Zhi Li, PhD

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Professional Summary

Innovative data scientist and researcher with over five years of experience applying machine learning (ML), geospatial modeling, and remote sensing to solve complex societal and environmental challenges. Adept at developing scalable, explainable AI solutions and integrating diverse datasets for real-world applications. Proven track record of delivering impactful research, leading interdisciplinary teams, and communicating technical insights effectively to stakeholders.

Key Skills

- **Machine Learning & AI**: Expertise in deep learning, Fourier neural operators, and explainable AI frameworks.

- **Geospatial & Temporal Analysis**: Proficient in Geographic Information Systems (GIS) and satellite-based remote sensing.

- **Programming & Data Science**: Python, MATLAB, Google Earth Engine, cloud-based data processing.

- **Project Management**: Experience managing cross-disciplinary research teams and collaborations.

- **Communication**: Published 30+ peer-reviewed articles and presented at global conferences.

Professional Experience

Postdoctoral Research Fellow
Stanford University, Department of Earth System Science (2023 – Present)

- Developed ML-driven models to assess global flood impacts on rice yields and public health, leveraging geospatial datasets.

- Spearheaded research on explainable AI to interpret model predictions for societal and policy applications.

Data Scientist
Hydroinformatics Institute, Singapore (2019)

- Enhanced hydrologic model accuracy using genetic programming for predictive analytics in water management.

- Conducted geospatial analysis for urban water resource optimization.

Selected Projects

- **Flood Inundation Forecasting**: Designed a Fourier neural operator to accelerate real-time flood modeling with high accuracy, presented at ICCV 2023.

- **Social-Environmental Modeling**: Integrated demographics, climate, and land use data to analyze climate justice impacts on Native American communities.

- **Explainable AI in Remote Sensing**: Improved satellite precipitation retrievals with interpretable ML methods, leading to enhanced climate data reliability.

Education

- **Ph.D. in Hydrology and Water Security** – *University of Oklahoma* (2019 – 2022)

- **M.S. in Hydraulic Engineering & Water Resources Management** – *National University of Singapore* (2017 – 2019)

- **B.Eng. in Hydraulic Engineering** – *Hohai University, China* (2013 – 2017)

Selected Achievements

- Published 30+ journal articles (16 as first author); total citations: 450+.

- Featured in leading media outlets, including *The New York Times*, *AccuWeather*, and *CNN*.

- Invited speaker at international workshops and conferences, such as AGU and AMS.

Technical Tools

- **Programming**: Python, MATLAB, C.

- **ML Frameworks**: TensorFlow, PyTorch, scikit-learn.

- **Geospatial Analysis**: ArcGIS, Google Earth Engine, QGIS.

- **Data Visualization**: Tableau, Plotly, Matplotlib.

Community Engagement

- Contributed to capacity-building programs for African nations through hydrological modeling training.

- Collaborated with Native American tribes to develop climate-resilient infrastructure.