Shaoqing Dai

Ph.D Candidate

Last updated: November 18, 2020

	<u>m</u> Education
	Ph.D. , Faculty of Geo-information Science and Earth Observation(ITC), University of Twente Supervised by Prof. Alfred Stein and Prof.Peng Jia Thesis: Spatial Lifecourse Epidemiology and Health Geography Major in Acquisition and quality of geo-spatial information(ACQUAL)
	M.Sc. , <i>Institute of Urban Environment, Chinese Academy of Sciences</i> , University of Chinese Academy of Sciences Supervised by Prof. Yin Ren Thesis: Creating a Carbon Source and Sink Map by Coupling an Ecological Process Model with an Emission Inventory to Study a Carbon Balance
	Major in Ecology Study a Carbon Balance Y Xiamen, China
	B.Sc. , School of Geographical Sciences, Fuajian Normal University Supervised by Associate Prof. Huixian Jiang Thesis: The Planning Location and Design of Smart Campus Based on BIM and GIS:A Case Study of Fujian Normal University Major in Geographical Science (National Talents Training Base) ♥ Fuzhou, China
	Research Interests
	Health Geography; Spatial Lifecourse Epidemiology; Spatial Statistics; Urban Computing; Spatial-Temporal Big Data; Ecoinformatics
	□ Developed Open Software
from 2018	D3L Tool of NASA Satellite (The program provides a graphical interface to download satellite imagery from NASA, such as MODIS products, MERIS and more information can see http://gisersqdai.top/D3LTool/)
from 2018	Geographical detector in R (The geographical detector software based on R)
from 2018	GitHub Paper Notebook (The software for notebook of papers)
from 2019	rgeoda rgeoda is a R package for spatial data analysis based on libgeoda and GeoDa(contributor).
from 2020	COVID-19 Dashboard shiny app (A developed dashboard shiny app about COVID-19. $\underline{\texttt{https://gisersqdai.shinyapps.io/COVID19VIS/}}$
	The Awards & Honors
2019.06	China Scholarship Council(CSC) ♥ China
2019.06	The 2nd Grade Scholarship of Yonker Environmental Protection Scholarship ♥ China
2019.06	The 1st Grade Scholarship of Institute of Urban Environment, Chinese Academy of Sciences[No.3 in Institute] • Xiamen, China

	2019.01	The Scientific and Technological Innovation Award of Outstanding Graduate Students of the Ecological Society of China
		♀ China
	2018.11	National Scholarship for M.Sc[top 2-3%] ♥ China
	2018.10	The National 3rd Prize in Urban Big Data Special Committee, Chinese Society for Urban Studies the 2nd Big Data Support Spatial Planning and Design Competition
	2018.07	'Applied Energy' 2018 Summer School Certification ♥ Beijing, China
	2018.06	Merit Students in the academic year 2017-2018, University of Chinese Academy of Sciences
	2018.06	The 2nd Grade Scholarship of Institute of Urban Environment, Chinese Academy of Sciences[No.9 in Institute]
	2018.06	The 1st Scholarship of Institute of Urban Environment, Chinese Academy of Sciences ♥ Xiamen, China
	2018.03	The National Winning Award in National Science & Technology Infrastructure Center, 2017 'Sharing Cup' College Student Science and Technology Resource Sharing Service Innovation Contest ♥ China
	2017.10	'Excellent Volunteer' award of 15th User Conference of Esri China
	2017.06	Merit Students in the academic year 2016-2017, University of Chinese Academy of Sciences $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
	2015.11	The National Winning Award in 2015 Esri Cup National Collegiate Developed Contest in GIS \cdot 3D Modeling and Design
	2015.11	Inovation Scholoarships in the academic year 2014-2015, Fujian Normal University $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
	2015.07	The National 3rd Prize in the Smart City Special Event Contest, the 14th Challenge Cup National College Students' Extracurricular Academic Science and Technology Works Contest
	2015.05	The First Annual Fujian Normal University Student Selection, Scientific and Technological Innovation award and Nomination
	2015.03	The School Wining Award during the 9th Challenge Cup National College Students' Extracurricular Academic Science and Technology Works Contest • Fuzhou, China
	2014.11	Inovation Scholoarships in the academic year 2013-2014, Fujian Normal University ♥ Fuzhou, China
	2014.07	The National 3rd Prize in 2014 MathorCup Global Collegiate Mathematical Contest in Modeling ♥ China
	2014.05	'Excellent League Cadres' in the academic year 2013-2014, Fujian Normal University ♥ Fuzhou, China
	2014.05	'Excellent League Leader' in the academic year 2013-2014, School of Geographical Sciences, Fujian Normal University
	2013.05	'Excellent League Leader' in the academic year 2012-2013, School of Geographical Sciences, Fujian Normal University
		Academic Service & Affiliations
<u> </u>	from 2019	International Initiative on Spatial Lifecourse Epidemiology (ISLE) Fellow
	from 2019	GeoDa Center, rgeoda, libgeoda Github Organizations Contributor
	from 2015	The Organizations "Sustainable Cities & Mobility" Volunteer
	from 2018	Aliyungi Community Expert
	from 2020	Guide for GIS study abroad, https://gis-info.github.io/ Editor Board Marchael Mar
	2017-2019	International Association of Landscape Ecology of China(IALE-China) Member

2016-2017	Green Bike-Transit Volunteer
2013-2017	The Geographical Tribune of Youth
	Founder, Editor in Chief, Associate Editor, Assistant Editor in Chief
from 2019	European Heart Journal, Data in Brief, The Journal of Open Source Software, Shanghai Urbar Planning Review

Reviewer



*corresponding author, #co-first author.

Peer-Reviewed Journal Articles

- 1. **SQ. Dai**, JJ. Li, WE. Yang, FY. Chen, HX. Jiang. (2020). The Evaluation of Health Effect of Short-term Exposure to PM2.5 during Spring Festival: A Case Study of 25 Cities in the Yangtze River Delta. *Shanghai Urban Planning Review.* 05, 22-29. doi:10.11982/j.supr.20200504. [in Chinese]
- 2. P. Jia, **SQ. Dai**,K. E. Rohli, R.V. Rohli, YN. Ma, C. Yu, XF. Pan, WQ. Zhou. (2020). Natural environment and childhood obesity: A systematic review. *Obesity Reviews*. 1-9. doi:10.1111/obr.13097. [SCI, IF = 7.31]
- 3. XF. Pan, H. Li, LX. Zhao, XR. Yang, JQ. Su, **SQ. Dai**, J. Ning, CX. Li, GJ. Cai, GF. Zhu. (2020). Response of syntrophic bacterial and methanogenic archaeal communities in paddy soil to soil type and phenological period of rice growth. *Journal of Cleaner Production*. 278, 123418. doi:10.1016/j.jclepro.2020.123418. [SCI, IF = 7.246]
- 4. P. Jia, XX. Cao, HX. Yang, **SQ. Dai**, P. He, GL. Huang, T. Wu, YG. Wang. (2020). Green space access in the neighbourhood and childhood obesity. *Obesity Reviews*. 1-12. doi:10.1111/obr.13100. [SCI, IF = 7.31]
- 5. MY. Luo, HQ. Li, XF. Pan, T. Fei, **SQ. Dai**, Q. Ge, YX. Zou, H. Vos, JY. Luo, P. Jia. (2020). Neighbourhood speed limit and childhood obesity. *Obesity Reviews*. 1-11. doi:10.1111/obr.13052. [SCI, IF = 7.31]
- 6. SY. Xie, GW. Yu, CX. Li, J. Li, G. Wang, **SQ. Dai**, Y. Wang. (2020). Treatment of high-ash industrial sludge for producing improved char with low heavy metal toxicity. *Journal of Analytical and Applied Pyrolysis*. *150*, 104866. doi:10.1016/j.jaap.2020.104866. [SCI, IF = 3.905]
- 7. XF. Pan, L. Zhao, JY. Luo, YH. Li, L.Zhang, T. Wu, M. Smith, **SQ. Dai**, P. Jia. (2020). Access to bike lanes and childhood obesity: A systematic review and meta-analysis. *Obesity Reviews*. 1-11. doi:10.1111/obr.13042. [SCI, IF = 7.31]
- 8. **SQ. Dai**, SD. Zuo, Y. Ren. (2020). A spatial database of CO₂ emissions, urban form fragmentation and city-scale effect related impact factors for the low carbon urban system in Jinjiang city, China. *Data in Brief.* 29, 105274. doi:10.1016/j.dib.2020.105274. [CiteScore = 1.5]
- 9. SD. Zuo, **SQ. Dai**, Y. Ren. (2020). More fragmentized urban form more CO₂ emissions? An comprehensive relationship from the combination analysis across different scales. *Journal of Cleaner Production*. *244*, 118659. doi:10.1016/j.jclepro.2019.118659. [SCI, IF = 7.246]
- 10. PF. Dou, SD. Zuo, Y. Ren, **SQ. Dai**, GL. Yun. (2019). The impacts of climate and land use/land cover changes on water yield service in Ningbo region. *Acta Scientiae Circumstantiae*. *39*(7), 2398-2409. doi:10.13671/j.hjkxxb.2019.0122. [CSCD, in Chinese]
- 11. Q. Yang, TY. Huang, SG. Wang, JS. Li, **SQ. Dai**, S. Wright, YX. Wang, & HW. Peng. (2019). A GIS-based high spatial resolution assessment of large-scale PV power generation potential and associated CO_2 emission reduction in China. *Applied Energy.* 247, 254-269. doi:10.1016/j.apenergy.2019.04.005. [SCI, IF = 8.848]
- 12. GL. Yun, YR. He, YT. Jiang, PF. Dou, **SQ. Dai**. (2019). PM2.5 spatiotemporal evolution and drivers in the Yangtze River Delta between 2005 and 2015. *Atmosphere*. 10(2), 55. doi:10.3390/atmos10020055. [SCI, IF = 2.397]
- 13. SD. Zuo, **SQ. Dai**, XD. Song, CD. Xu, YL. Liao, WY. Chang, Q. Chen, YY. Li, JF. Tang, W. Man, Y. Ren. (2018). Determining the Mechanisms that Influence the Surface Temperature of Urban Forest Canopies by Combining Remote Sensing Methods, Ground Observations, and Spatial Statistical Models. *Remote Sensing*. 10(11), 1814. doi:10.3390/rs10111814. [SCI, IF = 4.509]
- 14. SD. Zuo, **SQ. Dai**, YY. Li, JF. Tang, Y. Ren. (2018). Analysis of Heavy Metal Sources in the Soil of Riverbanks Across an Urbanization Gradient. *International Journal of Environmental Research and Public Health*. *15*(10), 2175. doi:10.3390/ijerph15102175. [SCI, IF = 2.849]
- 15. **SQ. Dai**, HX. Jiang, JJ. Li, X. Su, J. Wu, Y. Ren. (2018). Influence of walking environment on robbery, snatch and theft crime in urban area, H city, China. *Scientia Geographica Sinica*. *38*(8), 1235-1244.

- doi:10.13249/j.cnki.sgs.2018.08.005. [CSCD, in Chinese]
- 16. GL. Yun, SD. Zuo, **SQ. Dai**, XD. Song, CD. Xu, YL. Liao, PQ. Zhao, WY. Chang, Q. Chen, YY. Li, JF. Tang, W. Man, Y. Ren. (2018). Individual and Interactive Influences of Anthropogenic and Ecological Factors on Forest PM2.5 Concentrations at an Urban Scale. *Remote Sensing*. 10(4), 521. doi:10.3390/rs10040521. [SCI, IF = 4.509]
- 17. Q. Ye, G. Zeng, **SQ. Dai**, FL. Wang. (2018). Research on the effects of different policy tools on China's emissions reduction innovation. *China Population, Resources and Environment.* 28(02), 115-122. doi:10.12062/cpre.20170915. [CSCD, in Chinese]
- 18. Q. Ye, **SQ. Dai**, G. Zeng. (2017). Research on the effects of command-and-control and market-oriented policy tools on China's energy conservation and emissions reduction innovation. *Chinese Journal of Population Resources and Environment*. 16(1), 1-11. doi:10.1080/10042857.2017.1418273. [ESCI, CiteScore = 1.9]
- 19. MY. Li, **SQ. Dai**, JY. Wang, ZJ. Shen. (2016). The Analysis of Urban Spatial Development Pattern in Beijing Based on the Big Data of Government. *Geomatics World*. 23(3), 20-26. doi:10.3969/j.issn.1672-1586.2016.03.004. [in Chinese]

Book Chapter

- GL. Yun, SD. Zuo, SQ. Dai, XD. Song, CD. Xu, YL. Liao, PQ. Zhao, WY. Chang, Q. Chen, YY. Li, JF. Tang, W. Man, Y. Ren. (2019). Individual and Interactive Influences of Anthropogenic and Ecological Factors on Forest PM2.5 Concentrations at an Urban Scale. Advances in Quantitative Remote Sensing in China–In Memory of Prof. Xiaowen Li.316-332.
- SQ. Dai, JJ. Li, SD. Zuo, Y. Ren, HX. Jiang. (2017). Landscape-Scale Simulation Analysis of Waterlogging and Sponge City Planning for a Central Urban Area in Fuzhou City, China. *International Low Impact Development Conference China 2016: LID Applications in Sponge City Projects.* 251-260. doi:10.1061/9780784481042.028.
 [EI]

Patent

- 1. Y. Ren, XM. Zheng, **SQ. Dai**, Q.Chen, SD. Zuo. Improving the accuracy of forest biomass estimate using source analysis and machine learning. (*under review*).
- 2. Y. Ren, **SQ. Dai**, SD. Zuo, XM. Zheng. A forest inventory biomass estimation model by multi-sources data fusion. (*under review*).
- 3. Q. Chen, Y. Ren, XM. Zheng, SD. Zuo, **SQ. Dai**. A mixed-effect model for estimation of large area subtropical forest biomass. (*under review*).

Software Copyright

- 1. A water saftety monitation system based on environmental IOT data and InVEST model. V1.0. *RN: 2019SR0517519*. (2019).
- 2. A water conservation service monitation system based on environmental IOT data. V1.0. *RN: 2018SR745897*. (2018).

Conference Paper & Abstract

- 1. JJ. Li, YP. Liu, **SQ. Dai**, KY. Xiang, HX. Jiang, WQ. Chen. (2019). The night light uncovers city's weight—A case study on estimating construction materials in Fuzhou, China. *10th International Conference on Industrial Ecology, abstract 320*
- 2. **SQ. Dai**. (2018). The Scale Effect, Zoning Effect of Geographical Features, the Modified Areal Unit Problem and the Chanlleges of Spatial Stastistics. *11th Chinese R Language Conference, abstract*
- 3. **SQ. Dai**, SD. Zuo, Y. Ren. (2018). High-resolution mapping of direct CO₂ emissions and uncertainties at the urban scale. *Proceedings of Spatial Accuracy 2018*. 88-90. [EI]
- 4. **SQ. Dai**[#], XM. Zheng, SD. Zuo,Y. Ren. (2018). Improving the prediction accuracy of forest aboveground biomass benchmark map by integrating machine learning and spatial statistics. *Proceedings of Spatial Accuracy* 2018. 80-83. [EI]
- 5. SD. Zuo, **SQ. Dai**, Y. Ren, ZW. Yu. (2017). Quantifying the linear and nonlinear relations between the urban form fragmentation and the carbon emission distribution. *American Geophysical Union, Fall Meeting 2017, abstract GC21G-1007*.
- 6. **SQ. Dai**, Y.Ren, SD. Zuo, M. Dai, P. Chen, Z. Wang, LX. Xu, JW. Qi, GL. Yun. (2017). The Environmental Effect of Urban Form on PM2.5: A Case Study of Beijing-Tianjin-Hebei Urban Agglomerations. *9th Chinese*

- Landscape Eoclogy workshop, abstract.
- 7. Q. Ye, G. Zeng, **SQ. Dai**, FL. Wang. (2017). Research on the Effects of Different Policy Tools on China's Energy Conservation and Emissions Reduction Innovation Based on the Panel Data of 285 prefectural-level municipalities. 2017 annual conference of the Chinese geographical society, economic geography and Specialized Committee Abstracts Proceedings, abstract.
- 8. **SQ. Dai**, Y.Ren, SD. Zuo. (2017). The relationship between the fragmented urban form landscape and the carbon emission distribution at different resolutions. *9th Lecture of Modern Ecology, abstract*.
- 9. **SQ. Dai**, HX. Jiang, JJ. Li, X. Su, J. Wu, K. Chen. (2016). The environmental crime analysis based on WalkScore and CGT model, a case study of H city. *The Workshop of 12th Spatial Behavior and Planning & Spatial-Temporal Behavior and Social Planning Researchg, abstract.*
- SQ. Dai, HX. Jiang, JJ. Li, QW. Xu. (2016). Transportation Planning of Smart City on the Basis of Data Augmentation Design Under the Perspective of Humanism: A Case Study of Fuzhou's Cangshan District. 10th annual conference of International Association of China Planning, abstract 1813.
- 11. **SQ. Dai**, HX. Jiang, JJ. Li. (2016). The Simulation Analysis of Waterlogging and the Sponge City Planning Control of Central Urabn Area in Fuzhou City. *2016 International Low Impact Development Conference, paper 391*.

Open Dataset & Code

- 1. SQ. Dai. (2020). GISerDaiShaoqing/3dmodelFJNU 1.0 (Version 1.0). [Data set]. Zenodo. doi:10.5281/zenodo.4277977.
- 2. **SQ. Dai**, SD. Zuo, Y.Ren. (2020). GISerDaiShaoqing/Urban-Carbon-Dioxide-sources-gridded-maps-and-its-determination-in-Jinjiang-city 0.4 (Version 0.4). [Data set]. Zenodo. doi:10.5281/zenodo.3566072.

Papers submitted/under revision

- 1. **SQ. Dai**, SD. Zuo, CY. Lai, JJ. Li, SY. Xie, BC. Chen, Y. Ren. Investigating the uncertainties propagation analysis of CO_2 emissions gridded maps at the urban scales: a case study of Jinjiang city, China. *Remote Sensing*. (*submitted*).
- 2. **SQ. Dai**[#], XM. Zheng, L. Gao, CD. Xu, SD. Zuo, Q. Chen, XH. Wei, Y. Ren. Improving plot-level model of forest aboveground biomass: A combined approach using machine learning with spatial statistics. *Journal of Cleaner Production*. (under review).
- 3. XM. Zheng, **SQ. Dai**, Q. Chen, K. Calders, CD. Xu, XH. Wei, MZ. Zhuang, Y. Ren. Integrating Spatial Statistics and Machine Learning to Analyze Error Sources in Estimating Forest Aboveground Biomass from Airborne LiDAR Data. *Agricultural and Forest Meteorology*. (under review).
- 4. LL. Song, **SQ. Dai**, Z. Cao, YP. Liu, WQ. Chen. Spatiotemporal dynamics of steel resources accumulated above ground in mainland China: 1995-2030. *Journal of Cleaner Production*. (*under revision*).
- 5. SJ. Yang, **SQ. Dai**, YL Huang, P. Jia. Commentary: Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus (SARS-CoV2). *Frontiers in Public Health*. (*under review*).
- 6. PF. Dou, SD.Zuo, Y. Ren, M.J. Rodriguez, **SQ. Dai**. Refined water security assessment for sustainable water management: A case study of 15 key cities in the Yangtze River Delta, China. *Journal of Hydrology.* (under revision).

Research Projects

- 2018-2019 'The construction of Typhoon Disaster Assessment Index Based on GIS and Multi-source Remote Sensing Data in Fujian Province', Open Fund of the Big Data Institute of Digital Natural Disaster Monitoring in Fujian (NDMBD2018001)
 Investigator
- 2016-2020 'Research on the key technology research and integration demonstration of urban agglomeration ecological security in the Yangtze River Delta', National Key Research and Development Plan(2016YFC0502704)
- 2015-2018 'Scaling up of carbon sequestration for Eucalyptus plantations based on ETKF-3DVAR hybrid data assimilation', National Natural Science Foundation of China(31470578)
 Investigator
- 2015-2016 'The Spatiotemporal Difference of Tourism in Fujian Province Based on Spatial Mismatch Theory', The Technological Innovation Plan of University Students, Fujian Normal University(cxxl-2015137)

Investigator

2 015-2016	'The Spatial Optimization Evaluation of Medical Facility Based on GIS in Cangshan District, Fuzhou', The Technological Innovation Plan of University Students, Fujian Normal University(cxxl-2015146) Investigator
2014-2015	'The Optimization Model of High Education Staff's Refuge Space Under Earthquake Disater', The Technological Innovation Plan of University Students, Fujian Normal University(cxxl-2014137) PI
	Presentations
2020.08.07	What is geography? From coronavirus disease 2019 to Bei Dou Systems, Geography lecture group, Tong An No.1 High School of Fujian
44	♥ Tong An No.1 High School of Fujian, Xiamen, China
2 018.05.27	The Scale Effect, Zoning Effect of Geographical Features, the Modified Areal Unit Problem and the Chanlleges of Spatial Stastistics, 11th Chinese R Language Conference Renmin University of China, Beijing, China
" 2018.05.22	High-Resolution Mapping of Direct CO ₂ Emissions and Uncertainties at the Urban Scale , 13th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences(Spatial Accuracy 2018)
	♥ China National Convention Center, Beijing, China
2 017.11.11	The Environmental Effect of Urban Form on PM2.5: A Case Study of Beijing-Tianjin-Hebei Urban Agglomeration, 9th Chinese Landscape Eoclogy workshop Sanyu Houtel, Guangzhou, China
2017.09.28	The Assement Platform of Urban Forest Ecosystem Servcie Based on InVEST model and IOT(invited), 2rd urban environment long-term monitor and sustainable development workshop Shanghai Normal University, Shanghai, China
2 016.11.27	The Criminal Geographical Analysis about Walking Environment of Urban , <i>The Workshop of 12th Spatial Behavior and Planning & Spatial-Temporal Behavior and Social Planning Research</i> ♀ Beijing Union University, Beijing, China
2 016.07.01	Transportation Planning of Smart City on the Basis of Data Augmentation Design Under the Perspective of Humanism: A Case Study of Fuzhou's Cangshan District, 10th annual conference of International Association of China Planning
	♀ Peking University, Beijing, China
	Selected Posters
2017.12.10	Quantifying the linear and nonlinear relations between the urban form fragmentation and the carbon emission distribution, $2017\ AGU\ Fall\ Meeting$
0.0	♥ New Orleans, LA, USA.
2017.05.16	The relationship between the fragmented urban form landscape and the carbon emission distribution at different resolutions, 9th Lecture of Modern Ecology
AAA A A A A A A A A	♥ Shanghai, China
2016.06.26	The Simulation Analysis of Waterlogging and the Sponge City Planning Control of Central Urabn Area in Fuzhou City, 2016 International Low Impact Development Conference
	□ Languages
Chinese	
	☐ Expertise & Skills

Major GIScience, Remote Sensing, Health Geography, Spatial Statistics, Urban Studies, Environments,

Ecological Modelling, Landscape Ecology

Programming R, Python, CGA, Shell, LaTeX, Makrdown, Github **Expertise** ArcGIS, ENVI, Erdas Image, PostGIS, City Engine