Lorena Peñuela Cantor, MS
Data Engineer
The Water Institute
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EDUCATION

Universidad de los Andes	Bogotá, Colombia	Information Engineering	MS, 2023
Universidad Distrital Francisco José de Caldas	Bogotá, Colombia	Geographic Information Systems	Specialist, 2016
Universidad Distrital Francisco José de Caldas	Bogotá, Colombia	Cadastral and Geodesy Engineering	BS, 2015

RESEARCH INTERESTS

Spatial data analysis, spatial data engineering, big data, machine learning of spatial data, Geographic Information Systems.

PROFESSIONAL EXPERIENCE

The Water Institute	Data Engineer & Geospatial Analyst	2021–Present
Isatech Corporation S.A.	GIS Specialist	2018–2021
Amazon Scientific Research Institute (SINCHI)	GIS Administrator	2017–2018
Esri Colombia	Engineer of Technical Marketing	2014–2017
	Engineer of Web Apps Development	2014

AWARDS AND HONORS

- Best Saber Pro Certificate, 2014
- Hackathon Agriculture Winning Team with "Corabastos a un clic," 2014
- First Class Honors at Universidad Distrital, 2013
- First Class Honors at Universidad Distrital, 2012

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TEACHING EXPERIENCE

Lecturer, Spatial Big Data Module for Big Data Analytics course, Universidad de los Andes, Bogotá, Colombia (2023–2024).

COMMUNITY SERVICE

Maloka, Bogotá, Colombia   STEAM Mentoring   2021–2023

NOTABLE PROJECTS

Backend developer / EnDMC   Current
The Water Institute
This web-based tool provides a data and model catalog to promote the discoverability, reproducibility, and reuse of existing models.

Data Engineer / FloodID   Current
The Water Institute
A web-based application that allows visualizing storm surge, flood, wind, wave information from coastal ocean and inland flooding models, roadway inundation points, response, and critical infrastructure using diverse numerical models as sources.

Data Engineer / SmartPort & Resilience Center   Current
The Water Institute
 Developing a platform that harvests crowd-sourced vessel data and repeat high-resolution multibeam bathymetry data to produce machine learning forecasts of shoaling at the Port of New Orleans and other locations along the Mississippi River. This application will enable decision makers to anticipate dredging needs and proactively plan operations, among other use cases

GIS Specialist / Regionwide Avian Monitoring   Current
Regionwide Trustee Implementation Group
Create a web portal that allows the visualization of aerial photographic surveys that have been used to monitor shrub- and select ground-nesting waterbird species across the Gulf Of Mexico. This project entails data management of >25,000 photos and associated databases.

Data Engineer / Louisiana Watershed Initiative   Current
Louisiana Coastal Protection and Restoration Authority
Working on flood consequences analysis for the statewide program. Established an automated workflow that resulted in a web application that integrated the flood consequence analysis for each region.

PUBLISHED WORKS

Peer-Reviewed Publications

Bogota Sanabria, G. H., Caro Castro, N. E. & Peñuela Cantor, L. A. (2016). *Cálculo de Fletes de Transporte de Carga Terrestre Basado en Análisis Espacial*.