

Fernanda Argueta

GEOSPATIAL · REMOTE SENSING ANALYST

College Park, MD

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Professional Experience

U.S. Department of State

Nov. 2023 - Jul. 2024

GIS SPECIALIST

- Active Security Clearance: Secret
- Lead optimization of the Climate Security and Resilience Dashboard used to assess OCONUS real property risk.
- Collaborated with internal teams and Sub-Contractors validating geospatial deliverables, processing climate and natural hazard data.

NASA Harvest

Mar. 2022 - Nov. 2023

GEOSPATIAL DATA ANALYST

- Piloted development of web application using React JS framework. Web application visualizes cumulative distribution of MODIS (aqua + terra) Active Fire within Ukraine - Russia conflict area.
- Programmatically analyzed over 185,000 Ukraine field boundaries from two distinct datasets for research publication currently in preparation. Comparison metrics included quantifying area of each polygon and plotting their distribution. Sub-regions for each dataset were compared by calculating values e.g., elongation ratio, path orientation, shape complexity.
- Spearheaded establishment of new partnership with company Sanctions.io, which granted access to a high-value dataset of economic/political sanctions. Developed code to push sanctions in near-real time, used in Harvest2Market dashboard an openly available online tool for analysis of crop conditions, market, and supply chain logistics.
- Collaborated in developing NuMan app replacement prototype using React JS framework to be used by UMD Extension's Agricultural Nutrient Management Program.

University of Maryland - Wildfire Research

Feb. 2020 - Nov. 2023

GEOSPATIAL DATA ANALYST

- Developed Dr. Louis Giglio's Fire Group website using React JS and deployed application using Firebase. Website highlights geostationary products and validations produced and maintained by team members. Link to website: <https://umd-wildfire.org/>
- Contributed to scientific publications (listed below) by research, data collection, quantitative data analysis, satellite imagery analysis, and create data visualizations via ESRI's ArcGIS software.

Research Publications

GloCAB: Global cropland burned area from mid-2002 to 2020

Jun. 2023

CO-AUTHORED

Earth System Science Data

- The GloCAB dataset provides global, monthly cropland burned area at 0.25° spatial resolution from July 2002 – December 2020. The new dataset (GloCAB; Global Cropland Area Burned) represents the first attempt at a global cropland-focused burned area product.
- <https://doi.org/10.5194/essd-2023-191>

Impacts of large-scale refugee resettlement on LCLUC: Bidi bidi refugee settlement, Uganda case study

May 2022

CO-AUTHORED

Environmental Research Letters

- Our study shows that these changes in LC and BA are mainly missing in the readily accessible satellite-derived data products, which impede assessment, planning, and implementation of humanitarian response programs. We discuss the importance of mapping at the appropriate spatial and temporal scales and the importance of context, sector, and geographic domain knowledge expertise in developing critical information products for informing programs to support vulnerable populations.
- <https://iopscience.iop.org/article/10.1088/1748-9326/ac6e48>

Validation of MCD64A1 and FireCCI5.1 cropland burned area mapping in Ukraine

Oct. 2021

CO-AUTHORED

International Journal of Applied Earth

Observations and Geoinformation

- We rigorously validate two widely available, coarse-resolution global burned area products — MCD64A1 and FireCCI51 — in cropland through using exhaustively-mapped field-level burned area reference maps produced for seven reference areas in Ukraine in 2016 and 2017.
- <https://doi.org/10.1016/j.jag.2021.102443>

Education

University of Maryland

M.S. IN GEOSPATIAL INFORMATION SCIENCES

May 2024

College Park, MD

University of Maryland

B.S. IN GEOGRAPHICAL SCIENCES

May 2020

College Park, MD

- Specialization: Geographic Information Systems and Computer Cartography.