Xiaoxuan Li

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EDUCATION

George Mason University Fairfax, VA
Ph.D. (GPA: 4.0/4.0) Earth Systems & Geoinformation Sciences Sep 2019 - Dec 2023
- Dissertation: Space-based LiDAR for Estimating Vegetation Structure

University of Texas at Dallas Richardson, TX
M.S. (GPA: 3.9/4.0) Geospatial Information Sciences Sep 2016 - Jun 2018
- Thesis: Combining Water Fraction and DEM-Based Methods to Create a Coastal Flood Map: A Case Study of Hurricane Harvey

Liaoning Technical University Fuxin China
B.S. (GPA: 3.2/4.0) Surveying & Mapping Engineering (Remote Sensing & Photogrammetry) Sep 2012 - Jun 2016
- Thesis: Decade of Forest Change Analysis using Landsat Time Series Data in Tieling City

WORK EXPERIENCE

George Mason University Fairfax, VA
Research Assistant Sep 2019 - Present
- Calibrate and validate large-scale spaceborne LiDAR datasets (e.g. GEDI and ICESat-2) using airborne LiDAR, GEDI simulator and field measurements
- Develop SAR-based biomass models using machine learning and generalized linear models and propagate model uncertainty using Monte Carlo simulation
- Monitor a decade of vegetation changes using airborne LiDAR and ALOS-2 PALSAR-2 in African Savannas
- Evaluate the relationship between GEDI structural metrics and bird and mammal species in Amazon rainforest
- Design and develop web-based GIS applications (Mapbox, CartoDB, etc.)
- Assess the impacts of natural hazards (floods, wildfires, etc.) using predictive modeling and machine learning methods

SKILLS

- **Programming Languages:** Python (advanced), R (advanced), MATLAB, VB, JavaScript, SQL
- **Tools:** ArcGIS products (ArcMap, ArcGIS Pro), LAStools, SeaDAS, ERDAS, ENVI, eCognition, CloudCompare, Global Mapper, Linux, Prism
- **Coursework:** Advanced GIS, Advanced Remote Sensing, Advanced Earth Data Analysis, GIS Programming, Science Data Mining, Quantitative Methods, Web-based GIS, 3D Data Capture and Ground LiDAR, Data Management

PUBLICATIONS

- Qu, Y., Zheng, G., Xu, C., Ma, X., **Li, X.** (2024). Characterizing savanna canopy heights using GEDI and spatially continuous spectral and backscattering information in a landscape level. (Under review, **Remote Sensing of Environment**).
- **Li, X.,** Wessels, K., Armston, J., Duncanson, L., Urbazaev, M., Naidoo, L., Mathieu R., & Main, R. (2024). Evaluation of GEDI Footprint-level Biomass Models in Southern African Savannas using ALS and Field Measurements. (Under review, **Science of Remote Sensing**).
- **Li, X.,** Wessels, K., Armston, J., Hancock, S., Mathieu, R., Main, R., ... & Scholes, R. (2023). First validation of GEDI canopy heights in African savannas. **Remote Sensing of Environment**, 285, 113402.
- Wessels, K., **Li, X.**, Bouvet, A., Mathieu, R., Main, R., Naidoo, L., ... & Asner, G. P. (2023). Quantifying the sensitivity of L-Band SAR to a decade of vegetation structure changes in savannas. **Remote Sensing of Environment**, 284, 113369.
- Wang, Z., **Li, X.**, & Xu, H. (2022). 3D Digital City Structure Model Based on Image Modeling Technology. In **Computer Graphics International Conference** (pp. 381-392). Cham: Springer Nature Switzerland.
- **Li, X.**, Cummings, A. R., Alruzuq, A. R., Matyas, C. J., & Amanambu, A. C. (2019). Combining Water Fraction and DEM-Based Methods to Create a Coastal Flood Map: A Case Study of Hurricane Harvey. **ISPRS International Journal of Geo-Information**, 8(5), 231.
- Sun, H. and **Li, X.** (2016). A Fast Classification Algorithms for High-dimensional Remote Sensing Images. **Science of Surveying and Mapping**, No. 8.

AWARDS

- George Mason University Summer Presidential Scholar Research Fellowship, May 2020 - Aug 2023
- George Mason University Presidential Scholarship, Sep 2019 - Aug 2023