



PORTFOLIO

portfolio.plattdata.vercel.app

Contact

natalia.barrientos.m@gmail.com

+34 680 748 992

www.linkedin.com/in/n-barrientos
<https://github.com/plattddev>

Profile

FREELANCE since January 2026

Senior Data Analyst & Researcher (PhD) with a decade-long track record of transforming environmental datasets into high-impact visual insights.

I offer clients a unique hybrid expertise: combining deep academic rigor with modern, full-stack software development to build custom data/geospatial solutions and tell compelling, data-driven stories.

I have led large-scale initiatives, notably the Balearic Sea Report, where I pioneered the consolidation of fragmented data into actionable insights for evidence-based policy making. I excel at managing international research programs and translating technical complexity into strategic assets for global stakeholders.

NATALIA BARRIENTOS MACHO

Data Visualization Developer (PhD)

Education

DEVELOPER BACKGROUND

2026 (Feb)– 2025 (Jul) Web design & development - Prof. Competence
Arándiga Formación

Mastered the full product lifecycle, translating UI/UX prototypes (Figma) into responsive interfaces using HTML5, CSS3, and JavaScript. Developed core application logic and managed final production deployment. Used Git/GitHub for version control and asynchronous remote collaboration.

2025 (Feb–Jun) Postgraduate in Webmap Applications
Fundació Universitat de Girona

Designed relational and physical database models using PostgreSQL/PostGIS for spatial data querying. Developed interactive map interfaces using OpenLayers API, integrating georeferenced data and custom layers. Used server-side logic and custom APIs with Python and Flask to manage client-server communications.

SCIENTIFIC BACKGROUND

2018 PhD Marine Geology Stockholm University & Cardiff University

2014 MSc Marine Geology Stockholm University

2012 BSc Geology Universidad Complutense & Stockholm University

Work experience

2024 –2019

COORDINATOR & RESEARCHER – Balearic Sea Report

www.informemarbalear.org – Marilles Foundation (Palma)

Co-led the research and content development for the Balearic Sea Report, managing the end-to-end lifecycle of 100+ environmental indicators—from sourcing and analysing complex datasets to expert-stakeholder mediation. *Main key achievements:*

- **Strategic Data Consolidation:** Developed a pioneering mapping resource that unified fragmented data to reveal the actual state of marine protection, transforming raw information into a primary tool for evidence-based decision-making.
- **Policy Influence & Communication:** Successfully bridged the gap between scientific research and legislative action by presenting findings to the Regional Parliament, directly influencing environmental policy frameworks and facilitating multi-stakeholder dialogue.

2018 –2014

PhD RESEARCHER – Marine Geology & Past Climates

Stockholm University (Sweden)

Subject Matter Expert: Arctic Environmental & Climate Change Leveraged advanced geochemical methodologies to reconstruct historical Arctic seawater temperature records, providing critical data for the enhancement of global climate models. Key Professional Competencies:

- Transformed raw environmental data into high-impact visual narratives to interpret climate trends and ecosystem shifts.
- Collaborated with international multidisciplinary teams and disseminated findings through peer-reviewed journals and global conferences.
- Consistently met rigorous milestones and deadlines within large-scale research frameworks while contributing to institutional capacity building through the delivery of undergraduate courses.

Ongoing projects

Full-Stack Website

Design and development of a bicycle workshop website with responsive web design. It contains a custom module for cycling routes based on geospatial data to provide users with elevation profiles and route distances.

Fire Tracker Dashboard

Currently developing an interactive geospatial Streamlit dashboard to monitor active fires, visualizing total burnt area alongside fire proximity to populations and protected areas.

Languages

- Spanish
native speaker
- Catalan
native speaker (B2 certificate)
- English
full professional proficiency
- Swedish
good professional proficiency
- French
basic professional proficiency

Interests



2017 (Aug)

GUEST LECTURER - European Astrobiology Campus

TimeTrek Association & Turku University (Finland)

Lectured on climate and ocean change throughout Earth's history at the summer school "The deep history of the Universe, the Earth and the Biosphere."

2016 (May)

LECTURER - Ocean acidification

Bolin Centre for Climate Research (Sweden)

Taught children (12 yr) about the environmental impact of ocean acidification through laboratory experiments.

2015 & 2014 (Jul)

GUEST RESEARCHER

Cardiff University (UK)

Prepared marine sediment samples for geochemical analysis in a clean room laboratory. Conducted mass spectrometry analysis.

2014 (Aug-Sep)

SCIENTIFIC CREW MEMBER - Arctic Ocean Expedition

The Swedish Polar Research Secretariat (Sweden)

Cruise member of the Expedition SWERUS-C3 (Swedish-Russian-America Arctic Ocean Climate-Cryosphere-Carbon Interactions) with icebreaker Oden. Key tasks: sampling and chemical studies of seawater and sediments. Collaboration with 45 researchers to write a comprehensive cruise report.

Awards

2016 2nd Poster Prize at the Bolin Days conference.

Bolin Centre for Climate Research, Stockholm (Sweden).

2014 Dyrssen prize for best Master's thesis.

The Swedish Society for Marine Sciences, Umeå (Sweden).

Technical skills

Frontend Development HTML5 · CSS3 · JavaScript (ES6+) · OpenLayers

Backend & Databases Node.js · PostgreSQL · Supabase · Python (Flask)

Deployment & Cloud Docker · Vercel · Hetzner · GitHub Pages/Actions

Geospatial Analysis Google Earth Engine · Remote Sensing · QGIS · Sentinel & Landsat Data Processing · Machine Learning

Data Analysis Pandas · Geopandas · Matplotlib · Rasterio

Design & Visualization Figma · Adobe Illustrator · Tableau · Power BI

Version control Git / GitHub collaboration

Other skills Artificial Intelligence · SEO · Notion