LORENA PEÑUELA CANTOR

Geospatial Analyst

Lorena Peñuela Cantor, Geospatial Analyst, is a Cadastral Engineer and Geodest with more than seven years of experience in Geographic Information Systems (GIS) where she has built knowledge in data management, software development, requirements gathering, business architecture design, and project management. Her work centers around using GIS-related spatial data, the integration of big data, and the visualization of complex modeling outputs.

Peñuela Cantor graduated with a bachelor's degree in Cadastral and Geodesy Engineering from the Universidad Distrital Francisco José de Caldas and is pursuing a master's degree in Information Engineering from the Universidad de los Andes, Colombia.

Prior to joining The Water Institute, Cantor worked as a GIS Specialist in private and public companies focused on agriculture, transportation, environmental management, and software development on Bogotá, Colombia.

Peñuela Cantor has participated in programs that encourage Colombian adolescent women to engage in STEAM (Science, Technology, Engineering, Art, and Mathematics) programs, working to expand their vision of their future career possibilities, and she anticipates continuing to participate in such programs.

PROFESSIONAL EXPERIENCE

2021-Present: Geospatial Analyst, The Water Institute

2018-2021: GIS Specialist, Isatech Corporation S.A.

2017-2018: GIS Administrator, Amazon Scientific Research Institute

2014-2017: Engineer of web apps development and Engineer of technical marketing, Esri Colombia

COMPANY ROLE

Geospatial Analyst

PROJECT ROLE / FOCUS AREAS

GIS

Data Engineering

Big Data

Project Management

EDUCATION

M.Sc., Information Engineering, Universidad de los Andes,Colombia, Current.

Specialist in systems of geographic information, Universidad Distrital Francisco José de Caldas, 2016

B.Sc., Cadastral and Geodesy Engineering, Universidad Distrital Francisco José de Caldas, 2015

SELECTED PROJECTS

SmartPort & Resilience Center. *The Water Institute. (Ongoing). Data Engineer.* Development of a platform collecting near-continuous vessel geospatial data (IOT) and high-resolution repeat multibeam bathymetry to develop spatiotemporal machine learning for shoaling forecasts at the Port of New Orleans and other ports along the Mississippi River. The application will enable decision makers to anticipate and plan dredging operations (e.g., predictive maintenance).

GLO Combined River Basins Flood Studies Phase 3. *Texas General Land Office***.** *(Ongoing). Project Coordinator.* Coastal and compound flood risk lead in the initial phases of the program, working with USACE to develop standard operating procedures for HEC-HMS and HEC-RAS model development and flood recurrence analysis procedures. Technical advisor supporting coastal and compound flood model development and flood mitigation project evaluation.

The Colombian Coffee Information System. *(2018-2021) National Federation of Coffee Growers and Isatech Corporation. Data engineer and Project manager for* four years, Isatech Corporation synthetized the past of the system through the building of an enterprise architecture that allowed the development of a plan that included the needs of the organization and the coffee growers. Then, the company was in charge of producing the new version of the system together with the federation which includes new technology. It was launched gradually from January 2021, improving the process of collection of information, reducing transfer times, and enabling analytics, which is the basis for company planning.

Integral Oil Platform. (2019). *Isatech Corporation. GIS Specialist.* The platform aims to integrate all the processes associated with oil exploration licenses. Allowing to monitor the activities of the entire work team and allowing the assignment of tasks.

Amazon Land Covers. *(2017-2018) Amazon Scientific Research Institute*. GIS Administrator. The Colombian Amazon is affected by factors like livestock, planting illicit crops, fires, occupations, and others. For this reason, the institute generates every two years an analysis of the land cover to know how it has changed over time and notify the control organisms of specific mitigation plans. This activity requires the participation of more than twenty professionals who work in a centralized system that facilitates the flow of identification, quality control, approval, and publication.

SELECTED PUBLICATIONS AND PRESENTATIONS

1. Bogotá, H., Caro N., **Peñuela. C**, 2016. Cálculo de Fletes de Transporte de Carga Terrestre Basado en Análisis Espacial. Universidad Distrital Francisco José de Caldas.