Lorena Abad

Researching the Environment through Geospatial Technologies

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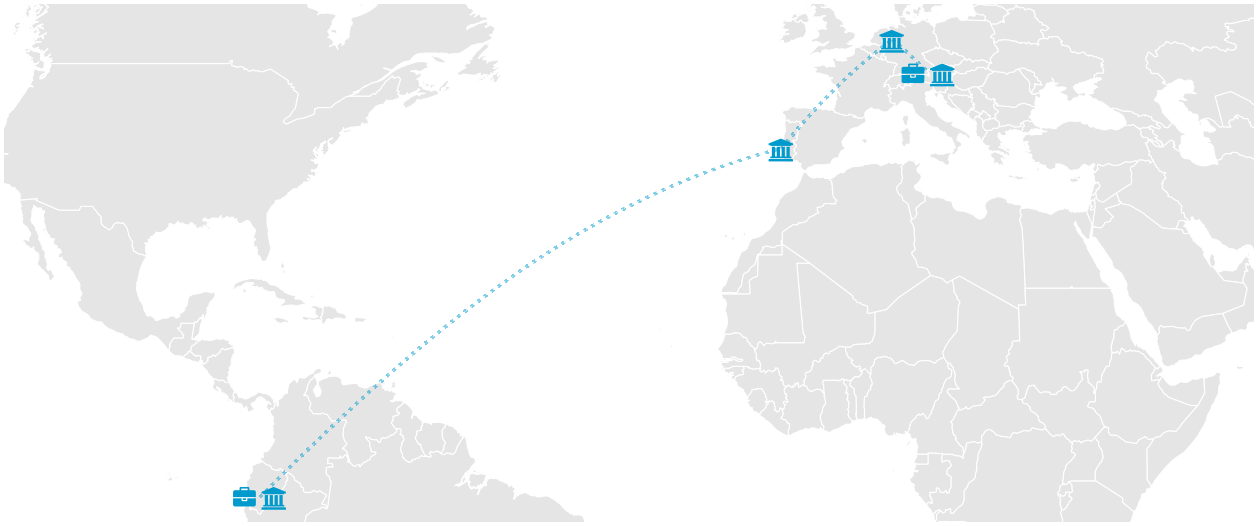
My journey



Professional Experience

PhD Candidate - Researcher - Department of Geoinformatics - Z_GIS

Salzburg, AT

University of Salzburg

10, 2022 - 09, 2026

- My research is focused on Earth observation data analysis techniques for geomorphology and landscape dynamics applications, mainly involved with the Risk, Hazard & Climate research group.

Researcher - Department of Geoinformatics - Z_GIS

Salzburg, AT

University of Salzburg

04, 2019 - 09, 2022

- Remote sensing and GIS specialist studying natural geohazards in the Risk, Hazard & Climate and EO Analytics research groups for different projects:
- SliDEM: Assessing the suitability of DEMs derived from Sentinel-1 for landslide volume estimation | Role: Python package developer.
- MontEO: The impact of mass movements on alpine trails and huts assessed by EO data | Role: Susceptibility mapping.
- STEC: Smarter Targeting of Erosion Control | Role: Mapping geomorphological features with deep learning and knowledge-based techniques.
- RiCoLa: Detection and Analysis of Landslide-induced River Course Changes and Lake Formation.
- MORPH: Mapping, Monitoring and Modelling the Spatio-Temporal Dynamics of Land Surface Morphology.
- citizenMorph: Observation and Reporting of Landscape Dynamics by Citizens.

Research Assistant - Grupo de Investigación de Ciudades Sustentables Llactalab

Cuenca, EC

Universidad de Cuenca

05, 2017 - 08, 2017

- Spatio-temporal data analyst for the project Pies y Pedales: Study of Cyclists and Pedestrian Mobility Patterns in Cuenca for a Sustainable Mobility.

Research Assistant - Carrera de Ingeniería Ambiental - Facultad de Ciencias Químicas

Cuenca, EC

Universidad de Cuenca

03, 2016 - 08, 2017

- CEDIA project: Geo-statistical Inference of Meteorological Data for Azuay and Chimborazo provinces.
- Project: Water Quality and Environmental Variables Monitoring in Artificial Habitats for Endangered Species in Cuenca.
- Project: Determination of Particulate Matter PM10, PM2.5, and noise in Cuenca canton.

Education

University of Salzburg

Salzburg, AT

PhD in Geoinformatics

2022 - 2026

- Earth observation data analysis techniques for geomorphology and landscape dynamics applications.

Universidade Nova de Lisboa & Westfälische Wilhelms-Universität Münster

Lisbon, PT & Münster, DE

Erasmus Mundus Msc. Geospatial Technologies — *2017 - 2019*

- Geospatial Data Mining, Geostatistics, Remote Sensing, Geographic Information Science, Spatial Data Science with R and Python, Unmanned Aerial Systems.
- Masters Thesis: Validating a bike network analysis score based on open data as a connectivity measure of urban cycling infrastructure adapted for European cities. Supervised by Prof. Dr. Edzer Pebesma. URL: *http://hdl.handle.net/10362/67511*

Universidad de Cuenca

Cuenca, EC

Environmental Engineer BSc. — *2011 - 2016*

- Environmental Studies, Natural Resources Management, Cartography, Remote Sensing, Ecology, Hydrology, Meteorology and Climatology, among 66 subjects.
- Bachelor Thesis (in spanish): Particulate Matter less than 10 microns concentration estimation through Remote Sensing in the Urban Area of Cuenca city. Supervised by MSc. Danilo Mejía Coronel. URL: *http://dspace.ucuenca.edu.ec/handle/123456789/25484*

Selected Publications

For a complete list of publications see *my Google Scholar profile*.

- **Abad, L.**, Hölbling, D. W., Dabiri, Z., Robson, B. A. (2022). *An open-source-based workflow for DEM generation from Sentinel-1 for landslide volume estimation*. ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, 48, 4/W1-2022, p. 5-11.
- **Abad, L.**, Hölbling, D., Albrecht, F., Dias, H. C., Dabiri, Z., Reischenböck, G., Tešić, D. (2022). *Mass movement susceptibility assessment of alpine infrastructure in the Salzkammergut area, Austria*. International Journal of Disaster Risk Reduction, 103009.
- **Abad, L.**, Hölbling, D., Spiekermann, R., Prasicek, G., Dabiri, Z., Argentin, A.-L. (2022). *Detecting landslide-dammed lakes on Sentinel-2 imagery and monitoring their spatio-temporal evolution following the Kaikōura earthquake in New Zealand*. Science of The Total Environment, 820, 153335.
- Hennig, S., **Abad, L.**, Hölbling, D., Tiede, D. (2022). Citizen science and geomorphology: the citizenMorph pilot system for observing and reporting data on landforms. Environmental Research Letters, 17(8), 085004.
- Dabiri, Z., Hölbling, D., **Abad, L.**, Guðmundsson, S. (2021). *Comparing the Applicability of Sentinel-1 and Sentinel-2 for Mapping the Evolution of Ice-marginal Lakes in Southeast Iceland*. GI_Forum, 1(1), 46–52.
- Dabiri, Z., Hölbling, D., **Abad, L.**, Helgason, J. K., Sæmundsson, Þ., Tiede, D. (2020). *Assessment of Landslide-Induced Geomorphological Changes in Hítardalur Valley, Iceland, Using Sentinel-1 and Sentinel-2 Data*. Applied Sciences, 10(17), 5848.
- Hölbling, D., **Abad, L.**, Dabiri, Z., Prasicek, G., Tsai, T.-T., Argentin, A.-L. (2020). *Mapping and Analyzing the Evolution of the Butangbunasi Landslide Using Landsat Time Series with Respect to Heavy Rainfall Events during Typhoons*. Applied Sciences. 10, 630.
- **Abad, L.**, van der Meer, L. (2018). *Quantifying Bicycle Network Connectivity in Lisbon Using Open Data*. Information, 9(11), 14.

Memberships

since 2020	R-Ladies Global
since 2020	Women in Geospatial
since 2020	European Geosciences Union
since 2020	Erasmus Mundus Association

Skills

Technical skills

Coding Languages	Software	Other
R – Python – SQL – JavaScript	QGIS – Earth Engine – RStudio – SAGA – PostgreSQL – ArcGIS – eCognition – GIMP – Mendeley	Git – Markdown – LaTex – OpenStreetMap

Languages

Skill	Spanish	English	French	German	Portuguese	Dutch
Reading	Native	C2	B2	B1	B1	A2
Writing	Native	C1	B2	B1	B1	A1
Listening	Native	C2	B2	B1	B1	A2
Speaking	Native	C2	B2	B1	B1	A2

Common European Framework of Reference for Languages: A1/A2: Basic User. B1/B2: Independent User. C1/C2: Proficient User