

Carolina Byl

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Summary

GIS Analyst and Environmental Engineer with 4+ years of experience delivering spatial analysis, cartographic products, and cloud-based geospatial solutions for environmental and infrastructure projects. Proven background in enterprise geodatabases, remote sensing analysis using Google Earth Engine, and field data collection workflows. Programming experience in Python, SQL, and JavaScript, applied to support multidisciplinary teams in national and international contexts, including technical instruction and mentoring.

Experience

GIS Analyst | ERM Argentina

2023 - 2025

- Managed cloud-based geospatial infrastructure by migrating enterprise geodatabases and establishing a Microsoft Azure server to support a client-facing web mapping application for a large-scale mining project.
- Drove technical efficiency and standardization by automating legacy workflows and migrating map layouts from ArcGIS Desktop to ArcGIS Pro, delivering over 100 professional cartographic products for Environmental Impact Assessments (EIAs).
- Accelerated field data collection by designing and customizing ArcGIS Field Maps and Survey123 applications for online and offline use, in collaboration with specialized teams in Hydrogeology, Biology, and Social Sciences.
- Performed advanced spatial and remote sensing analysis using Google Earth Engine (GEE) for baseline and prospective project studies.

GIS Analyst | National Geographic Institute of Argentina (IGN)

2022 - 2023

- Maintained national geospatial data integrity by updating and validating multilevel road networks within the Argentine Geographic Database (AGD), including topology correction and data cleaning across nationwide vector datasets.
- Modernized legacy data by digitizing historical topographic maps into vector information, ensuring the preservation and accessibility of critical national geographic assets.
- Leveraged high-resolution satellite imagery and community data sources to identify, digitize, and integrate new geographic features into the AGD.

Teaching assistant | Universidad Nacional de San Martín (UNSAM)

2014 - Present day

- Instruct cohorts of 50 to 100 students in Physics, General Chemistry and Inorganic Chemistry.
- Migrated the curricula to virtual platforms (Moodle, Google Workspace); designed multimedia study guides, video tutorials, and automated exams to maintain instructional continuity.

Online tutor | tutor.com (Freelance)

2020 – 2022

- Delivered on-demand academic support in Mathematics and Chemistry for learners ranging from K–12 to university level.

Skills

- **Programming Languages:** Python, JavaScript, SQL, R
- **GIS & Spatial Data:** GeoServer, QGIS, ArcGIS Pro, ArcGIS Desktop, Google Earth Engine, PyQGIS, Spatial statistics, Geodatabase management, PostGIS, ArcGIS REST APIs, Shapely, Rasterio, Geopandas, OGC Servers
- **Cloud Platforms:** ArcGIS SaaS Infrastructure (Field Maps, Survey123, QuickCapture, ArcGIS Experience Builder)
- **DevOps & Tooling:** Docker, Git, GitHub Actions, RStudio
- **Project & Collaboration Tools:** Slack, Google/Microsoft Office Suite, Trello, Jira
- **Languages:** English (Bilingual C2), Spanish (Native), French (Proficient B2)

Scholarships

PEFI-UNSAM | Lab3Bio, Escuela de Ciencia y Tecnología (ECyT - UNSAM)

Mar 2019 – Dec 2019

- Investigated the production of bacterial bioplastics using industrial waste. Performed routine laboratory operations for microbiology and analyzed results for an iterative study design.

Education

BS & MS in Environmental Engineering | Universidad Nacional de San Martín (UNSAM)

2013 - 2021

Diploma in Applied Geomatics | Instituto de Altos Estudios Espaciales Mario Gulich (CONAE - UNC)

2021 - 2022

Volunteering

Nocturnal Street Outreach | Fundación SÍ

2022 - 2023 | Buenos Aires, Argentina

- Built trust with vulnerable individuals experiencing homelessness in the city by visiting regularly and connecting them with specialized resources (legal, health, administrative, residencies, etc.).
- Prepared and executed street routes for distributing hot beverages, donations and supporting them in teams of three volunteers.

Session Leader | FOSS4G

2021 | Buenos Aires, Argentina

- Coordinated speakers by managing technical checks and timing.
- Ran the live stream on StreamYard, strictly managed the schedule, and facilitated audience Q&A via Venuueless.

Simulation of Climate Change Negotiations | 3iA – UNSAM

2018

- Planning activities for the role-playing event and prepared the Climate Interactive material for the day