

Zuofang Zhang

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Skills

- Software and tools: Esri ArcGIS and extensions (ArcMap, ArcGIS Pro, ArcGIS Online, Web AppBuilder, Experience Builder, Survey123), QGIS, ENVI, Fusion, MySQL
- Programming languages: Python, R, SQL
- Data types: shapefiles, metadata, geodatabase, satellite and UAV imagery, LiDAR, radar, GPS, tabular data

Education

University of British Columbia

Vancouver, BC

Master of Geomatics for Environmental Management

Graduated June 2020

- Remote sensing for conservation monitoring research: evaluating mangrove conservation effectiveness in Peam Krasop Wildlife Sanctuary, southwest Cambodia using R, ENVI, and ArcGIS. Accessible at: <https://arcg.is/14viCq>

Bachelor of Science in Forest Sciences with Honors

Graduated June 2019

Experience

China Aerospace Science & Industry Corporation

Beijing, China

GIS Solution Engineer

August 2020 – October 2023

- Engaged with clients in the field of environmental management to understand their business workflows and translate business requirements into web and mobile geospatial solutions specifying datasets, data processing and quality assurance/quality control procedures, analysis methodologies, and functionality of custom geospatial SaaS platforms.
- Developed and maintained spatial databases and performed geospatial data modelling, statistical analysis, and interpretations such as crop yield prediction, natural hazards monitoring, forest inventory update, land cover classification and change detection. Presented findings in cartographic products, dashboards, and reports.
- Designed product demonstrations and presented at seminars and training sessions to promote business development and establish connections with prospective clients.

Land Use and Global Environment Lab, UBC

Vancouver, BC

Research Assistant

May 2020 – September 2020

- Collected hundreds of on-screen land cover samples (e.g., forest, plantation, wetland, cropland) in Google Earth Pro to calibrate and validate CNN deep learning classifiers for global agricultural land mapping applications.

Faculty of Forestry, UBC

Vancouver, BC

Teaching Assistant

January 2020 – May 2020

- Teaching Assistant for FRST232 Computer Applications in Forestry including Word, Excel, RStudio, and ArcGIS.

Selected Projects

China National Key R&D Program “Remote Sensing Technologies for Forest Plantations Monitoring”

2021

- Utilized machine learning models (Random Forest and SVM) to classify deciduous and broadleaf tree species based on a combination of spectral, textural, and terrain features extracted from multi-temporal satellite imagery (GF-1, GF-6, Landsat 8, Sentinel 2) and SRTM DEM; obtained an overall accuracy of 85% with a Kappa coefficient of 0.80.
- Used Python to automate geoprocessing workflows, including data entry, data conversion, satellite imagery pre-processing and raster mosaics generation; resulted in a 25% reduction in data processing time.

GEF - Securing Biodiversity Conservation & Sustainable Use in China’s Dongting Lake Protected Area

2021

- Collected and processed spatial datasets such as PA boundaries, habitat distribution of flagship species, elevation and hydrological data, and satellite imagery in combination with socioeconomic data to assess the biodiversity, social, and economic impacts of the habitat restoration project.

Forest Information Management System (FMIS) for Asia Pulp & Paper (APP), Sinar Mas

2020 – 2023

- FMIS is a cloud-based platform (built on ArcGIS Enterprise) that manages the entire forestry value chain of APP.
- Led the pre-sale professional services on precision forestry and the overall design of FMIS.
- Conducted a proof of concept for forest inventory assessment using aerial LiDAR data, Landsat 8 imagery, and SRTM DEM. Utilized Random Forest and k-NN for forest attributes estimation at stand level including total aboveground biomass and stand volume; obtained an overall accuracy of 75% and 70% for plain and mountainous areas respectively.

Publications

1. **Zhang Z.** et al. “Research on Integration of Satellite Communication-Navigation-Remote Sensing in 5G for Forest Resource Management.” *Journal of Nanjing University of Aeronautics & Astronautics*. 2021. 53(S1): 102-106. DOI:10.16356/j.1005-2615.2021.S.017.
2. Li Y., Xu M., Cao C., Dang Y., **Zhang Z.** et al. “Technical Specification for Regional Forest Plantation Classification Using Remote Sensing Techniques.” 2021. Chinese Society of Forestry. T/CSF 012-2021.

Awards & Honors

1. 2016-2017: Outstanding International Student Award, University of British Columbia
2. 2016: UBC-UBG Forestry Scholarship, University of British Columbia

Additional Experience

UBC Farm

Vancouver, BC

GIS Volunteer

September 2019 – May 2020

- Conducted fieldwork at the farm, collected GPS and other remote sensing data, created a classification scheme, classified historical photos, and created historical maps for UBC farm using ENVI and ArcGIS pro.

National Parks Research Center, UBC

Vancouver, BC

Project Assistant

April 2019 – September 2019

- Conducted research on Canadian and international climate policies, natural climate solutions, and national park sustainable development practices.
- Wrote literature reviews focused on national parks management under climate change, with Banff National Park as a case study, and contributed this content to the textbook *National Parks and Green Development*.

Faculty of Forestry, UBC

Vancouver, BC

MEGM Program Assistant

May 2018 – September 2019

- Maintained program resources and offered administrative support to faculty and staff including coordinating travel and meetings, organizing events (e.g., orientation, graduation reception, field school), and ordering office supplies.
- Managed contents and designs on the MGEM website including sourcing and publishing suitable job opportunities for MGEM students through internet research, and updating program events.
- Handled communications on behalf of the program, promoting it to prospective employers via telephone and email. Organized a career networking event between students and GIS professionals from academia, NGO, government, consulting, and industries. Maintained contact records and tracked attendance at the event.
- Reorganized the structure of the work drive for easier navigation of files and documents. Created a student work manual to provide guidance for new recruits in specific tasks.

UBC Botanical Garden

Vancouver, BC

Naturalist in Training

May 2018 – May 2019

- Connected with visitors to enhance their visiting experience and gave public education about BC's forests and Indigenous cultural use of plants.