked Satellite Imagery. $64,970. Bo Zhao (PI).

2022. Population Health Initiative: Innovating Better Method to Enumerate Individuals Experiencing Homelessness. $106,822. Amy Hagopian (PI), Owen Kajfasz (Co-PI, King County Regional Homeless Authority), Bo Zhao (Co-PI, UW), Paul Hebert (CO-PI), Zack Almquist, Gang Luo (Co-PI), Adrian Dobra (Co-PI).

2022. UW's Data Science Minor Grant: Developing A new course on Web programming for GIS Applications. $20,000. Bo Zhao (PI, UW).

2021-22. Urban@UW Research Spark Grants: Improving the enumeration of Individuals experiencing homelessness in the U.S. using anonymous cell phone location data. $19,299 Amy Hagopian (PI, UW), Paul Hebert (Co-PI), Bo Zhao (Co-PI), Adrian Dobra (Co-PI) and Gang Luo (Co-PI).

2020-21. NIH National Heart, Lung, and Blood Institute (NLHBI) Prevention and Early Treatment of Acute Lung Injury (PETAL) Network (CORAL Study, Award ID: 3U01HL 123009-06S2), $69,173 Boyd T. Thompson (PI, MGH), Bo Zhao (Site PI, UW).

2020 Population Health Initiative: COVID-19 economic recovery research grants. Building a Smart Dashboard to Characterize Risk to Washington Workers during the COVID-19 Economic Recovery. $19,537. Bo Zhao (PI, UW), Marissa Baker (CO-PI, UW), Kim England (Co-PI, UW).

2020. UW's Data Science Minor Grant: Redeveloping Geography 458: Advanced Digital Geographies. $20,000. Bo Zhao (PI, UW).

2018-20. Turfgrass Water Conservation Alliance (TWCA), Geovisual analytic platform for TWCA. $15,000. Bo Zhao (PI, OSU).

2018-19. Clean Water Service: Interaction of Geovisualization and Wikipedia to demonstrate the Fanno Creek Watershed. $50,000. Bo Zhao (PI, OSU).

2018-19. National Geographic. The Global Refugee Atlas (Award ID: NGS-51699S-18). $68,383. Bo Zhao (PI, OSU), Jamon Van De Hoek (Co-PI, OSU), and Jennifer Alix-Garcia (Co-PI, OSU).

2017-18. Clean Water Service. Map based Storytelling of the Shifting Mindset About Reuse Water. $50,000. Bo Zhao (PI, OSU).

2017. NSF Research Experience for Undergraduates (REU) Grant (NSF-DEB-1440409): Building Wireless Network of Bots for Monitoring Ecosystem of Forest at Andrew Long Term. $8,000. Bo Zhao (PI, OSU).

2017. American Alpine Club Research Grant. An Open-Source Automated Weather Station for Wireless Sensor Networks in High Altitude/Latitude Environments. $1,000. Christopher Cosgrove (PI, OSU), Bo Zhao (Faculty Advisor, OSU), Ann Nolin (Faculty Advisor, OSU).

2016-18. Google Education Grant: Google Cloud Platform for Web Mapping and Geovisualization. Cloud resources for instructor and students. $1,100 per quarter for three quarters ($100 for the instructor, $100 for each teaching assistant, and $50 for each student in class. 18 students on average for each course). Bo Zhao (PI, OSU).

2016-17. Learning Innovation Grant: Human-Geospatial Data Interaction: Leveraging Virtual Reality to Extend Teaching and Learning in Geovisualization. $9,857. Bo Zhao (PI, OSU).

2015-16. Rajawali Fellowship. J.F. Kennedy School of Government, Harvard University. $50,000.

Publications - In Preparation

2024 Knopp, L., **B. Zhao**, & M. Brown, Shifting Spatialities of LGBTQ Life: Supporting Queer Geographical Imaginations in Mapping and Visualization, *Annals of the American Association of Geographers.*

2024 Dodge, S., A. Frazier, M. Goodchild, P. Kedron, … **B. Zhao**, …, J. Wilson, A Research Agenda for GIScience and Spatial Data Science Amid Disruptions to Science, International Journal of Geographical Information Science

Publications – Under Review (* indicates my advisee, + shows my role as corresponding author)

2024 (under review) Sun, Y.* & **B. Zhao**+. Spatial Misinformation. in *Oxford Handbook of Spatial Humanities* eds. A. Gardner. Oxford University Press.

2024 (under revision) Lin, Y. & **B. Zhao.** Post-human cartography? Rethinking artificial intelligence, cartographic practices, and reflexivity. *Annals of the American Association of Geographers.*

2024 (under review) Hong, R. & **B. Zhao.** Root Metaphors in Cartography: Bridging Theories and Praxes. *Transactions of the Institute of British Geographers.*

2024 (under revision) **Zhao B.**, J. Feng*, Y. Sun, X. Chang, & S. Shaw**.** Neural Sensing: Towards a new approach to understanding emotional responses to place. *Transactions in GIS*

Publications - Journal Articles with Peer Review

2024 **Zhao, B.** & L. Zhang. Understanding the Spatial Narratives of Puzzle Films Using Cognitive Maps. *Professional Geographer.*

2024 Lin, B., L. Zou, **B. Zhao**, X. Huang, H. Cai, M. Yang, & B. Zhou. Sensing the Pulse of the Pandemic: Geovisualizing the Demographic Disparities of Public Sentiment toward COVID-19 through Social Media. *Cartography and Geographic Information Science*

2024 Peng, L* & **B. Zhao**. Navigating the Ethical Landscape Behind ChatGPT. *Big Data & Society.* doi: 10.1177/20539517241237488

2024 Feng, J*, **B. Zhao**, & S. Shaw. The Study of Emotion in GIScience: Status and Prospects. *Cartography and Geographic Information Science.* doi: 10.1080/15230406.2024.2326153

2023 MacKenzie, A.C., S.J. Dundas, **B. Zhao**. The Instagram effect: Is social media influencing visitation to public land? *Land Economics.* doi: 10.3368/le.100.2.122920-0192R1

2023 **Zhao, B.** Emplacing the disposition towards automation. *Dialogue in Human Geography.* doi: 10.1177/2043820623115142

2023 **Zhao, B.** Reorient GIScience for a Data-intensive Society. *Dialogue in Human Geography.* doi: 10.1177/20438206231179230

2023 Yang, Y., Chen, X., Gao, S., Li, Z., Zhang, Z., & **Zhao, B**. Embracing geospatial analytical technologies in tourism studies. *Information Technology & Tourism*, doi: 1-14. 10.1007/s40558-023-00249-w

2022. Yu, Y., B. Dylan, **B. Zhao.** Digital geographies of the bug: A case study of China's contact tracing systems in the COVID-19. *GeoForum,* doi: 10.1016/j.geoforum.2022.10.007.

2022 Bennett, M. M., Van Den Hoek, J., **B. Zhao** & Prishchepov, A. V. Improving Satellite Monitoring of Armed Conflicts. *Earth's Future*, doi: 10.1029/2022EF002904.

2022 Huang, X., X. Bao*, Z. Li, S, Zhang, **B. Zhao**+. Black businesses matter: A longitudinal study of black-owned restaurants in the COVID-19 Pandemic. *Annals of the American Association of Geographers.* doi: 10.1080/24694452.2022.2095971

2022 Chen, X., **B. Zhao**. X. Yang. The obesogenity of restaurant food: Mapping the nutritional foodscape of Franklin County, Ohio using food review images. *Applied Geography.*

2022 Zhang, S., D. Xu, **B. Zhao**. "Small" analysis of Big Data: An evaluation of the effects of social distancing in the United States. *Methodological Innovations*. https://doi.org/10.1177/20597991221090856

2022 Huang, X., Y. Xu, R. Liu, Siqin. Wang, Sicheng. Wang, M. Zhang, Y. Kang, Z. Zhang, S. Gao, **B. Zhao**, & Z. Li. Exploring the spatial disparity of home-dwelling time patterns in the U.S. during the COVID-19 pandemic via Bayesian inference. *Transactions in GIS*. doi: 10.1111/TGIS.12918

2022. **Zhao**, **B.** Humanistic GIS: Towards a Research Agenda. *Annals of the American Association of Geographers*. doi: 10.1080/24694452.2021.2004875

2022. Yu, Y., **B**. **Zhao.** Can TikTok Promote a Healthier Ageing Paradigm? A Case Study of Older Digital Celebrities from China. *Area*. doi: 10.1111/area.12777

2022. 乐阳, … **赵博**…空间和地理计算与计算社会学的融合路径. *武汉大学学报*. 47(1): 1-18 (Yue, Y. … **B. Zhao** … Integration Path of Spatial and Geo-Computing and Computational Social Science. *Wuhan University Journal* 47(1): 1-18). doi: 10.13203/j.whugis20210619

2021. He, C., Q. Huang, X. Bai, D.T. Robinson, P. Shi, Y. Dou, **B. Zhao**, J. Yan, Q. Zhang, F. Xu, J. Daniel. A Global Analysis of the Relationship between Urbanization and Fatalities in Earthquake-prone Areas. *International Journal of Disaster Risk Science*. doi: 10.1007/s13753-021-00385-z

2021. **Zhao, B.**, S. Zhang, C. Xu*, Y. Sun*, and C. Deng. Deep fake geography? When geospatial data encounter artificial intelligence. *Cartography and Geographic Information Science*. 48(4), 338-352. doi: 10.1080/15230406.2021.1910075

2021. Mathews, K.S., K.P. Seitz, K.C. Vranas, A. Duggal, T.S. Valley, **B. Zhao**, S. Gundel, M.O. Harhay, S.Y. Chang, C.L. Hough. Variation in initial U.S. Hospital Responses to the Coronavirus Disease 2019 Pandemic. *Critical Care Medicine*. doi: 10.1097/CCM.0000000000005013

2020. **Zhao, B.**, & X. Huang. Encrypted monument: The birth of crypto place on the blockchain. *GeoForum*. doi: 10.1016/j.geoforum.2020.08.011

2020. Zhang, S., **B. Zhao+**, Y. Tian*, and S. Chen. Stand with #StandingRock: Envisioning an epistemological shift in understanding geospatial big data in the "post-truth" era. *Annals of the American Association of Geographers*. doi: 10.1080/24694452.2020.1782166

2020. Chen, Z., D. Chen, C. Zhao, M.P. Kwan, J. Cai, Y. Zhuang, **B. Zhao,** et al. Influence of meteorological conditions on PM2. 5 concentrations across China: A review of methodology and mechanism. *Environment International*. 139 (105558). doi: 10.1016/j.envint.2020.105558

2019. Huang, X., **B. Zhao**, Y. Liu and D. Xue. Belonging to a Place: An Analysis of the Perceptions of Rural-to-Urban Migrants in China. *Geographical Review*. 1-19 doi: 10.1111/gere.12366

2019. Chen, Z., D. Chen, N. Cheng, Y. Zhuang, M.P. Kwan, B. Chen, **B. Zhao**, et al. Evaluating the recent 2+26 regional strategy for air quality improvement during two orange air pollution alerts in Beijing: variations of PM2.5 concentrations, source apportionment, and the relative contribution of local emission and regional transport. *Atmospheric Chemistry and Physics*. 19 (10): 6879-6891. doi: 10.5194/acp-2018-1085

2018a. **Zhao, B.**, X. Huang, and D.Z. Sui. Place spoofing: A case study of the xenophilic copycat community in Beijing, China. *Professional Geographer*. 71(2): 265-277. doi: 10.1080/00330124.2018.1501711

2018b. **Zhao, B.** & S. Zhang. Rethinking spatial data quality: Pokémon Go as a case study of location spoofing. *Professional Geographer* 70(4): 1-13. doi: 10.1080/00330124.2018.1479973

2018. Fan, Y., S. Chen, **B. Zhao**, S. Yu, H. Ji, and C. Jiang. Monitoring tidal flat dynamics affected by human activities along an eroded coast in the Yellow River Delta, China. *Environmental Monitoring and Assessment* 190(7): 396-413. doi: 10.1007/s10661-018-6747-7

2018. Fan, Y., S. Chen, **B. Zhao**, S. Pan, C. Jiang and H Ji. Shoreline dynamics of the active Yellow River delta since the implementation of Water-sediment regulation scheme: A remote-sensing and statistics-based approach. *Estuarine, Coastal and Shelf Science*. 200 (2018): 406-419. doi: 10.1016/j.ecss.2017.11.035

2017. **Zhao, B.** & D. Z. Sui. True lies in geospatial big data: detecting location spoofing in social media. *Annals of GIS* 23(1): 1-14. doi: 10.1080/19475683.2017.1280536

2017. **Zhao, B.**, D.Z. Sui & Z. Li. Visualizing the gay community in Beijing with location-based social media. *Environment and Planning A* 49(5): 977-79 doi:10.1177/0308518X16685885.

2017. Liu, J.C. & **B. Zhao**. Who speaks for climate change in China? Evidence from Weibo. *Climatic Change* 140 (3-4): 413-422. doi:10.1007/s10584-016-1883-y

2017. Li, Y., J. Qiu & **B. Zhao**. Quantifying urban ecological governance: A suite of indices characterizes the ecological planning implications of rapid coastal urbanization. *Ecological Indicators*. 72 (2017): 225-233.

2015. Chen, X., **B. Zhao**, & E. Blackard. Unveiling Perceptions of Food Safety Scandals in China: An Exploratory Study with Search Engine. *Global Media Journal*.

2015. Kay, S.J., **B. Zhao**, & D.Z. Sui. Can Social Media Clear the Air? A Case Study of the Air Pollution Problem. *Professional Geographer*, 67(3):351-363.

2009. 陈子悦, 李满春, 赵博. GeoInterface—现实世界与网络世界的接口. *测绘科学* 34(4): 77-79 (Chen, Z.Y., M.C. Li and **B. Zhao.** 2009. Geo-Interface - Connecting the Real World with Cyberspace. *Science of Surveying and Mapping* 34(4): 77-79.)

2006. 赵博. GIS 利仞 MapServer. *软件世界* 10: 48-50. (**Zhao, B**. 2006. An Introduction to UMN MapServer. *Software World* 20:48-50.)

2005. 赵博, 谈俊忠. 对 MapInfo 系统中现状要素平滑的研究. *测绘通报* 2005(6): 25-27. (**Zhao, B.** and J.Z. TAN. 2005. A Research on Linear Elements Smoothing in the MapInfo. *Bulletin of Surveying and Mapping)* 2005(6): 25-27.)

2005. 赵博, 马劲松. 基于 XML 的地理数据模型设计. *测绘技术装备* 7(001): 9-12. (**Zhao, B.** and J.S. MA. 2005. Design of XML based Geo Data Model. *Geomatics Technology and Equipment* 1:9-12.)

Publications - Book Chapters with Peer Review

2023 (forthcoming). **Zhao, B.** A Humanistic Rewire of GIScience. in *Handbook of Cartographic Humanities* eds. L.L. Presti and T Rossetto. Taylor & Francis.

2023. **Zhao, B.** Social Media Analytics. In *Oxford Bibliographies in Geography*. Ed. Barney Warf. Oxford University Press.

2023. **Zhao, B.** & Jiaxin Feng*. A Humanistic Future of GeoAI. In *Handbook of Geospatial Artificial Intelligence* eds. S Gao, Y Hu, W. Li. Taylor & Francis. doi: 10.1201/9781003308423-20

2021 Huang, X., **B. Zhao**. A Permanent Virtual Memorial for a Whistleblower of the COVID-19 Pandemic: A Case Study of Crypto Place on the Blockchain. In *Mapping COVID-19 in Space and Time: Understanding the spatial and temporal dynamics of a global pandemic* eds. S. Shaw and D. Sui. Springer. Switzerland.

2020 **Zhao, B.**, S. Zhang, C. Xu*. and X. Liu. Spoofing in Geography: Can we trust Artificial Intelligence to manage geospatial data? In *Spatial Synthesis: Computational Social Science and Humanities.* eds. X. Ye and H. Lin. Springer. Switzerland. doi: 10.1007/978-3-030-52734-1.

2020. Ye, X., **B. Zhao**, T.H. Nguyen, S. Wang. Social media and Social Awareness. In *Manual of Digital Earth* eds. H. Guo, M.F. Goodchild, and A. Annoni. Springer, Singapore. 425-440. doi:10.1007/978-981-32-9915-3_12.

2017. **Zhao, B.** and Q. Chen. Location Spoofing in a Location-Based Game: A Case Study of Pokémon Go. In *Lecture Notes Geoinformation, Cartography, Advances in Cartography and GIScience*, ed. M. P. Peterson. 21-32. doi: 10.1007/978-3-319-57336-6_2

2017. **Zhao, B**. Web Scraping. *Encyclopedia of Big Data*. L. A. Schintler and C. L. McNeely (Eds.): Springer International Publishing: 1-3. doi: 10.1007/978-3-319-32001-4_483-1

2015. Sui, D.Z., and **B. Zhao.** GIS as Media through the GeoWeb. In *Mediated Geographies and Geographies of Media*, eds. S.P. Mains, J. Cupples, and C. Lukinbeal. Springer. Berlin. 191-208.

2014. **Zhao, B.** and D.Z. Sui. True Lies in Big Data: Detecting Location Spoofing based on Geographic Knowledge. In *Workshops on Big Data and Urban Informatics,* ed. P. Thakuriah. Chicago, IL. 253-275.

2014. Sui, D.Z., Z.W. Xu and **B. Zhao.** Networks in Geography. In R. Alhajj and J. Rokne, *Encyclopedia of Social Network Analysis and Mining (ESNAM)* Berlin, Springer. 1122-1127

Publications - Refereed Conference Proceedings

2019. Chen X., L Zou, and **B. Zhao**. Detecting climate change deniers on Twitter using a deep neural network. *International Conference on Machine Learning and Computing (ICMLC 2019) proceeding.* Zhuhai, China, Feb 22-24, 2019.

2018. Zhang, S., **B. Zhao**, and J. Ventrella. Towards an archaeological-ethnographic approach to big data: Rethinking Data Veracity**.** *The 2018 Ethnographic Praxis in Industry Conference Proceedings.* doi: 10.1111/1559-8918.2018.01197

2018. Xu, C.*, **B. Zhao**. Satellite Image Spoofing: Creating Remote Sensing Dataset with Generative Adversarial Networks. In *LIPIcs-Leibniz International Proceedings in Informatics (114). Schloss Dagstuhl-Leibniz-Zentrum fuer Informatik.* doi: 10.4230/LIPIcs.GISCIENCE.2018.67

2016. **Zhao, B.** Study on the Effects of Human Intention on Spatial Data Quality. *International Conference on GIScience Short Paper Proceedings* 1(1). doi: 10.21433/B31180p357ks.

2007. **Zhao, B.**, M.C. Li and Z.X. Jiang. Using GeoRSS to Syndicate the Spatiotemporal Information. Geospatial Information Technology and Applications, *Proceedings of Society of Photo-Optical Instrumentation Engineers (SPIE)* 6754: 675428. doi: 10.1117/12.764955.

2006. Huang, X., and **B. Zhao**. SVG based remote sensing visualization and processing. Remotely Sensed Data and Information, *Proceedings of Society of Photo-Optical Instrumentation Engineers (SPIE).* 6419: 64191N. doi: 10.1117/12.713261.

2006. **Zhao, B.**, X. Huang and G.P. Wu. OGC Web Services Based on Ajax Engine. Geospatial Information Technology, *Proceedings of Society of Photo-Optical Instrumentation Engineers (SPIE).* 6421: 64210R. doi: 10.1117/12.712902.

Research Reports

2022. Goodchild, M.F., Appelbaum R., Crampton, J., Herbert, W.A., Janowicz, K., Kwan, M.P., Michael, K., Alvarez León, L. F., Bennett, M., Cole, D.G., Currier, K., Fast, V., Hirsch, J., Kattenbeck, M., Kedron, P., Kerski, J., Liu, Z., Nelson, T., Shulruff, T., Sieber, R.E., Wertman, J., Wilmott, C., **Zhao, B**., Zhu, R., Nilupaer, J., Dony, C.C., Langham, G. A White Paper on Locational Information and the Public Interest. *American Association of Geographers.* https://doi.org/10.14433/2017.0113

2020. Nelson, T., P. Kedron, S. Fotheringham, A. Frazier, S. Gao, M.F. Goodchild, Y. Hu, W. Li, M. Tsou, M. Yuan, and **B. Zhao**. Digital Contact Tracing and Surveillance– Geospatial Opportunities, Limitations, and Research Directions. *Arizona State University.* https://sgsup.asu.edu/sites/default/files/covid_white_paper_05212020.pdf

2017. Sui, D.Z., **B. Zhao**, and H. Kong. The Development of Copycat Towns in China: An Initial Analysis of Their Economic, Social, and Environmental Implications. *Lincoln Institute of Land Policy.* https://lincolninst.edu/sites/default/files/pubfiles/sui_wp17ds1.pdf

Invited Talks, Keynotes & **Presentations**

2024. GeoAI and Fake Geographies. Invited by *Center for Geographic Analysis, Harvard University,* Cambridge, MA, May 16-17.

2024. Humanistic rewire of GIS: Theories, Care Ethics, and Practices. Invited by *Dept of Geography at Hong Kong University,* Hong Kong, Mar 11.

2024. Humanistic GIS: Towards a research agenda. Invited by *UCGIS*, via Zoom space. Feb 19.

2023. GeoAI and Digital Resilience: opportunities and risks of GeoAI panel. Invited by *Geographical and Geospatial Sciences Committee (GGSC) at the National Academies*, Washington DC, May, 22

2023. Humanistic GIS: Towards a research agenda. Invited by *the department of urban design and planning at the University of Washington Seattle*, April, 4

2023. 人文主义地理信息学: 面向一份研究议程 (Humanistic GIS: Towards a Research Agenda). Invited by eight universities in China, including *Peking University, China Agricultural University, University of Chinese Academy of Sciences, Beijing Normal University, Nanjing University, East China Normal University, Xi'an Jiaotong University and Northwest University*. Beijing, Nanjing, Shanghai and Xi'an, China, Mar. 10-22.

2023. A Glimpse into Digital Twins: The coming era of more-than-human GIScience. Invited by *the Spatial Analysis Research Center at The Arizona State University*, Tempe, AZ, Feb 27-28.

2023. Humanistic GIS: Towards a research agenda. Invited by *the Department of Geography at The Penn State University*, State College, PA, Feb 15.

2022. Ethics in Mapping: Integrity, Inclusion, and Empathy. Invited as a Plenary Panelist Speaker by Cartography and Geographic Information Society (CaGIS) AutoCarto 2022 Conference, Redlands, CA, November 2-4.

2022. Envision a Humanistic Turn in Data Studies: A Case Study of Spatial Data Science. *UW eScience Institute.* Seattle WA, Oct 4.

2022. Memorizing The passing of Yi-Fu Tuan. Invited by *the Academic Committee in Human Geography, Geographical Society of China*. Virtual/Online (Beijing, China), Sept 10.

2022. A Humanistic Reflection upon the life cycle of locational information. *Location Summit*, Santa Barbara CA, June 26-29.

2022. Humanistic GIS: Towards a research agenda. Invited by *Institute for Health Metrics and Evaluation (IHME)*, Seattle WA, June 15.

2022. ASPRS GeoByte - Deep Fake Geography? A Humanistic GIS Reflection upon Geospatial Artificial Intelligence, invited by *ASPRS*, Zoom Space, May 27.

2022. Image Analysis and AI. Invited by *the conference of AI@UW*, Seattle, WA, May 23

2022. A Humanistic GIS reflection upon Chinese urban development: Shanzhai/copycat, bug, and encrypted monument. Invited by *UW's college of built environment and department of urban design and planning.* May 20

2022. 人文主义地理信息学: 面向一份研究议程 (Humanistic GIS: Towards a Research Agenda). Invited by *the academic committee of social spatial committee at the Chinese Association for Artificial Intelligence.* Beijing, China, May 10

2022. Humanistic GIS: Towards a research agenda. Invited by *the CDWG group of CSDE at UW*, May 4

2022. Humanistic GIS: Towards a research agenda. Invited by *the department of geography at the University of Tennessee*, Knoxville, Tennessee, April, 7-9

2022. Geoprivacy, Deepfake Geography and GIScience in the Post-Truth World. Invited by *the department of geography at University of Connecticut*, Storrs, CT, April 4

2022. Humanistic GIS: Towards a research agenda. Invited by *SUNY-Binghamton University*, Binghamton, New York, March 10

2022. Crypto Place: An Initial Investigation of Blockchain from a Place Perspective. Invited by *University of Melbourne*, Parkville, Australia, Feb. 21.

2021. Humanistic GIS: A reflection upon human dwelling in the digital world. Invited by *the department of Geography, Simon Fraser University*, BC, Canada

2021. Deepfake Geography: When AI Encounters Geospatial Data. Invited by *National Seoul University*, Seoul, South Korea, Sept 25.

2021. 人文主义地理信息学: 面向一份研究议程 (Humanistic GIS: Towards a Research Agenda). Invited by *the Academic Committee in Human Geography, Geographical Society of China.* Virtual/Online (Shanghai, China), July 24.

2021. The deep fake of place: a geospatial analysis of xenophilic copycat communities in China. Invited by *Tateuchi East Asian Library.* Seattle, WA. Jan. 7.

2020. How does geography impact our modern world? Keynote Presentation invited *by the National Council for the Social Studies (CS4) 55th annual meeting.* Zoomspace. Dec 16.

2020. Humanistic GIS: An Individual's Pursuit of Poetic Dwelling on Digital Earth. Invited by *UW library GIS Symposium 2020*, Seattle, WA. May 22.

2020. Deep fake in geography? when geospatial data encounters artificial intelligence. Invited by *the Center for Studies in Demography and Ecology (CSDE).* Seattle, WA. Apr. 3.

2020. Deep fake in geography? when geospatial data encounters artificial intelligence. Invited by the *iSchool.* Seattle, WA. Feb. 2.

2019. Introduction to geonarratology. Invited by *the M9-Natrual Hazard research team at UW*. Seattle, WA. Oct. 31.

2019. Introduction to geonarratology. Invited by *the Computational Demography Working Group at UW*. Seattle, WA. Oct. 31.

2019. Humanistic GIS: an individual's pursuit of poetic dwelling on the digital earth. Invited by *the Department of Geography at UW*. Seattle, WA. Feb. 28.

2019. Humanistic GIS: an individual's pursuit of poetic dwelling on the digital earth. Invited by *the Department of Geography and Geoinformation Science at George Mason University*. Fairfax, VA. Feb. 18.

2018. Humanistic GIS: Towards a research agenda. Invited by *the Geography Department at University of Oregon*. Eugene, OR. Oct. 18.

2018. Teaching geovisualization of remote sensing imagery with Google cloud platform. Invited by *Google Cloud Platform Faculty Institute*. San Jose, CA. Jun. 15.

2018. Rethinking geospatial science via a whole new mind. Invited by *Spatial Data Management Group (SDMG) at OSU*. Corvallis, OR. Jan. 19.

2017. Geospatial data management using the open-source infrastructure. Invited by *Robert Kennedy for the course GEOG 361*, Corvallis, OR. Nov. 16.

2015. Trojan horse, geo-piracy, and cyber-espionage: detect location spoofing in geo-spatial big data. Invited by *Center for Geographic Analysis at Harvard University*. Cambridge, MA. Dec. 3.

2015. Location spoofing: an emerging issue in geospatial big data. Invited by *School of Geographic and Oceanographic Science, Nanjing University*. Nanjing. China. Aug. 22.

2015. Location spoofing in social media: concept, motivation and social impacts. MapTalk Series. Invited by *Institute of Geographic Sciences and Natural Resource Research, Chinses Academy of Sciences*. Beijing. China. Aug. 19.

2013. Geocoding in public health research. IPR Workshop: Getting Started with Geo-Health Research. Invited by *Institute for Population Research*, Columbus, OH. Mar. 28.

2010. GIS applications in archeological studies. Invited by *Department of Archeology, Northwest University*, Xi'an, China. Mar. 30.

2009. Using GeoDjango to enrich the user participation functions of Web GIS. Invited by *GIS ABC Series Seminar. Design School, Harvard University*, Boston, MA. Jul. 15.

Conferences – sessions organized.

2023. Chair of a Webinar on "Digital Twins and Ethics" at *NSF Spatiotemporal I/UCRC*. Zoom space. Dec. 18

2023. Co-Chair of a panel sessions on "Humanistic GIS" at *Association of American Geographers Annual Conference*. Denver. Mar. 23-27.

2022. Chair of a Roundtable Workshop on "Frontiers of Geospatial Artificial Intelligence" at *UW Geography*. Seattle, WA. Oct. 26.

2019. Chair and co-organizer of two paper sessions on "GIScience in the Post-Truth Era" at *Association of American Geographers Annual Conference*. Washington D.C. Apr. 3-7. 2019.

2018. Co-Chair of special session on Geovisual Analytics session at *Association of American Geographers Annual Conference*. New Orleans. LA. Apr. 21-25.

2015. Co-Chair of Special Session on Data-Driven Geography at *Association of American Geographers Annual Conference*. Chicago. IL. Apr. 21 to 25.

Conferences – presentations

2023. Emotional GIScience and deepfake detection in UCGIS Annual conference. New Haven, CT, Feb.25-June 5-8. 2023. With Jiaxin Feng and Yifan Sun.

2022. Shifting spatialities of LGBTQ Life: A progress report. At the session on "digital feminist geographies" in *Association of American Geographers Annual Conference*. Virtual Feb.25- March 1. 2022. With Larry Knopp, Bo Zhao, Michael Brown, Ayanda Masilela, Caitlin Alcorn, Kevin, Ko, Kerwin Jiao, Yuke Cao, and Liz Ping

2022. Deep fake geography? When geospatial data encounter artificial intelligence at the session on "GeoAI - Intelligent Geospatial Analytic" in *Association of American Geographers Annual Conference*. Virtual Feb.25-March 1. 2022.

2021. Humanistic GIS: An Individual's Pursuit of Poetic Dwelling on Digital Earth at *Association of American Geographers Annual Conference*. Seattle, WA, Apr. 3-7. 2021.

2019. Fake Geography: Can we trust Artificial Intelligence to manage geospatial data? at Association of *American Geographers Annual Conference*. Washington D.C. Apr. 3-7. 2019. With Shaozeng Zhang, Chunxue Xu, and Xiaobai Liu.

2018. Deep learning and fake geography: creating satellite datasets with Generative Adversarial Networks at *Association of American Geographers Annual Conference*. New Orleans. LA. Apr. 21-25. With Chunxue Xu.

2018. Stand with #StandingRock: Towards an epistemological shift in understanding geospatial big data during the "post-truth" era: at *Association of American Geographers Annual Conference*. New Orleans. LA. Apr. 21-25. With Yuanyuan Tian

2017. Coming out of big data: Mapping the gay community in Beijing using social media feeds at *Association of American Geographers Annual Conference*. Boston, MA. Apr. 6-10. With Daniel Z. Sui, and Zhaohui Li.

2016. Detecting location spoofing in social media: A bayesian time geography approach. Invited by *NSF-IBSS workshop*, San Diego, CA. Aug. 3, 2016. With Daniel Z. Sui.

2014. True lies in big data: Detecting location spoofing based on geographic knowledge (NSF supported). *Workshops on Big Data and Urban Informatics*. Chicago, IL. Aug. 11-12. With Daniel Z. Sui.

2014. Using Weibo to understand the spatial-temporal dynamics of public reactions to the case of Bo Xilai (NSF supported). *IWGIS2014*. Beijing, China. Jun. 21-22. With Daniel Z. Sui.

2013. Spatial community over social media. *AAG Annual Conference*. Los Angeles, CA. Apr. 9-13. With Daniel Z. Sui.

2013. Open-source GIS. *Center for Urban and Regional Analysis (CURA) Public Seminar*. Columbus, OH. Oct. 24.

2013. Designing a real-time monitor for social media data (NSF supported). *Center for Geographical Analysis (CGA) Annual Conference*. Harvard University. Cambridge, MA. May 2-3.

Conferences – panel & discussant participation

2024. Panelist of the Workshop/Specialist Meeting - Spatial Data Science in an Age of Scientific Disruption at *Association of American Geographers Annual Conference*. Honolulu, Hawaii. Apr. 16.

2024. Panelist of the Workshop/Specialist Meeting - Spatial Data Science in an Age of Scientific Disruption at *Association of American Geographers Annual Conference*. Honolulu, Hawaii. Apr. 16.

2024. Panelist of the session on Ethics in Geospatial AI and Data Science. Honolulu, Hawaii. Apr. 17.

2023. Panelist of the Workshop/Specialist Meeting - Spatial Data Science in an Age of Scientific Disruption. Organized by *the department of geography at UCSB*, Santa Barbara, California. Dec. 8.

2023. Panelist of the virtual meeting on Geography According to ChatGPT on Zoom space. May 4.

2020. Panelist of the Tateuchi Research Workshop on Text Mining and Analysis. Invited by the *Tateuchi East Asia Library at UW*. Seattle, WA. Feb. 18.

2020. Panelist of a national geospatial conversation on Digital Contact Tracing. Organized by *the school of Geographical Sciences and Urban Planning, Arizona State University*, Tempe, Arizona. Apr. 24.

2020. Panelist of virtual panel on Creative, Critical, Digital? Doing Digital GeoHumanities *at Association of American Geographers Annual Conference*. Denver. CO. Apr. 6-10.

2018. Panelist of special panel on Toward a Peer-Reviewed Story Maps Academic Journal at *Association of American Geographers Annual Conference*. New Orleans. LA. Apr. 21-25.

Public Scholarship: Software Development & Programming

2023. Archiving the Capitol Hill Organized Protest. Humanistic GIS Laboratory. doi: 10.6069/4KHS-3W59. With Koopman, D., Jung, J.-K., Sun, H., & Anderson, C.

2022. Queer Space in the United States from 2000 to 2019: A Web Map of Venue Data from Damron Men's Travel Guide. https://doi.org/10.6069/WT82-TH75. Humanistic GIS Lab, University of Washington. With Zhang, Q. (UW), Xia, Y. (UW), Huang, J., & Peng, L(UW).

2020. Novel coronavirus infection map https://hgis.uw.edu/virus . With Fengyu Xu (UW), Lola Kang (UW), Joshua Ji (UW), Jou Ho (UW) and Steven Bao (UW).

2018. A geovisual analytical platform for exploring Google Earth Engine Data. https://hgis.uw.edu/geeviz . Supported by Google Cloud Platform. With Hannah Friedrich (OSU).

2018. Vulnerability of shellfish stakeholders to ocean acidification in the Pacific Northwest. http://hgis.uw.edu/pnw . Funded by NOAA (NA17OAR0170165), Advisor. With Brian Katz (OSU), and David Wrathall (OSU).

2017. Sea Level Rise Induced Migration Project, https://hgis.uw.edu/slr , Grand Prize of Ecological Visualization Contest. National Science Foundation (NSF-DBI-1062566), Advisor for the awarded student group.

2017. AIS visualization platform, Faculty Advisor. With Likun Chen.

2017. Water Infrastructure of Oregon, http://oregonwater.info/atlas.html , Third Prize of Student Environment Challenge, Oregon Chapter | PNWIS (Oregon Chapter of Air & Waste Management Association), Advisor for the awarded student.

2016. Storymap.js - A JavaScript library for telling a story using web maps. https://github.com/jakobzhao/storymap .

2012. Xi'an historical geographic information system. Access the demo at https://jakobzhao.github.io/cv/assets/xian.mp4 . With Li Chen.

2011. Web map for helping Chinese child street beggars to return to their hometown. http://jakobzhao.github.io/cv/child-street-beggars .

2010. The GIS for ancient nomadic people in the Inner Asia. With Zhe Su.

2010. Boston research map. https://worldmap.harvard.edu/boston . Center for Geographic Analysis (CGA), Harvard University. With Ben Lewis (Harvard).

2010. Africa map. https://worldmap.harvard.edu/africamap . Center for Geographic Analysis (CGA), Harvard University. Programmer. With Ben Lewis (Harvard).

2009. Swine Flu (H1N1) influenza map.

2009. HeatMap Plugin for uMapper and ArcGIS Flex API.

2009. Global political infrastructure map. With Howard Philips (UW).

2009. A web-based transit trip planner for the city of Milwaukee. With Zun Wang (University of Florida) and Jian Sun (University of Florida).

2008. Real estate evaluating system for Nanjing city. Software design and programmer. With Gang Chen (Nanjing University, China).

Service

Service to Department, College, and University

University of Washington

2023-24. Chair, Program review committee for the department of landscape architecture, the college of built environment.

2024. Member, Associate dean for research search committee, College of Arts & Sciences.

2024. Chair, Ad hoc committee on Google Cloud Storage Policy Change at the Department of Geography.

2024. Collegial evaluation of teaching for Dr. Gunwha Oh, GEOG 455: Visualizing Seattle.

2023. Member, Faculty promotion and tenure committee at the Department of Geography.

2023. Member, Department website redesign committee at the Department of Geography.

2022-24. Coordinator, Undergraduate Program Committee at the Department of Geography.

2021-present. Geography delegate, UW Data Science Minor Committee.

2021. Collegial evaluation of teaching for Dr. Mia Bennett, GEOG 495.

2021. Member, Search committee for one tenure-track assistant professor in digital geographies at the Department of Geography

2020. Faculty judge for Department of Geography Undergraduate Research Symposium, June 5

2020. Collegial evaluation of teaching for Dr. Gunwha Oh, GEOG 360.

2020. Ad hoc committee on future of GIS, Mapping & Society track in Geography major.

Oregon State University

2018-19. Member. Search committee for two tenure-track assistant professors in remote sensing of water for the geography program at College of Earth, Ocean, and Atmospheric Sciences (CEOAS)

2018-19. Member. Search committee for one lecturer in human geography for the geography program at CEOAS.

2018-19. Chair. Geography graduate student admissions committee.

2018-19. Co-Chair, Marston lecture committee for the geography program at CEOAS. with David Wrathall.

2018. Member, Evaluation committee on hiring Maureen Walczak as assistant professor (senior research).

2018. Co-organizer, GIS Day Activity.

2017-18. Member. Geography Graduate Student Admissions Committee.

2017. Co-organizer, GIS Day Activity.

2016. Co-organizer, GIS Day Activity.

2016-17. Member. Geography Graduate Student Admissions Committee.

Service to Profession

2024. Member, Program Committee. CAGIS-UCGIS 2024 Symposium. Columbus, Ohio. June 3-6.

2021. Member, Program Committee. The 2nd Spatial Data Science Symposium (SDSS 2021). Virtual/Online. Dec. 13-14. 2021

2021-24. Member, Standing Review Board under the Humanities and Social Sciences Panel. The research Grants Council (RGC) of Hong Kong.

2021-23. Member, Best paper award committee. The 2021 Chinese Professionals in Geographic Information Sciences (CPGIS) Annual Conference, Nanchang, China. Aug. 8-10. 2021

2018. Member, Geovisualization committee, GIScience 2018, Melbourne, Australia. Aug. 28-31. 2018

2018. Member, Academic committee, The 9th International Forum of Spatially Integrated Humanities and Social Sciences. Shanghai, China. Jun. 23-26, 2018

2017. Member, Best paper award committee. The 2017 CPGIS Annual Conference, Buffalo, NY. Aug. 2-4. 2017

2017. Member, Academic committee. The 8th International Forum of Spatially Integrated Humanities and Social Sciences. Nanjing, China. Jun. 23-25, 2017

Reviewer for peer-reviewed Journal Manuscripts (100+)

Annals of the American Association of Geographers (2023, 2022, 2021:3, 2020, 2019)

Professional Geographer (2024, 2022:2, 2021, 2020, 2019:2)

Cartography and Geographic Information Science (2024, 2023:2)

Cartographic Perspectives (2024)

International Journal of Geographical Information Science (2021, 2020, 2019, 2017:2, 2016)

Transactions in GIS (2024:2, 2019, 2018, 2017:2)

International Journal of Digital Earth (2018:2)

Journal of Spatial Information Science (2019)

Computer Environment and Urban Systems (2018:2, 2017)

Annals of GIS (2021:6, 2018, 2017:2)

Environment and Planning B (2022, 2020:2, 2016)

Science Bulletin (2023)

PLOS ONE (2017)

Big Data and Society (2022)

International Journal of Environmental Research and Public Health (2021)

Social Science Research (2021)

Urban Planning (2020)

Digital Geography and Society (2023, 2020:2)

Cultural Geographies (2021)

Geographical Review (2018)

Journal of Location-based Service (2020)

Journal of Risk Research (2017)

ISPRS International Journal of Geo-Information (2021:2)

GeoJournal (2024, 2022, 2017, 2016, 2013)

Journal of Environmental Planning and Management (2018)

BMC Public Health (2018)

Applied Spatial Analysis and Policy (2017)

Book Proposal, Manuscript, and Chapter Reviewer for Commercial Publishers

Cambridge University Press (1)

Springer (3)

Chapman & Hall/CRC Press (5)

Grant Proposal Reviewer

National Science Foundation (NSF), https://www.nsf.gov, U.S.A.

European Research Council (ERC), https://erc.europa.eu, European Union.

Research Grants Council (RGC), https://www.ugc.edu.hk/eng/rgc, Hong Kong.

Belgium Earth Observation Program (STEREO IV Programme), https://eo.belspo.be, Belgium.

Reviewer for UW Royalty Research Fund (2023, 2020).

Local Community Engagement

2024. A workshop to introduce the GIS platform "Shifting LGBTQ+ spaces" to the local LGBTQ+ business owners. Jan 27.

2023. Webinar on Archiving the CHOP (Capitol Hill Occupied Protest). June 8.

2022. Member of the Advisory Committee for the Sound to Summit Regional GIS, A regional GIS infrastructure government Initiative spearheaded by King County, Washington.

2018. Organizing a meeting on drinking water quality issues between the City of Salem and the OSU on Jun. 29

2016. Geovisual analytical tools for exploring Benton County thriving communities 2040 questionnaire, http://jakobzhao.github.io/benton . Spring

Teaching and Course Development

University of Washington, 2019 - present

GEOG 595: Humanistic GIS (2023 Spring). Archives at https://github.com/jakobzhao/geog595

GEOG 595: Digital GeoHumanities (2022 Winter, 2021 Spring, 2020 Winter). Archives at https://github.com/jakobzhao/geog595

GEOG 560: Principles of GIS Mapping (2022 Fall, 2021 Fall, Winter, 2019 Fall)

GEOG 521: Critical GIS (2024 Spring)

GEOG 497: Tutorial in Geography (2023-24, 2024-25)

GEOG 495: Web and Mobile GIS (2022 Fall, 2021 Fall). Archives at https://github.com/jakobzhao/geog495

GEOG 458: Advanced Digital Geographies (2024 Winter, 2023 Winter, 2022 Spring, 2021 Winter, 2020 Spring). Archives at https://github.com/jakobzhao/geog458

GEOG 360: GIS and Mapping (2022 Fall, 2021 Fall, Winter, 2019 Fall)

GEOG 328: Web GIS (2023 Summer, 2023 Fall). Archives at https://github.com/jakobzhao/geog328

Oregon State University, 2016 - 19

GEOG 370: Cartography (2018 Winter)

GEOG 371: Web Mapping (2017 Fall, Winter). Archives at https://github.com/jakobzhao/geog371

GEOG e371: Web Mapping (2018 Fall)

GEOG 571: Advanced Web Mapping (2017 Winter)

GEOG 4/572: Geovisual Analytics (2017 Spring). Archives at https://github.com/jakobzhao/geog4572

Ohio State University, 2014 - 15

GEOG 5220: Fundamentals of GIS (2015 Summer)

Advising & Mentoring

Graduate Committees – as chair

Peng, Lizhi "Liz". (M.A. UW. Geography. In progress – 2022)

Bao, Xiaoqi "Steven". (M.A. UW. Geography. 2023. Thesis: Balancing the Quantitative/Qualitative Divide: A Rhythmanalytic Review of Seattle's Black-Owned Restaurants' Experience During the COVID-19 Pandemic [2020-2021], UW Graduate School's 2023 Distinguished Thesis Award [Social Sciences], AAG Marble Fund Award for Innovative Master's Research Nominee).

Sun, Yifan. (Ph.D. UW. Geography. In progress. 2020)

Feng, Jiaxin. (Ph.D. UW. Geography. In progress. 2020)

McCrea, Tyler. (M.A. UW. Geography. 2020. Thesis: Sensing the cloud: A materialist spatial analysis of data centers and critical conceptualization)

Svevo, Giovanni. (M.S. OSU. Geography. 2019. Thesis: Mapping refugee experiences)

Chen, Likun. (M.S. OSU. Geography. 2017. Thesis: A high-performance web graphics library-based automatic identification system data visualization)

Tian, Yuanyuan. (M.S. East China Normal University, GIS, 2018. Co-advising with Shenliang Chen. Thesis: Tourist market quality assessment and management platform design for Hainan Island, China)

Graduate Committees – as member or GSR

Hong, Lucy (Ph.C. UW, Department of Economics. In progress)

Chen, Cheng (Ph.C. UW, Department of Economics. In progress)

Han, Bin (Ph.C. UW, Department of Information Science. In progress)

Huang, Chi-Ying (Ph.C. UW, Interdisciplinary Individual Ph.D. In progress)

Yang, June (Ph.C. UW, Sociology, In progress)

Saha, Manaswi (Ph.D. UW, Computer Science & Engineering. 2022. Dissertation: Designing Interactive Data-driven Tools for Understanding Urban Accessibility at Scale.)

Wu, Shuan (Ph.D. UW, Urban Planning. 2022. Dissertation: Assessing Resilience in the Spatial Patterns and Socio-ecological Functions of the Chengdu Plain)

Cosgrove, Christopher (Ph.D. OSU, Geography. 2020. Dissertation: Mapping wildlife-relevant snow properties in Arctic-boreal North America; novel modelling, remote-sensing, and ground observation approaches.)

Dong, Shangjia (Ph.D. OSU. Civil Engineering. 2018. Dissertation: Percolation modeling of transportation network robustness towards a resilience infrastructure system: from a single network to interdependent networks)

Yi, Hongyan (M.S. OSU, Computer Science. 2017. Thesis: Global AIS data visualization on a 3D Earth)

Showkat, Dilruba (M.S. OSU, Computer Science. 2017. Thesis: HRI gender differences: information need, information processing style, self-efficacy, and tinkering)

Undergraduate honors theses and other advising

Baldrica-Franklin, Gareth (B.S. Honors, OSU, Geography, 2017, Thesis: Oregon water atlas: A digital collection and visualization of Oregon's water)

Media Appearances

Seattle Times. Boost in support for Black-owned restaurants short-lived, UW study finds. Accessed from https://www.seattletimes.com/seattle-news/boost-in-support-for-black-owned-restaurants-short-lived-uw-study-finds/ Sept 3, 2022

King 5 (CNBC). UW study finds Black-owned restaurants were disproportionately impacted during pandemic. Accessed from https://www.king5.com/article/news/local/uw-study-black-owned-restaurants-disproportionately-impacted-pandemic/281-6d4a9148-e59e-45ee-adb3-8715cea49e5e. Sept 1. 2022

Le Monde. Deepfakes géographiques: l'intelligence artificielle menace-t-elle la crédibilité de l'imagerie satellite ? Accessed from https://www.lemonde.fr/pixels/article/2021/10/13/ deepfakes-geographiques-l-intelligence-artificielle-menace-t-elle-la-credibilite-de-l-imagerie-satellite_6098191_4408996.html . Oct. 8. 2021

VOA. Deepfakes Are Getting Harder to Detect, But Reliable for Voiceovers. Accessed from https://www.voaindonesia.com/a/deepfake-makin-sulit-dideteksi-tapi-diandalkan-untuk-sulih-suara-/5987413.html . Feb. 8. 2021

Wired. Deepfake Maps Could Really Mess with Your Sense of the World. Accessed from https://www.wired.com/story/deepfake-maps-mess-sense-world. Sept.7, 2021

Yahoo and TechCrunch. Deepfake tech takes on satellite maps. Accessed from https://news.yahoo.com/deepfake-tech-takes-satellite-maps-204612330.html . Apr. 22, 2021

GeekWire. Why 'deepfake geography' presents significant risks — and how researchers are detecting it. https://www.geekwire.com/2021/deepfake-geography-presents-significant-risks-researchers-detecting/. Apr. 21, 2021

Verge. Deepfake satellite imagery poses a not-so-distant threat, warn geographers. Accessed from https://www.theverge.com/2021/4/27/22403741/deepfake-geography-satellite-imagery-ai-generated-fakes-threat. Apr. 27, 2021

UW News. A growing problem of 'deepfake geography': How AI falsifies satellite images. Accessed from https://www.washington.edu/news/2021/04/21/a-growing-problem-of-deepfake-geography-how-ai-falsifies-satellite-images/. Apr. 21, 2021

UW News. Produces Dynamic Coronavirus Map. Accessed from https://www.uw.edu/news/2020/02/07/interactive-map-shows-worldwide-spread-of-coronavirus/. Feb. 7, 2020

Hindu. Question Corner: Can there be fake satellite images? Accessed from https://www.thehindu.com/sci-tech/science/fake-images/article34402185.ece. Apr. 24, 2021

Anadolu Agency. Coronavirus Infection Map. Accessed from https://www.aa.com.tr/en/p/coronavirus-infection-map . March 20, 2020

BBC. Coronavírus: os sites em tempo real que mostram dados de mortes, curvas de contágio e mutações. Access from https://www.bbc.com/portuguese/internacional-51987873 . Mar. 24, 2020

National Geographic. Los mapas y gráficos de infección del coronavirus en todo el mundo. Accessed from https://www.nationalgeographic.com.es/ciencia/mapas-y-graficos-infeccion-coronavirus-todo-mundo_15356 . Mar. 24, 2020

Foreign Policy. The featured article - The convenient disappearance of climate change denial in China. Accessed from https://foreignpolicy.com/2017/05/31/the-convenient-disappearance-of-climate-change-denial-in-china . May 31. 2017.

ScienceDaily (two days later reported by BBC World News on the radio). Fighting air pollution in China with social media. Accessed from https://www.sciencedaily.com/releases/2014/12/141202120014.htm . Dec 2, 2014.

Microsoft Virtual Earth. Visualizing Swine Flu on Virtual Earth. Accessed from https://blogs.msdn.microsoft.com/virtualearth/2009/04/29/visualizing-swine-flu-on-virtual-earth . Apr. 29. 2009.

凤凰网. 西安历史地理信息系统 (Phoenix New Media. Xi'an Historical Geographic Information System). Accessed from https://jakobzhao.github.io/cv/xagis.pdf . Oct. 16, 2013.

华商网. 微博打拐地图 (HuaShang Media. Helping Chinese child-street-beggars using Google Maps). http://jakobzhao.github.io/cv/child-street-beggars . Feb. 14. 2011.

Terra. The Great Escape: Migration spurred by rising seas could reshape the country. Accessed from http://terra.oregonstate.edu/2017/10/the-great-escape . Oct. 9, 2017.

CEOAS News. The featured story - The Message in a map. Accessed from http://ceoas.oregonstate.edu/features/message . April. 2, 2017.

Professional Membership

AAG (American Association of Geographers), Member

NACIS (North American Cartographic Information Society), Member

UCGIS (University Consortium for Geographic Information Science), the UW Delegate (2019-present)