

Zhen Qian

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EDUCATION

Technical University of Munich <i>Doctoral student in Earth System Modeling</i> <i>Supervisor: Prof. Dr. Niklas Boers (ESM group)</i>	03/2024 – Present <i>Munich, Germany</i>
Nanjing Normal University <i>M.S in GIScience (awarded National Scholarship)</i> <i>Supervisor: Prof. Dr. Min Chen (OpenGMS group)</i>	09/2020 – 06/2023 <i>Nanjing, China</i>
Nantong University <i>B.S in GIScience (awarded National Scholarship)</i>	09/2016 – 06/2020 <i>Nantong, China</i>

RESEARCH EXPERIENCES

Guest Researcher <i>Potsdam Institute for Climate Impact Research</i>	03/2024 – Present <i>Potsdam, Germany</i>
Research Assistant <i>Nanjing Normal University</i>	07/2023 – 02/2024 <i>Nanjing, China</i>

RESEARCH INTERESTS

- Coupled Human and Natural Systems**
Sustainable urban environment; Forest loss and resilience; Tipping points; Climate change
- Data-driven (and Hybrid) Modeling**
Statistics; Machine learning; Deep learning; Generative AI; Foundation models
- Geoinformatics and Remote Sensing**
Space-time data curation, processing, analysis and modeling

RESEARCH OUTPUTS

Publication statistics

- More than 20 peer-reviewed publications (8 as first author, including Nat. Rev. Earth Environ., Earth Syst. Sci. Data, Sustain. Cities Soc.)
- Citations: 392; h-index: 13; i10-index: 13 (as May 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
<i>Ranked Top 0.1% / Award amount: 10k ¥</i>	
National Scholarship for Postgraduates	2022
<i>Ranked Top 0.1% / Award amount: 20k ¥</i>	
First Prize Scholarship in University for Postgraduates	2020, 2021, 2022
<i>Ranked Top 1% / Award amount: 3×12k ¥</i>	
National Scholarship for Undergraduates	2018
<i>Ranked Top 0.1% / Award amount: 8k ¥</i>	
Enterprise Scholarship for Undergraduates	2017, 2019
<i>Ranked Top 1% / Award amount: 2×2.5k ¥</i>	
First Prize Scholarship in University for Undergraduates	2017, 2018, 2019
<i>Ranked Top 1% / Award amount: 3×1.5k ¥</i>	

Contests

Second Prize in National Graduate Mathematical Modeling Contest	2020
<i>Team leader</i>	
Third Prize in National Software Engineering Design Contest	2019
<i>Individual</i>	
Second Prize in Beidou Sci. & Tech. Invention Contest in East China	2019
<i>Team leader</i>	
Meritorious Winner in COMAP's Mathematical Modeling Contest	2018
<i>Team leader</i>	
First Prize in National GIS Application Skills Contest	2017, 2018
<i>Team leader</i>	

RESEARCH GRANTS

Provincial Research and Practice Innovation Program	2022-2023
<i>Title: Spatial intelligent analysis considering geographic priors; PI</i>	<i>Funding amount: 15k ¥</i>
Provincial Research and Practice Innovation Program	2018-2019
<i>Title: Travel behavior detection based on artificial intelligence; PI</i>	<i>Funding amount: 8k ¥</i>

ACADEMIC ACTIVITIES

Reviewer Services

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

Presentations

The Ninth Conference on Virtual Geographic Environment	08/2023
<i>Title: Simultaneous extraction of building information across large-scale landscapes</i>	<i>Yanji</i>
The Eighth Conference on Virtual Geographic Environment	07/2022
<i>Title: Roof structural line delineation based on deep learning and satellite imagery</i>	<i>Ganzhou</i>

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