Shaoqing Dai

Ph.D Candidate

+86-(0)592-18850440994
@Daishaoqing
dsq1993qingge@163.com
http://gisersqdai.top/mycv/
Hengelosestraat 99, 7514AE, Enschede,the Netherlands
Deparment of Earth Obesrvation Science, ITC, UT

Last updated: May 26, 2020

Education

2020.01-present **Ph.D.**, *Faculty of Geo-information Science and Earth Observation(ITC)*, University of Twente
Supervised by Prof. Alfred Stein and Assistant Prof.Peng Jia
Thesis:*Spatial Lifecourse Epidemiology and Health Geography*
Major in Acquisition and quality of geo-spatial information(ACQUAL) — Enschede, Netherlands

2016.09-2019.06 **M.Sc.**, *Institute of Urban Environment,Chinese Academy of Sciences*, 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 — Xiamen, China

2012.09-2016.06 **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. https://gisersqdai.shinyapps.io/COVID19VIS/)

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 — China
- 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 — Beijing, China
- 2018.06 The 2nd Grade Scholarship of Institute of Urban Environment, Chinese Academy of Sciences[*No.9 in Institute*] — Xiamen, China
- 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 — China
- 2017.06 Merit Students in the academic year 2016-2017, University of Chinese Academy of Sciences — Beijing, China
- 2015.11 The National Winning Award in 2015 Esri Cup National Collegiate Developed Contest in GIS · 3D Modeling and Design — China
- 2015.11 Inovation Scholoarships in the academic year 2014-2015, Fujian Normal University — Fuzhou, China
- 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 — China
- 2015.05 The First Annual Fujian Normal University Student Selection, Scientific and Technological Innovation award and Nomination — Fuzhou, China
- 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 — Fuzhou, China
- 2013.05 'Excellent League Leader' in the academic year 2012-2013, School of Geographical Sciences, Fujian Normal University — Fuzhou, China

Academic Service & Affiliations

- 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 Aliyunqi Community — **Expert**
- 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 Data in Brief, The Journal of Open Source Software

Reviewer

Publications

*corresponding author, #co-first author.

Peer-Reviewed Journal Articles

1. 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 = 8.192]
2. **SQ. Dai**, SD. Zuo, Y. Ren. (2020). A spatial database of CO_2 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 = 0.93]
3. SD. Zuo, **SQ. Dai**, Y. Ren. (2020). More fragmentized urban form more CO_2 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 = 6.395]
4. 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]
5. 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 = 8.426]
6. 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 = 2.046]
7. 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 = 4.118]
8. 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 = 2.468]
9. **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]
10. 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 = 4.118]
11. 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]
12. 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]
13. 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

1. 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.

2. **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, **SQ. Dai**, SD. Zuo, XM. Zheng. A forest inventory biomass estimation model by multi-sources data fusion. (*under review*)
2. 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 CO_2 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*.
10. **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**, SD. Zuo, Y.Ren. (2020). GISerDaiShaoqing/Urban-Carbon-Dioxide-sources-gridded-maps-and-its-detemination-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, ZW. Yu, JJ. Li, SY. Xie, BC. Chen, Y. Ren. A framework for uncertainty propagation in gridded maps of CO_2 emissions: a case study of Jinjiang city, China. *Remote Sensing*. (*under review*).
2. **SQ. Dai**[#], XM. Zheng, L. Gao, CD. Xu, SD. Zuo, Q. Chen, XH. Wei, Y. Ren. Improving maps of forest above-ground biomass: A combined approach using machine learning with a spatial statistical model. *Biogeosciences*. (*under revision*).
3. XM. Zheng, **SQ. Dai**, Q. Chen, CD. Xu, XH. Wei, MZ. Zhuang, Y. Ren. Source Analysis of Uncertainty in Estimates of Forest Above-ground Biomass by Integrating Spatial Statistics, Machine Learning, Forest inventory Data, and Airborne LiDAR Data. *Remote Sensing of Environment*. (*submitted*).
4. 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*).
5. 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*).
6. XF. Pan, H. Li, LX. Zhao, XR. Yang, JQ. Su, **SQ. Dai**, CX. Li, GJ. Cai, GF. Zhu. Response of syntrophic bacterial and methanogenic archaeal communities in paddy soil to soil type and phenological stage of rice growth. *Journal of Cleaner Production*. (*submitted*).
7. SY. Xie, CX. Li, J. Li, G. Wang, **SQ. Dai**, Y. Wang, GW. Yu. Treatment of industrial sludge via co-pyrolysis with rice straw for biochar improvement and heavy metals immobilization. *Journal of Analytical and Applied Pyrolysis*. (*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) **Investigator**

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**

2015-2016 '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

2018.05.27 **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

2017.11.11 **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

2016.11.27 **The Criminal Geographical Analysis about Walking Environment of Urban**, *The Workshop of 12th Spatial Behavior and Planning & Spatial-Temporal Behavior and Social Planning Research*
Beijing Union University, Beijing, China

2016.07.01 **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*
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*
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*
China National Convention Center, Beijing, China

Languages

Chinese Native English First foreign language

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