WANXIN.LI

Los Angeles, CA ● wanxinli@usc.edu ● 2134212062

EDUCATION

University of Southern California — Los Angeles, CA
Master of Science, Spatial Data Science — May 2024

University of Waterloo — Waterloo, Canada
Bachelor of Environment Science, Geomatics — June 2022
Minor in Mathematics

Capital Normal University — Beijing, China
Bachelor of Science, Geographic Information Science — June 2020

EXPERIENCE

Research Assistant — Los Angeles, CA
Dr.Yi Qi Urban Tree Lab – Spatial Sciences Institute of University of Southern California — August 2023 – Present

Research focus: large-scale urban tree tracking and mapping, deep learning and machine learning models

- Developed a scalable workflow for mapping and tracking over 70,000 urban trees species in Los Angles
- Led the research on USC tree mapping using NAIP data and random forest; achieved over 68% accuracy in species identification, enhancing ecological insights for the USC campus environment
- Implemented multi levels tree species classification combine 4-bands imagery and meta canopy height dataset and using deep learning methods. Conducted reclassification based on 100 tree species for analysis

GIS Technical Engineer Intern — Beijing, China
YunZhong Century Technology (Beijing) Co. Ltd. — May 2023 - July 2023

Managed back-end data processing for China's Eco-Meteorological Service system

- Created and deployed automated data collection algorithms that processed and analyzed over 10 yeas meteorological images, resulting reduction in time spent on manual data entry and analysis tasks
- Engineered a suite of specialized GDAL scripts that facilitated the automated clipping and transformation of raster data, improved the function library, expediting project delivery timelines
- Directed analysis on nighttime lighting data of China from 1992 – 2020 and in charge of data preprocessing

Technical Engineering Intern — Beijing, China
GeoScene Information Technology Co. Ltd. (ESRI China) — April 2021 - June 2021

Designed management tools for the China Ministry of Ecology and Environment, ensuring clear communication

- Executed topology validation processes with ArcGIS Pro, identifying and rectifying 100+ inconsistencies in datasets
- Designed a model for the Contaminated Land Decision Support System, integrating advanced analytics to determine critical indicators

PROJECTS

- **Object Detection in Computer Version** - Developed advanced object detection methods for urban tree canopies using the YOLO model and the DeepForest Python package, improving city planning efficiency
- **Urbanization Time Series Analysis** – Arranged a 20-year land use classification study in Wuhan city using Landsat 8, employing both supervised and unsupervised methods to classify and assess urban land changes
- **Chatbot Development with Large Language Models** - Collaborated on deploying a Teaching assistant Q&A chatbot performed OCR on over 500 images and videos, effectively guiding students access resource
- **Web Mapping** - Created interactive bike maps for the City of Victoria using Web AppBuilder, ESRI Leaflet, and ArcGIS JavaScript API. Improved cyclist navigation and safety by integrating bike data
- **Spatial Pattern Analysis** – Teamed to devised spatial pattern analysis on 50 states, finding spatial autocorrelation of flight and COVID-19 infection rates, providing actionable insights for health authorities

ADDITIONAL INFORMATION

Applications: ArcGIS Pro, ArcGIS Online, GeoAI, Leaflet, PCI Geomatica, ENVI, ERDAS IMAGINE, SNAP, QGIS, Google Earth Engine, Python, C, C++, R, SQL, JavaScript, Excel

Skills: Imagery analysis, Imagery Classification, Remote Sensing, Data Visualization, Network Analysis, ModelBuilder, Flood Analysis, Terrain Analysis, Remote Sensing