Zhen Qian

Technical University of Munich
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Personal Homepage
Google Scholar
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EDUCATION

Technical University of Munich 03/2024 – Present
Doctoral student in Earth System Modeling *Munich, Germany*
Supervisor: Prof. Dr. Niklas Boers (ESM group)

Nanjing Normal University 09/2020 – 06/2023
M.S in GIScience (awarded National Scholarship) *Nanjing, China*
Supervisor: Prof. Dr. Min Chen (OpenGMS group)

Nantong University 09/2016 – 06/2020
B.S in GIScience (awarded National Scholarship) *Nantong, China*

RESEARCH EXPERIENCES

Research Assistant 07/2023 – 02/2024
Nanjing Normal University *Nanjing, China*

- Intelligent Earth surface system modeling (OpenGMS-IME)
- Geospatial artifial intelligence for urban renewable energy transition

RESEARCH INTERESTS

Coupled Human and Natural Systems
Sustainable urban environment; Forest loss and resilience; Climate change

Data-driven (and Hybrid) Modeling
(Statistical) Machine learning; Deep learning; AI4Geoscience

Geoinformatics and Remote Sensing
Space-time data processing, analysis and modeling

RESEARCH OUTPUTS

Publication statistics

- More than 20 manuscripts published in journals since 2018 (8 as first author)
- Citations: 363; h-index: 13; i10-index: 13 (as Apr 2024, statistics by Google Scholar)

Featured publications (complete publication list available at Google Scholar)
(Note: "†" indicates equal contribution)

1. **Qian, Z.**, Chen, M., Sun, Z., ..., and Zhang, Z.: Simultaneous extraction of diverse building information across large-scale urban landscapes using high-resolution satellite imagery. *Sustainable Cities and Society*, 106, 105393. (2024) [DOI]
2. Chen, M. †, **Qian, Z. †**, Boers, N., ..., and Lü, G.: Iterative integration of deep learning in hybrid Earth surface system modelling. *Nature Reviews Earth & Environment*, 4(8), 568-581. (2023) [DOI]

3. **Qian, Z.**, Chen, M., Yang, Y., ..., and Yan, J.: Vectorized dataset of roadside noise barriers in China using street view imagery. *Earth System Science Data*, 14(9), 4057-4076. (2022) [DOI]

4. Zhang, Z., **Qian, Z.**, Zhong, T., ..., and Yan, J.: Vectorized rooftop area data for 90 cities in China. *Scientific Data*, 9, 66. (2022) [DOI]

5. **Qian, Z.**, Chen, M., Zhong, T., ..., and Lü, G.: Deep Roof Refiner: A detail-oriented deep learning network for refined delineation of roof structure lines using satellite imagery. *International Journal of Applied Earth Observation and Geoinformation*, 107, 102680. (2022) [DOI]

SELECTED AWARDS & HONORS

Awards

Provincial Outstanding Graduates 2023
Pacemaker to Merit Student in University for Postgraduates 2022
Excellent Student Cadre in University for Postgraduates 2021
Provincial Excellent Undergraduate Thesis 2021
Provincial Excellent Student Cadre for Undergraduates 2019
Pacemaker to Merit Student in University for Undergraduates 2018
Excellent Student Cadre in University for Undergraduates 2017, 2019

Scholarships

President's Scholarship for Postgraduates 2023
Ranked Top 0.1% *Award amount: 10k ¥*

National Scholarship for Postgraduates 2022
Ranked Top 0.1% *Award amount: 20k ¥*

First Prize Scholarship in University for Postgraduates 2020, 2021, 2022
Ranked Top 1% *Award amount: 3×12k ¥*

National Scholarship for Undergraduates 2018
Ranked Top 0.1% *Award amount: 8k ¥*

Enterprise Scholarship for Undergraduates 2017, 2019
Ranked Top 1% *Award amount: 2×2.5k ¥*

First Prize Scholarship in University for Undergraduates 2017, 2018, 2019
Ranked Top 1% *Award amount: 3×1.5k ¥*

Contests

Second Prize in National Graduate Mathematical Modeling Contest 2020
Team leader

Third Prize in National Software Engineering Design Contest 2019
Individual

Second Prize in Beidou Sci. & Tech. Invention Contest in East China 2019
Team leader

Meritorious Winner in COMAP's Mathematical Modeling Contest 2018
Team leader

First Prize in National GIS Application Skills Contest 2017, 2018
Team leader

RESEARCH GRANTS

Provincial Research and Practice Innovation Program 2022-2023
Title: Spatial intelligent analysis considering geographic priors; PI *Funding amount: 15k ¥*

Provincial Research and Practice Innovation Program 2018-2019
Title: Travel behavior detection based on artificial intelligence; PI *Funding amount: 8k ¥*

ACADEMIC ACTIVITIES

Reviewer Services

Geo-spatial Information Science; International Journal of Applied Earth Observation and Geoinformation; Scientific Reports; Earth Science Informatics; The Journal of Supercomputing

Presentations

The Ninth Conference on Virtual Geographic Environment 08/2023
Title:Simultaneous extraction of building information across large-scale landscapes *Yanji*

The Eighth Conference on Virtual Geographic Environment 07/2022
Title: Roof structural line delineation based on deep learning and satellite imagery *Ganzhou*

TEACHING EXPERIENCES

Spatio-temporal big data analysis methods 11/2023, 11/2022, 11/2021
Spatial data structure 09/2018
Fundamentals of GIS algorithms 05/2018
C/C++ language programming 05/2017

SPECIALIZED SKILLS

Languages

Mandarin (Native), English (Professional proficiency), German (Elementary)

Programming

Python (Proficient, including OpenCV, Pytorch, Numpy, Pandas, Matplotlib, GDAL, etc.), Julia, R, Matlab

Professional tools

ArcGIS, QGIS, GEE, etc