

YUHAO KANG

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EDUCATION

University of Wisconsin-Madison, United States

- ◇ Ph.D in GIScience 2023
- ◇ M.S in Computer Science
- ◇ M.S in Cartography and Geographic Information Science (GIS)

Wuhan University, China

- ◇ B.S in Geographic Information Science (GIS)

EMPLOYMENT EXPERIENCE

GISphere, United States

- ◇ Founder, a non-profit organization for GIS research and education 2019 -

University of South Carolina, United States

- ◇ Tenure-track Assistant Professor in GIScience 2023 - 2024
- ◇ Associate Director, Center for GIScience and Geospatial Big Data (CeGIS)

Senseable City Lab, Massachusetts Institute of Technology, United States

- ◇ Postdoctoral Researcher & Research Assistant 2021 - 2023

Google [X], Mountain View, CA, United States

- ◇ Research Associate Fall 2020 - Summer 2021

Mobike (now Meituan-Dianping), Beijing, China

- ◇ Machine Learning Engineer Intern Summer 2018

TEACHING EXPERIENCES

GRG 460: Environmental GIS

- ◇ Lecturer, The University of Texas at Austin Fall 2024

Geography 556: WebGIS and Geovisualization

- ◇ Lecturer, University of South Carolina Spring 2024

Geography 564: GIS-based Modeling and Spatial Analysis

- ◇ Lecturer, University of South Carolina Fall 2023

Geography 560: Advanced Quantitative Analysis

- ◇ Lecturer, University of Wisconsin-Madison Fall 2021

Geography 573: Adv. Geocomputing & Geospatial Big Data Analytics

- ◇ Teaching Assistant, University of Wisconsin-Madison Spring 2020-2022

RESEARCH INTERESTS

GIScience, Spatial Data Science, GeoAI, Social Sensing, Cartography

PUBLICATIONS

* I was the corresponding author, i.e., the principle investigator (PI) of the project

Students conducting research under my supervision

+ Co-first author

Top 3 Signature Pieces (My best paper will always be my next paper)

- J1. **Yuhao Kang**, Jonatan Abraham, Vania Ceccato, Fábio Duarte, Song Gao, Lukas Ljungqvist, Fan Zhang, Per Näsman, and Carlo Ratti. Assessing differences in safety perceptions using GeoAI and survey across neighbourhoods in Stockholm, Sweden. *Landscape and Urban Planning*, 236:104768, 2023
 - ◊ **Best paper** in the AAG EPGB (Environmental Perception and Behavioral Geography) student paper competition
 - ◊ **ESI highly cited paper**
- J2. **Yuhao Kang**, Kunlin Wu, Song Gao, Ignavier Ng, Jinneng Rao, Shan Ye, Fan Zhang, and Teng Fei. STICC: a multivariate spatial clustering method for repeated geographic pattern discovery with consideration of spatial contiguity. *International Journal of Geographical Information Science*, 36(8):1518–1549, 2022
- J3. **Yuhao Kang**, Fan Zhang, Song Gao, Wenzhe Peng, and Carlo Ratti. Human settlement value assessment from a place perspective: Considering human dynamics and perceptions in house price modeling. *Cities*, 118:103333, 2021
 - ◊ **Best paper** in the AAG GISS (Geographic Information Science and Systems) student paper competition

Peer-reviewed Journal Articles

- J4. Kee Moon Jang, Junda Chen, **Yuhao Kang***, Junghwan Kim, Jinhyung Lee, Fábio Duarte, and Carlo Ratti. Place identity: A generative AI's perspective. *Humanities and Social Sciences Communications*, 2024
- J5. **Yuhao Kang**, Song Gao, and Robert Roth. Artificial Intelligence studies in cartography: A review and synthesis of methods, applications, and ethics. *Cartography and Geographic Information Science*, 2024
- J6. Yonggai Zhuang, **Yuhao Kang***, Teng Fei*, Meng Bian, and Yunyan Du. From hearing to seeing: Linking auditory and visual place perceptions with soundscape-to-image generative artificial intelligence. *Computers, Environment and Urban Systems*, 2024
- J7. Yikang Wang⁺, **Yuhao Kang⁺⁺**, Haokun Liu, Ce Hou, Bing Zhou, Shan Ye, Yuyan Liu, Jinneng Rao, Zhenghao Pei, Xiang Ye, et al. Choosing GIS graduate programs from afar: Chinese students' perspectives. *Transactions in GIS*, 27(2):450–475, 2023
- J8. **Yuhao Kang**, Peng Wenzhe, Fan Zhang, Song Gao, Jinneng Rao, Fabio Duarte, and Carlo Ratti. Understanding house price appreciation using multi-source big geo-data and machine learning. *Land Use Policy*, page 104919, 2021
 - ◊ **ESI highly cited paper**
 - ◊ Press: [Financial Times](#)
- J9. **Yuhao Kang**, Song Gao, Yunlei Liang, Mingxiao Li, Jinneng Rao, and Jake Kruse. Multiscale dynamic human mobility flow dataset in the US during the COVID-19 epidemic. *Scientific Data*, 7(1):390, 2020
 - ◊ **ESI highly cited paper**
- J10. **Yuhao Kang**, Fan Zhang, Song Gao, Hui Lin, and Yu Liu. A review of urban physical environment sensing using street view imagery in public health studies. *Annals of GIS*, 26(3):261–275, 2020
 - ◊ **Best paper** of *Annals of GIS* 2020
 - ◊ **Top 1 most cited paper** of the journal in the first 3 years of its publication
- J11. **Yuhao Kang**, Song Gao, and Robert Roth. Transferring multiscale map styles using generative adversarial networks. *International Journal of Cartography*, 5(2-3):115–141, 2019
 - ◊ **Outstanding publication** of the Waldo Tobler Young Researcher Award
 - ◊ **Top 4 most cited paper** of the journal within the first 3 years of its publication
 - ◊ Press: [ArcGIS Developers](#)

- J12. **Yuhao Kang**, Qingyuan Jia, Song Gao, Xiaohuan Zeng, Yueyao Wang, Stephan Angsuesser, Yu Liu, Xinyue Ye, and Teng Fei. Extracting human emotions at different places based on facial expressions and spatial clustering analysis. *Transactions in GIS*, 23(3):450–480, 2019
 ◇ **Best paper** in the AAG CyberGIS student paper competition
 ◇ Press: Geography Realm
- J13. Koichi Ito, **Yuhao Kang**, Ye Zhang, Fan Zhang, and Filip Biljecki. Understanding urban perception with visual data: A systematic review. *Cities*, 2024
- J14. Ce Hou, Fan Zhang, **Yuhao Kang**, Song Gao, Yong Li, Fabio Duarte, and Sen Li. "Transferred bias" uncovers the balance between the development of physical and socio-economic environments of cities. *Annals of the American Association of Geographers*, 2024
- J15. Jing Huang, Teng Fei, **Yuhao Kang**, Jun Li, Ziyu Liu, and Guofeng Wu. Estimating urban noise along road network from street view imagery. *International Journal of Geographical Information Science*, 38(1):128–155, 2024
- J16. Jiaqi Ding, Chao Yang, Yueyao Wang, Pengfei Li, Fulin Wang, **Yuhao Kang**, Haoyang Wang, Ze Liang, Jiawei Zhang, Peien Han, et al. Influential factors of intercity patient mobility and its network structure in China. *Cities*, 132:103975, 2023
- J17. Xiao Li, Huan Ning, Xiao Huang, Bahar Dadashova, **Yuhao Kang**, and Andong Ma. Urban infrastructure audit: an effective protocol to digitize signalized intersections by mining street view images. *Cartography and Geographic Information Science*, 49(1):32–49, 2022
- J18. Xiao Huang, Yang Xu, Rui Liu, Siqin Wang, Sicheng Wang, Mengxi Zhang, **Yuhao Kang**, Zhe Zhang, Song Gao, Bo Zhao, et al. Exploring the spatial disparity of home-dwelling time patterns in the USA during the COVID-19 pandemic via Bayesian inference. *Transactions in GIS*, 26(4):1939–1961, 2022
- J19. Jacob Kruse, **Yuhao Kang**, Yu-Ning Liu, Fan Zhang, and Song Gao. Places for play: Understanding human perception of playability in cities using street view images and deep learning. *Computers, Environment and Urban Systems*, 90:101693, 2021
- J20. Xueying Wu, Yi Lu, Yongxi Gong, **Yuhao Kang**, Linchuan Yang, and Zhonghua Gou. The impacts of the built environment on bicycle-metro transfer trips: A new method to delineate metro catchment area based on people's actual cycling space. *Journal of transport geography*, 97:103215, 2021
- J21. Xiao Li, Haowen Xu, Xiao Huang, Chenxiao Guo, **Yuhao Kang**, and Xinyue Ye. Emerging geo-data sources to reveal human mobility dynamics during COVID-19 pandemic: Opportunities and challenges. *Computational Urban Science*, 1:1–9, 2021
- J22. Xiao Hou, Song Gao, Qin Li, **Yuhao Kang**, Nan Chen, Kaiping Chen, Jinneng Rao, Jordan S Ellenberg, and Jonathan A Patz. Intracounty modeling of COVID-19 infection with human mobility: Assessing spatial heterogeneity with business traffic, age, and race. *Proceedings of the National Academy of Sciences*, 118(24):e2020524118, 2021
- J23. Juncheng Yang, Helena Rong, **Yuhao Kang**, Fan Zhang, and Andrea Chegut. The financial impact of street-level greenery on New York commercial real estate. *Landscape and Urban Planning*, 214:104162, 2021
 ◇ Press: Propmodo
- J24. Yuanhong Ma, Guangtian Zou, Jung-hye Shin, **Yuhao Kang**, Song Gao, Kin Wai Michael Siu, and Suxin Zhang. Locating community-based comprehensive service facilities for older adults using the GIS-NEMA method in Harbin, China. *Journal of Urban Planning and Development*, 147(2):05021010, 2021
- J25. Fan Zhang, Zhuangyuan Fan, **Yuhao Kang**, Yujie Hu, and Carlo Ratti. "Perception bias": Deciphering a mismatch between urban crime and perception of safety. *Landscape and Urban Planning*, 207:104003, 2021

- J26. Yizhuo Li, Teng Fei, Yingjing Huang, Jun Li, Xiang Li, Fan Zhang, **Yuhao Kang**, and Guofeng Wu. Emotional habitat: mapping the global geographic distribution of human emotion with physical environmental factors using a species distribution model. *International Journal of Geographical Information Science*, 35(2):227–249, 2021
- J27. Yingjing Huang, Teng Fei, Mei-Po Kwan, **Yuhao Kang**, Jun Li, Yizhuo Li, Xiang Li, and Meng Bian. Gis-based emotional computing: A review of quantitative approaches to measure the emotion layer of human–environment relationships. *ISPRS International Journal of Geo-Information*, 9(9):551, 2020
- J28. Song Gao, Jinneng Rao, **Yuhao Kang**, Yunlei Liang, Jake Kruse, Dorte Dopfer, Ajay K Sethi, Juan Francisco Mandujano Reyes, Brian S Yandell, and Jonathan A Patz. Association of mobile phone location data indications of travel and stay-at-home mandates with COVID-19 infection rates in the us. *JAMA Network Open*, 3(9):e2020485–e2020485, 2020
 ◇ Press: [CNN Health](#)
- J29. Song Gao, Jinneng Rao, **Yuhao Kang**, Yunlei Liang, and Jake Kruse. Mapping county-level mobility pattern changes in the United States in response to COVID-19. *SIGSPATIAL Special*, 12(1):16–26, 2020
 ◇ Press: [Fox 47](#); [Channel 3000](#); [NBC15](#); [Wisconsin Examiner](#); [WISN](#); [WKOW](#); [Wisconsin Public Radio](#)
- J30. Shi Chen, Qin Li, Song Gao, **Yuhao Kang**, and Xun Shi. State-specific projection of COVID-19 infection in the United States and evaluation of three major control measures. *Scientific Reports*, 10(1):22429, 2020
- J31. Bozhi Wang, Teng Fei, **Yuhao Kang**, Meng Li, Qingyun Du, Meng Han, and Ning Dong. Understanding the spatial dimension of natural language by measuring the spatial semantic similarity of words through a scalable geospatial context window. *PloS One*, 15(7):e0236347, 2020
- J32. Bin Li, Song Gao, Yunlei Liang, **Yuhao Kang**, Timothy Prestby, Yuqi Gao, and Runmou Xiao. Estimation of regional economic development indicator from transportation network analytics. *Scientific Reports*, 10(1):2647, 2020
- J33. Fan Zhang, Mingyuan Hu, Zu Jinyan, Di Zhu, **Yuhao Kang**, Song Gao, Yi Zhang, and Zhou Huang. Uncovering inconspicuous places using mobile phone check-ins and street view images. *Computers, Environment and Urban Systems*, 81:101478, 2020
- J34. Timothy Prestby, Joseph App, **Yuhao Kang**, and Song Gao. Understanding neighborhood isolation through spatial interaction network analysis using location big data. *Environment and Planning A: Economy and Space*, 52(6):1027–1031, 2020 (Featured Graphic)
- J35. Song Gao, Jinneng Rao, Xinyi Liu, **Yuhao Kang**, Qunying Huang, and Joe App. Exploring the effectiveness of geomasking techniques for protecting the geoprivacy of Twitter users. *Journal of Spatial Information Science*, 2019(19):105–129, 2019
- J36. Song Gao, Mingxiao Li, Yunlei Liang, Joseph Marks, **Yuhao Kang**, and Moying Li. Predicting the spatiotemporal legality of on-street parking using open data and machine learning. *Annals of GIS*, 25(4):299–312, 2019
- J37. Ziyu Liu, Anqi Yang, Mengyao Gao, Hong Jiang, **Yuhao Kang**, Fan Zhang, and Teng Fei. Towards feasibility of photovoltaic road for urban traffic-solar energy estimation using street view image. *Journal of Cleaner Production*, 228:303–318, 2019 ◇ **Best poster** in CUPUM 2019
- J38. Hui Peng, Yunyan Du, Zhang Liu, Jiawei Yi, **Yuhao Kang**, and Teng Fei. Uncovering patterns of ties among regions within metropolitan areas using data from mobile phones and online mass media. *GeoJournal*, 84(5):685–701, 2019
- J39. **Yuhao Kang**, Yueyao Wang, Mengze Gao, Jian Peng, Jing Zhang, and Teng Fei. Design of electronic map system based on virtual reality technology. *Journal of Geomatics*, 43(6):16–18, 2018 (In Chinese)
- J40. **Yuhao Kang**, Yueyao Wang, Zhujun Xia, Jiao Chi, Limin Jiao, and Zhiwei Wei. Identification and classification of Wuhan urban districts based on POI. *Journal of Geomatics*, 43(1):81–85, 2018 (In

Chinese)

- J41. Ying Zhuang, Lina Huang, Hengjie Zheng, Tongshuo Liu, and **Yuhao Kang**. Design and implementation of indoor navigation application system based on QR code: Take Wuhan University library as an example. *Bulletin of Surveying and Mapping*, (5):125–128, 2017 (In Chinese)

SERVICE AND LEADERSHIP

Leadership

Student Director	AAG GISS Specialty Group	<i>2022-2023</i>
Student Director	AAG CyberGIS Specialty Group	<i>2022-2023</i>
Student Director	AAG Cartography Specialty Group	<i>2021-2022</i>
Board of Directors (BOD)	Chinese Professional in Geographic Information Systems (CPGIS)	<i>2021-2023</i>
Graduate Committee	Department of Geography, UW-Madison	<i>2019-2021</i>
Curriculum Committee	Department of Geography, UW-Madison	<i>2018-2019</i>
Founder	GISphere Project	<i>2019-</i>
Founder	MicroDeepMind Company	<i>2017-2019</i>
Co-founder	Urban Playground Lab, Wuhan University	<i>2017-2018</i>
Vice-President	Wuhan University Soccer Association	<i>2016-2017</i>