Shaoqing Dai

M.Sc in Ecology

📱 *+86-(0)592-6190679*
⌨ *@Daishaoqing*
✉ *sqdai@iue.ac.cn*
🌐 *http://gisersqdai.top/mycv/*
🗺 *1799 Jimei Road, Xiamen, Fujian, 361021, China*
🏢 *Institute of Urban Environment, Chinese Academy of Sciences*

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🏛 Education

📅 2016-2019   **M.Sc.**, *Institute of Urban Environment,Chinese Academy of Sciences*, University of Chinese Academy of Sciences
Supervised by Prof. Yin Ren
Thesis:*Mappping of carbon emission and sink based on coupling ecological processing model with emission inventory*
Major in Ecology   📍 Xiamen, China

📅 2012-2016   **B.Sc.**, *School of Geographical Sciences*, Fuajian Normal University
Supervised by A/Prof. Huixian Jiang
Thesis:*The simulation model of building site location and construction based on data augmented design and BIM: a case study of Fujian Normal University*
Major in Geographical Sciences(National Base)   📍 Fuzhou, China

ℹ Research Interests

Urban Computing; Spatial-Temporal Big Data; Ecological Modeling and Ecoinformatics; Intergration of Ecology, GIS and RS; Spatial Statistics

🖥 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)

📘 Publications

*corresponding author, #co-first author.

📘 Peer-Reviewed Journal Articles

8. 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), 55-69 doi:10.3390/atmos10020055. [SCI, IF = 1.704]

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), 1814-1832 doi:10.3390/rs10111814. [SCI, IF = 3.406]

6. 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), 2175-2198 doi:10.3390/ijerph15102175. [SCI, IF = 2.145]

5. **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]

4. 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), 521-538 doi:10.3390/rs10040521. [SCI, IF = 3.406]

3. 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*. *210*(02), 115-122. doi:10.12062/cpre.20170915. [CSCD, in Chinese]

2. 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]

1. ML. 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. **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]

📖 Papers submitted/under revision

6. **SQ. Dai**, SD. Zuo, & Y. Ren. High-resolution mapping of direct CO_2 emissions and uncertainties at the urban scale. (*submitted*).

5. **SQ. Dai**[#], XM. Zheng, SD. Zuo, & Y. Ren. Improving the Prediction Accuracy of Forest Aboveground Biomass Map by Integrating Machine Learning and Spatial Statistics. (*submitted*).

4. SD. Zuo, **SQ. Dai**, Y. Ren, R. Zhou, & ZW. Yu. More fragmentized urban form more CO_2 emissions? An comprehensive relationship from the combination analysis across different scales (*submitted*).

3. ZF. Wu, **SQ. Dai**, W. Man, Q. Chen, SD. Zuo, JF. Tang, YY. Li, Y. Ren. Interactive effects of human activity and environmental factors on variation in urban forest surface temperature. (*under review*).

2. LY. Cai, SD. Zuo, ZF. Wu, GL. Yun, XM. Zheng, **SQ. Dai**, Y. Ren. Effects of different green spaces on air PM2.5 in the winter in Southeast China at landscape scales. (*under review*).

1. Q. Yang, TY. Huang, SG. Wang, JS. Li, **SQ. Dai**, S. Wright, YX. Wang, & HW. Peng. A GIS-based high spatial resolution assessment of large-scale PV power generation potential and associated CO_2 emission reduction in China. (*under review*).

🏆 Awards & Honors

📅	2019	The Scientific and Technological Innovation Award of Outstanding Graduate Students of the Ecological Society of China	📍 China
📅	2018	National Scholarship for M.Sc.[*top 2-3%*].	📍 China
📅	2018	The National Third Prize in Urban Big Data Special Committee, Chinese Society for Urban Studies the 2nd Big Data Support Spatial Planning and Design Competition	📍 China
📅	2018	'Applied Energy' 2018 Summer School Certification	📍 Beijing, China
📅	2018	Merit Students of University of Chinese Academy of Sciences	📍 Beijing, China

📅 2018   The Second Scholarship of Institute of Urban Environment, Chinese Academy of Sciences[*top 15%*].
📍 Xiamen, China

📅 2018   The National Winning Award in 2017 'Sharing Cup' College Student Science and Technology Resource Sharing Service Innovation Contest   📍 China

📅 2017   'Excellent Volunteer' award of 15th User Conference of Esri   📍 China

📅 2017   Merit Students of University of Chinese Academy of Sciences   📍 Beijing, China

📅 2015   The National Winning Award in 2015 Esri Cup National Collegiate Developed Contest in GIS·3D Modeling and Design   📍 China

📅 2015   The National Third Prize in the 'Smart City' Special Competition of 14th 'Challenge Cup' National College Student Curricular Academic Science and Technology Works Competition   📍 China

📅 2015   The First Annual Fujian Normal University Student Selection, Scientific and Technological Innovation award and Nomination   📍 Fuzhou, China

📅 2015   Scientifc and Technological Inovation Scholoarships of Fujian Normal University   📍 Fuzhou, China

📅 2014   The School Wining Award during the 9th 'Challenge Cup' Fujian Normal University College Student Curricular Academic Science and Technology Works Competition   📍 Fuzhou, China

📅 2014   The National Third Prize in 2014 MathorCup Global Collegiate Mathematical Contest in Modeling Certifcate of Achievement   📍 China

📅 2014   'Excellent League Cadres' award of Fujian Normal University, China   📍 Fuzhou, China

📅 2014   Scientifc and Technological Inovation Scholoarships of Fujian Normal University   📍 Fuzhou, China

📅 2014   'Outstanding communist Youth League cadres' award of Fujian Normal University 📍 Fuzhou, China

📅 2013   'Outstanding communist Youth League cadres' award of Fujian Normal University 📍 Fuzhou, China

👥 Professional Societies & Activities

📅 from 2015   The Subscription Accounts "Sustainable City·Transportation"   **Volunteer**

📅 from 2017   International Association of Landscape Ecology of China(IALE-China)   **Member**

📅 2016-2017   Green Bike-Transit   **Volunteer**

📅 2013-2017   The Geographical Tribune of Youth   **Founder, Chief Editor, Subeditor, Assistant Chief Editor**

🏛 Research Projects

📅 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 fxation 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**, *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

📅 2016.07.02 **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

📅 2018 **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 **Quantifying the linear and nonlinear relations between the urban form fragmentation and the carbon emission distribution**, *9th Lecture of Modern Ecology*

📍 Shanghai, China

📅 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*

📍 Beijing, China

💬 Languages

Chinese Native   English First foreign language

🖥 Expertise & Skills

Major   GIScience, Remote Sensing, Spatial Statistics, Urban Studies, Environments, Ecological Modelling
Programming   CGA, Python, Fortran, R, Shell, LaTeX, Makrdown, Github
Expertise   QGIS, ArcGIS, ENVI, Erdas Image, PostGIS, City Engine