Sitian Xiong

Phone：(413) 404-5897 / Email: st.xiong@yahoo.com LinkedIn: **https://www.linkedin.com/in/sitian-xiong-95469439/**

EDUCATION

Ph.D. in Geography, MS in Geographic Information Science | *Clark University*, Worcester, MA 2017-2025
BS in Geography | *University of Wyoming*, WY 2014- 2017
BE in Land Resources Management | *China University of Geosciences*, Wuhan, China 2009-2013

SKILLS

ArcGIS Pro |TerrSet | GeoDa | Python | R | MATLAB | Tableau | JavaScript | HTML & CSS | SQL | MongoDB | Web Mapping | AWS | Git | Google Earth Engine | C++ | Linux | High Performance Computing (HPC) | AquaCrop | DSSAT | CityEngine | GDAL | Dask | Pytorch | ArcPy | AI | DeepLearning | OpenCV | Google Cloud Platform | STAC | Docker | Geospatial Foundation Models

RELEVANT WORK EXPERIENCE

Research & Project Work | *Clark University and Clark Labs, Worcester, MA* 2018 – 2025

- Led and contributed to multiple NSF- and NASA-funded research projects in agriculture and environmental studies, balancing research design, coding, data processing, technical writing, and grant proposal development.
- Authored and co-authored seven research papers, including three first-author publications on Zambia's diverse farming systems using satellite imagery and household survey data. Collaborated on interdisciplinary studies in computer vision, agriculture, and economics, focusing on data processing, quality control, and agronomic modeling (DSSAT etc.). Developed automated geospatial workflows for satellite imagery processing, machine learning, spatial data integration, and web mapping using Python, R, and JavaScript. Integrated non-spatial crop yield models into a spatial workflow and presented findings at AGU. Developed automated geospatial workflows for satellite imagery processing, machine learning, data integration, and web mapping using Python, R, JavaScript, and Git. Integrated non-spatial crop yield models into a spatial-data pipeline.
- Built deep learning expertise since 2018, implementing LeNet, ENet, and UNet in PyTorch for image segmentation and land use mapping. Applied these models in Moore Foundation, NASA, and NSF-funded projects, detecting smallholder and commercial crop fields in Sub-Saharan Africa. Optimized model efficiency, reducing memory use by 50% with ENet compared to UNet and DeepLab. More recently, explored modern foundation models like Prithvi for instance segmentation and geospatial applications.

Contract GIS Consultant | *TerraCarbon LLC, IL* July-August 2023

- Designed, implemented, and ensured quality of forest map updates for Tanzania and Cambodia to support Verra's carbon emission management (2023), achieving TerraCarbon LLC's 90% accuracy standard. Developed stakeholder-centered service skills through remote sensing and GIS consultancy. Successfully delivered and defended a high-quality map product, justifying workflows and communicating effectively with external auditors.
- Performed pixel-based supervised classifications and detected forest loss using classical methods, such as change vector analysis and Random Forest, on remote sensing imagery. Automated workflows using Google Earth Engine APIs in Python and JavaScript. Designed accuracy assessment protocols and tools, including sampling strategies and an on-screen labeling tool, and led the label creation process using R and Collect Earth Online.

Teaching, Training, and Leadership Related | various experiences in 2023 and 2024

- Designed and led a training session for NASA's Applied Remote Sensing Training Program (ARSET), attracting over 800 participants from academia, NGOs, private industry, and government worldwide. Responsibilities included delivering the live session (online), designing, implementing, and demonstrating a Python workflow for Landsat, Sentinel-2, and MODIS applications, with a focus on monitoring crop general productivity in refugee-centric areas. Feedback from 237 participants indicated that over 80% experienced significant or moderate improvement in their skills and knowledge.
- Taught GEOG190 Intro. to Geographic Information Science at Clark University, Worcester. Continuously updated course materials, software utilization, and grading rubrics to meet evolving academic and industry demands. Taught ESRI and other GIS software, along with essential knowledge encompassing GIS data models, project management, map projections, digitization, spatial analysis, spatial decision-making, and data visualization.
- Served as an ESRI Developer Conference Assistant, contributing to the organization of the ESRI Developer Summit 2024 through session monitoring, check-in assistance, providing directions, and on-call support. Represented the student assistant team and won three rounds in the dodgeball tournament.

Spatial Analyst and GIS Technician | various internship experiences in 2012, 2015, 2017

With School of Energy Resources (2017) and the Wyoming Geographic Information Science Center (Summer 2015):

- Created thematic maps in ArcMap for CO2 transport, ground aquifers, and ecologically sensitive areas in Wyoming. Developed a 3D indoor network model of the University of Wyoming campus using Python. Assisted an art and design team in constructing a university building 3D exterior model using ArcGIS Pro, CityEngine, and Unity.

With Zondy Cyber China Co. Ltd, Wuhan, China (2012):

- Created technical documentation, video tutorials, and provided technical support for government and international clients on GIS products. Managed a county-level geodatabase for land use planning and conducted quality checks, correcting topological and attribute errors using a custom data integrity review tool.