PAULO MEDINA
Geospatial Data Scientist

Education
- Master of Science, Geographic Information Sciences, University of Maryland, College Park, MD, Currently Enrolled Graduating this Spring
- BA, Forest Engineering, Universidad Nacional de Asunción, Facultad de Ciencias Agrarias, May 2021

RELEVANT EXPERIENCE

Geospatial data scientist with 5+ years of experience across forestry, agriculture, and global health sectors. Mr. Medina specializes in geographic information systems (GIS) analysis, remote sensing applications, and geospatial data management for environmental and public health initiatives. His expertise encompasses geospatial data processing and standardization for multi-country programs, enterprise GIS infrastructure management, spatial analysis and visualization, forest inventory and monitoring systems, and precision agriculture applications. With a strong background in both forestry engineering and geospatial information sciences, he excels in leveraging Python automation, machine learning techniques, and advanced remote sensing to solve complex spatial problems. Mr. Medina supports various international organizations and agencies, providing critical geospatial analysis for Demographic and Health Surveys, urban forestry programs, and environmental conservation initiatives. He is fluent in Spanish, English, and Portuguese, and proficient in French and Guarani, enabling him to lead multilateral projects across diverse geographic and cultural contexts.

PROJECT EXPERIENCE

Professional Experience

ICF On-call Geospatial Data Scientist, ICF, Rockville, MD, Jan 2024 Present (Full-time: Jan 2024 – Mar 2025; On-call: Jul 2025 – Present)
On-call Geospatial Data Scientist. Mr. Medina manages the acquisition and standardization of national administrative boundaries (Admin0, Admin1, Admin2) for multi-country Demographic and Health Surveys, ensuring proper topology and alignment with SSIB standardized boundaries. He maintains and manages enterprise GIS infrastructure for the Spatial Data Repository website, ensuring data quality and accessibility for global health research. Mr. Medina processes and validates GPS datasets for surveys across multiple countries, ensuring compliance with spatial data protocols. He produces high-quality thematic maps and spatial visualizations for final survey reports, presentations, and technical briefings. His responsibilities include conducting rigorous quality control checks on geospatial data prior to publication and release. Mr. Medina develops training materials and co-facilitates the Health Data Mapping workshop to strengthen geospatial capacity-building for international staff. He leads multilateral meetings with international colleagues in English, French, and Portuguese, and performs literature reviews and spatial analysis for public health and environmental research initiatives. Additionally, he develops data collection applications using CSPro and JavaScript for field survey

operations and creates automation scripts with Python and Microsoft PowerShell to optimize workflows.

City of College Park Urban Forester (Intern) College Park, MD, May 2025 Aug 2025
Urban Forester (Intern). Mr. Medina designed Survey123 forms for citywide urban forestry inventory and field data collection. He developed Python automation scripts for geocoding workflows using Geopy and Nominatim geocoder and created data processing procedures documented in Jupyter Notebooks for ArcGIS Dashboards. Mr. Medina ensured data quality for city-wide analytical tools including the Crash Data Hub built with ArcGIS Experience Builder. He supported the Residential Tree Planting Program through data collection, visualization, and monitoring using the Esri platform.

Fieldata GIS Data Analyst, Asuncion, PY, Jul 2022 Jan 2023
GIS Data Analyst. Mr. Medina designed and maintained PostgreSQL/PostGIS geodatabases for forestry and agricultural project data management. He created agricultural parcel shapefiles for crop monitoring and land management applications, and processed GPS tractor line data for precision agriculture operations including herbicide application, fertilization, and soil preparation for Trimble-assisted driving systems. Mr. Medina developed interactive dashboards in Google Data Studio (Looker), Tableau, and Power BI for agricultural data visualization. He built web-based mapping platforms using HTML, CSS, JavaScript, and Leaflet.js for client data access, and provided remote sensing services using Google Earth Engine to assess crop health through NDVI analysis and land classification. Additionally, he created data collection applications using AppSheet and VBA for field operations.

Forestry Operations Manager Tecnoforestal SA, Tecnoforestal SA, Concepcion, PY, Mar 2021 – Dec 2022
Forestry Operations Manager. Mr. Medina managed large-scale timber production operations covering thousands of hectares, overseeing forest management practices and production optimization. He implemented GIS-based forest inventory and monitoring systems using GPS technology and spatial analysis to track planting operations and growth rates. Mr. Medina coordinated field operations and logistics for tree planting, including tractor track design (for Trimble systems), equipment deployment, crew management, and supply chain coordination across remote forest locations. He conducted environmental impact assessments and compliance monitoring ensuring adherence to forestry regulations and international sustainability standards. Additionally, Mr. Medina developed operational databases and reporting systems for tracking production metrics, inventory levels, and environmental compliance data. and compliance monitoring ensuring adherence to the clients forestry regulations and international sustainability standards
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Teaching Assistant Universidad Nacional de Asunción, Universidad Nacional de Asunción, Jan 2023 Apr 2023
Teaching Assistant. Mr. Medina served as teaching assistant for the Forest Restoration coursework at Universidad Nacional de Asuncion. He supported coursework design, exam development, and hands-on field activities for forest restoration practices, and evaluated student performance.

SELECT PUBLICATIONS AND PRESENTATIONS

Publications

Medina Avalos, P., Gonzalez, L., Benitez Leon, E., Villalba, G. (2021). Comparison of the initial development of four species in forest restoration plots with three different soil preparation systems in the department of Caazapa, Paraguay. investigación Agraria, 23(2), 86-93.

Amarilla, S., Villalba, J., Soto, C., Yanosky, A., Pe9rez de Molas, L., Pinazzo, J., Espinola Torres, M., Peralta-Kulik, N., Gonzalez, R., Bordon, P., Amarilla, S., Caceres, P., Paniagua, P., Medina, P. (2021). Strategic Plan of the National System of Protected Wild Areas of Paraguay (SINASIP) 2020-2030.

EMPLOYMENT HISTORY

ICF. On-call Geospatial Data Scientist. 2024–Present
City of College Park. Urban Forester (Intern). 2025–2025
Universidad Nacional de Asunción. Teaching Assistant. 2023–2023
Fieldata. GIS Data Analyst. 2022–2023
Tecnoforestal SA. Forestry Operations Manager. 2021–2022