Bowen Gao

+(86)18603462670 | Bowen-Gao@outlook.com | github.com/geobowen

OBJECTIVES

I am a dedicated and accomplished PhD graduate specializing in Remote Sensing and GIS, complemented by extensive experience in satellite imagery processing and geospatial data analysis. I am skilled in utilizing cutting-edge deep learning approaches in GeoAI research. I am seeking challenging opportunities where I could apply technical expertise and research experience in solving real-world problems and developing innovative solutions for diverse fields. I am confident that being well-motivated, diligent, detail-oriented and analytical I should be able to contribute to the future success of my employer.

ABILITIES

- Quick learner: acquired an impressive set of technical skills in a short period of time to support PhD research
- Natural leader: held numerous leadership positions in academic and social circles at the university
- Persistent in delivering results: proven through a broad range of academic achievements

TECHNICAL SKILLS

- Programming Languages: Python, R, C++, SQL, Matlab
- Tools: TensorFlow, PyTorch, scikit-learn, OpenCV, GDAL, Rasterio, scikit-image, pandas, Google Earth Engine, Git
- Software: QGIS, ArcGIS, ENVI, Agisoft Photoscan, PostgreSQL, Adobe Photoshop, Inkscape, MS Office
- Operating Systems: Windows, Linux

EDUCATION

Zhejiang University   **Hangzhou, China**
PhD, Remote Sensing and Geographic Information System (GIS)   Sept 2017–Sept 2023

- Fields: image processing & analysis, spatio-temporal data analysis, GeoComputation, GeoAI, geomorphological mapping
- Doctoral thesis: Spatial distribution characteristics of yardang landforms and their impact factors in the Qaidam Basin based on multi-source remote sensing data. Supervised by Prof. Dr. Ninghua Chen.

Paris Lodron University of Salzburg   **Salzburg, Austria**
Visiting PhD Student   Jun 2021–Jun 2022

- Fellowship recipient (Zhejiang University International Cooperative Research and Exchange Programs). Supervised by Prof. Dr. Thomas Blaschke.

Hohai University   **Nanjing, China**
BEng, Geodesy and Geomatics Engineering, GPA: 4.6/5.0   Sept 2013–Jun 2017
BBA, Business Administration, GPA: 4.6/5.0

RESEARCH EXPERIENCE

Zhejiang University, School of Earth Sciences   **Hangzhou, China**
PhD Researcher   Sept 2017–Sept 2023

- Collected very high spatial resolution remote sensing imagery from the Google Earth platform; created and published a COCO format dataset for the segmentation task of yardang landform
- Implemented and improved a CNN-based deep learning model to detect, classify, and delineate yardangs and evaluated the algorithm accuracy with the change of image resolution and spatial content
- Conducted a large-scale mapping of yardangs using the proposed deep learning model; extracted the morphological parameters (length, width, aspect ratio, orientation, area, etc.) of more than 680,000 yardangs using open-source tools and auto-process scripts to reveal their spatial distribution
- Utilized the statistical model (PLS-SEM) to analyze the relationships between yardang abundance at the landscape scale and its impact factors (wind, soil, topography, precipitation, etc.) derived from multi-source remote sensing and geospatial datasets
- Constructed 3D terrain model of yardangs with Agisoft Photoscan using UAV images; modeled its near-surface wind field
- Studied land surface erosion process in arid regions using landscape evolution modeling (Landlab)
- Worked with team to extract other geomorphic features (dyke swarms, triangular facets) with diverse computer vision approaches

Paris Lodron University of Salzburg, Department of Geoinformatics - Z_GIS **Salzburg, Austria**

PhD Researcher Jun 2021–Jun 2022

- Worked with the Risk, Hazard & Climate and EO Analytics research group to apply deep learning algorithms to the mapping of landslides based on multispectral/SAR imagery

China National Silk Museum **Hangzhou, China**

Researcher Jan 2020–Dec 2022

- Worked with a team for the development of Jinshow World Silk Interactive Map (an information database and demonstration platform for silk cultural heritage, National Key R&D Program of China)
- Designed data storage schema for structural and non-structural data
- Pre-processed data, including data cleaning and spatializing with PostgreSQL and Python
- Assisted in the paperwork for the project proposal, final report, and technical documents

Second Institute of Oceanography of the Ministry of Natural Resources of China **Hangzhou, China**

Software Developer Jan 2018–Dec 2019

- Developed a standalone GIS application with C++ based on QGIS 2 API to manage and process raster/vector data for offshore environment research

LEADERSHIP EXPERIENCE

Zhejiang University, School of Earth Sciences Sept 2018–Sept 2021

Teaching Fellow **Hangzhou, China**

- Prepared course material including lectures and experiments for the graduate course Remote Sensing Geo-Analysis
- Advised 200+ students on research design, experimental guidance, and weekly homework

Zhejiang University, Publicity Department of the Doctoral Students' Union Dec 2017–Dec 2018

Vice Director **Hangzhou, China**

- Managed and maintained the social media (WeChat) official account of the association which has 30k+ followers
- Designed logos, posters, and other visual image materials for the opening ceremony and university anniversary

Zhejiang University, Chu Kochen Honors College Sept 2018–Sept 2019

College Counselor **Hangzhou, China**

- Assisted 100+ students in the evaluation of awards, career development, employment services, funding, and daily affairs management

Zhejiang University, Choir of the Graduate Art Troupe Sept 2018–Sept 2019

Leader **Hangzhou, China**

- Planned and organized 5 university-level performances; scheduled rehearsals and vocal training for group members
- Led a team of 13 to participate in the 11th Singapore Chinese Vocal International Competition and won 4 gold awards

LANGUAGES

Chinese (Native), English (Proficient/C1), French (Conversational/B1), German (Beginner/A1)

SELECTED PUBLICATIONS

- **Gao B**, Chen N, Blaschke T, et al. Automated characterization of yardangs using deep convolutional neural networks[J]. Remote Sensing, 2021, 13(4): 733.
- Zhang H, Chen N, **Gao B**, et al. Semi-automatic mapping of dyke and dyke-related fractures using UAV-based photogrammetric data: A case study from Sijiao Island, coastal Southeastern China[J]. Journal of Structural Geology, 2020, 132: 103971.
- Lin N, Xu Y, **Gao B**, et al. Semi-automatic extraction of triangular facet attitude based on edge extraction algorithm[J] Earth Science, 2021, 46(10): 3753-3763 (in Chinese)
- **Gao B**, Chen N, Zhang D, et al. Large-scale mapping of yardangs in the Qaidam Basin using deep learning and effects of multiple environmental factors on yardang development [J] Geomorphology, 2024 (revision submitted)