

JORGE E. PATIÑO

Geoscientist and postdoctoral researcher, lecturer and consultant.
Expert in GIS, remote sensing, and geospatial data analysis.
I work with geospatial and satellite imagery to help solve environmental and urban issues.



EDUCATION

- 2016 • **Universitat Politècnica de València**
Ph.D. in Geodesy, Cartography and Geographic Information Systems
📍 Valencia, Spain
- Thesis: Cityscape, poverty and crime: A quantitative assessment using VHR imagery.
- 2004 • **Universitat Politècnica de València**
D.E.A. in Geodesy, Cartography and Geographic Information Systems
📍 Valencia, España
- Degree monograph: Digital extraction of structural lineaments from Landsat imagery and digital elevation models in Menorca Island, Central Zone, Spain.
- 2002 • **Universidad EAFIT**
M.Sc. in Earth Sciences
📍 Medellín, Colombia
- Thesis: Hidrometeorologic and geomorphologic study of 10 creeks in the Aburrá Valley.
- 1998 • **Universidad Nacional de Colombia**
Geological Engineer
📍 Medellín, Colombia
- Thesis: Geomorphologic influence in the integral environmental management of the Ceibal-Pascuala wetland complex, Magangué, Bolívar.

CONTACT INFO

✉ jpatinoq@eafit.edu.co

G <https://goo.gl/dzuwSD>

in <https://rb.gy/nnv1og>

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🐦 @cocovski

SKILLS

Experienced in spatial data analysis, remote sensing, and GIS.








Skilled in R, QGIS, ArcGIS, ENVI, OpenGeoda, Python, OTB, and SNAP.

Fast learner, very organized, and good team leader and coworker.

This cv was made with the R package [pagedown](#).

Last updated on 2022-07-29.

RESEARCH EXPERIENCE

- present
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2018
- **Senior Researcher**
RiSE Group, EAFIT University  Medellín, Colombia
 - PEAK Urban project: Building capacity for the future city in developing countries. Subproject: Urban form and its impact on sustainable development.
- present
|
2021
- **Senior Researcher**
RiSE Group, EAFIT University  Medellín, Colombia
 - *World Bank - Universidad EAFIT, Support to the LAC Flagship on Spatial Development. Intraurban inequality in Mexican cities.* Census data analysis and static maps, plots, and interactive maps production to support the analysis of intraurban socioeconomic inequalities in the Mexican metropolitan areas using census data from 2010 and 2020. This research covers two dimensions: socioeconomic inequalities and accessibility inequalities.
- 2020
- **Senior Researcher**
RiSE Group, EAFIT University  Medellín, Colombia
 - *World Bank - Universidad EAFIT, Support to the Territorial and Urban Development Agenda in LAC. Intraurban inequality in Colombia.* Census data analysis and static maps, plots, and interactive maps production to support the analysis of intraurban socioeconomic inequalities in the Colombian urban areas using census data from 2018. This research covers three dimensions: socioeconomic inequalities, accessibility inequalities, and an analysis of possible improvements to the Colombian Socioeconomic Stratification System. (Public repository: https://github.com/Rise_group/desigualdades_intraurbanas_Colombia)
- 2017
- **Researcher**
RiSE Group, EAFIT University  Medellín, Colombia
 - *World Bank LCR Flagship Report on Cities and Productivity (P158837).* Remote sensing and spatial data processing for building a spatial database of urban extents of Latin America and the Caribbean for econometric analysis. Support to the analysis of urban form and productivity, and metropolitan coordination and institutional fragmentation of Latin American cities.
- 2014
|
2012
- **Researcher**
RiSE Group, EAFIT University  Medellín, Colombia
 - *Estimación de variables socioeconómicas en zonas urbanas con imágenes satelitales.* Image processing and spatial econometrics. Intra-urban poverty index estimation from remote sensing, and analysis of the relationships between crime and the urban layout in Medellín, Colombia.
- 2010
|
2008
- **Researcher**
GIS Lab, EAFIT University  Medellín, Colombia
 - Participation in several projects: *Estructuración de una base de datos geoespacial fundamental para aplicaciones en mercadeo (2010)*; *Soporte a Expedición Antioquia 2013 (2009-2010)*; *Análisis espacial aplicado a la identificación de zonas de competencia entre centros comerciales y a la identificación de bolsas de clientes potenciales (2009)*; *Campus EAFIT Georreferenciado - Fase 1 (2008-2009)*; and *Apropiación Social de la Ciencia, la Tecnología y la Innovación - Experiencia Explora Medellín 3a Componente: Visualización del Valle de Aburrá (2008)*. Data preprocessing, spatial data analysis and output maps production.
- 2002
|
2001
- **Research Assistant**
Geology Department, EAFIT University  Medellín, Colombia
 - *Estudio hidrometeorológico y geomorfológico de 10 quebradas del Valle de Aburrá.* Field work, experiment design, spatial data integration for spatially distributed rainfall-runoff modeling, and hydraulic modeling for flood hazard mapping using GIS.

PUBLICATIONS

- Hong, A., Martinez, L., **Patino, J. E.**, Duque, J. C., & Rahimi, K. (2021). Neighbourhood green space and health disparities in the global South : Evidence from Cali , Colombia. *Health and Place*, 72(September), 102690. <https://doi.org/10.1016/j.healthplace.2021.102690>
- Patino, J. E.**, Hong, A., Duque, J. C., Rahimi, K., Zapata, S., & Lopera, V. M. (2021). Built environment and mortality risk from cardiovascular disease and diabetes in Medellín, Colombia: An ecological study. *Landscape and Urban Planning*, 213(April), 104–126. <https://doi.org/10.1016/j.landurbplan.2021.104126>
- Zuluaga Gómez, O. A., **Patiño Quinchía, J. E.**, & Valencia Hernández, G. M. (2021). Modelos implementados en el análisis de series de tiempo de temperatura superficial e índices de vegetación: una propuesta taxonómica en el contexto de cambio climático global. *Revista de Geografía Norte Grande*, 78, 323–344. <https://doi.org/http://dx.doi.org/10.4067/S071834022021000100323>
- Duque, J. C., Lozano-Gracia, N., **Patino, J. E.**, & Restrepo, P. (2021). Urban form and productivity: What shapes are Latin-American cities? *Environment and Planning B: Urban Analytics and City Science*, 106(11), 239980832199930. <https://doi.org/10.1177/2399808321999309>
- Prieto Curiel, R., **Patino, J. E.**, Duque, J. C., & O'Clery, N. (2021). The heartbeat of the city. *PLoS ONE*, 16(2), e0246714. <https://doi.org/10.1371/journal.pone.0246714>
- Patino, J. E.** (2020). Analyzing long-term availability of urban green space by socioeconomic status in Medellin, Colombia, using open data and tools. In 2020 IEEE Latin American GRSS & ISPRS Remote Sensing Conference (LAGIRS) (pp. 87–92). Santiago, Chile: IEEE. <https://doi.org/10.1109/LAGIRS48042.2020.9165672>
- Duque, J. C., Lozano-Gracia, N., **Patino, J. E.**, & Cadavid, P. R. (2020). Institutional fragmentation and metropolitan coordination in Latin American cities: Are there links with city productivity? *Regional Science Policy & Practice*, 1–33. <https://doi.org/10.1111/rsp3.12314>
- Gómez, J. A., **Patiño, J. E.**, Duque, J. C., & Passos, S. (2020). Spatiotemporal Modeling of Urban Growth Using Machine Learning. *Remote Sensing*, 12(1), 109. <https://doi.org/10.3390/rs12010109>
- Duque, J. C., Lozano-Gracia, N., **Patino, J. E.**, Restrepo, P., & Velasquez, W. A. (2019). Spatiotemporal Dynamics of Urban Growth in Latin American Cities: An Analysis Using Nighttime Lights Imagery. *Landscape and Urban Planning*, 191(August), 103640. <https://doi.org/10.1596/181394508702>
- Ricaurte, L. F., **Patiño, J. E.**, Zambrano, D. F. R., Arias-G, J. C., Acevedo, O., Aponte, C., ... Junk, W. J. (2019). A Classification System for Colombian Wetlands: an Essential Step Forward in Open Environmental Policy-Making. *Wetlands*. <https://doi.org/10.1007/s13157019011498>
- Duque, J. C., Lozano-Gracia, N., **Patino, J. E.**, & Restrepo, P. (2019). Institutional Fragmentation and Metropolitan Coordination in Latin American Cities: What Consequences for Productivity and Growth? *The World Bank*. <https://doi.org/10.1596/181394508696>
- Duque, J. C., Lozano-Gracia, N., **Patino, J. E.**, & Restrepo, P. (2019). Urban Form and Productivity: What Is the Shape of Latin American Cities? *The World Bank*. <https://doi.org/10.1596/181394508697>
- Duque, J. C., Lozano-Gracia, N., **Patino, J. E.**, Restrepo, P., & Velasquez, W. A. (2019). Spatio-Temporal Dynamics of Urban Growth in Latin American Cities: An Analysis Using Nighttime Lights Imagery. *The World Bank*. <https://doi.org/10.1596/181394508702>
- Duque, J. C., **Patiño, J. E.**, Restrepo M., Daniel E., & López Uribe, Mauricio (2018). Identificación de municipios a intervenir en un escenario de pos acuerdo. In: *Contribuciones de la Universidad a la Agenda de la Habana*. pp 195-234. Ed. Universidad EAFIT. ISBN: 978-958-720-555-8.
- Patino, Jorge E.** (2017). Book review: Emilio Chuvieco, *Fundamentals of satellite remote sensing: An environmental approach*. 2nd ed. CRC Res: Boca Raton, FL, 2016. 468 pp. ISBN 9781498728058. \$ 79.96 (Hardback), 69.97 (eBook). *Environment and Planning B: Urban Analytics and City Science*. <https://doi.org/10.1177/2399808317711988>.
- Arribas-Bel, Daniel, **Patino, Jorge E.** and Duque, Juan C. (2017) Remote sensing-based measurement of Living Environment deprivation: Improving classical approaches with machine learning. *PLoS One*, 12(5), e0176684. <https://doi.org/10.1371/journal.pone.0176684>
- Duque, J. C., **Patino, J. E.**, & Betancourt, A. (2017). Exploring the Potential of Machine Learning for Automatic Slum Identification from VHR Imagery. *Remote Sensing*, 9(9), 895. <https://doi.org/10.3390/rs9090895>

Betancur-Vargas, T., García-Giraldo, D. A., Vélez-Duque, A. J., Gómez, A. M., Flórez-Ayala, C., **Patiño, J.**, & Ortiz-Tamayo, J. Á. (2017). Aguas subterráneas, humedales y servicios ecosistémicos en Colombia. *Biota Colombiana*, 18(1), 1–28. <https://doi.org/10.21068/c2017.v18n01a1>

Duque, Juan C., **Patino, Jorge E.** and Betancourt, Alejandro (2016) Exploring the potential of machine learning for automatic slum identification from VHR imagery. CAF working paper No. 2016/13.

Patiño, J. E. (2016). Análisis espacial cuantitativo de la transformación de humedales continentales en Colombia. *Biota Colombiana*, 16(3), 86–105. <http://doi.org/10.21068/c2016s01a05>.

Patiño, Jorge E., Estupiñán Suárez, Lina M. and Úrsula Jaramillo (2016). Humedales y actividades antropogénicas. In: Gómez, M.F., Moreno, L.A., Andrade, G.I. y Rueda, C. (Eds.) *Biodiversidad 2015, Estado y tendencias de la biodiversidad continental de Colombia*. Instituto Alexander von Humboldt. Bogotá D.C., Colombia. Index card: 205.

Patino, Jorge E. and Estupinan-Suarez, Lina M. (2016). Hotspots of wetland area loss in Colombia. *Wetlands*, doi:10.1007/s13157-016-0806-z.

Patiño Quinchía, Jorge Eduardo (2016). Cityscape, poverty and crime: A quantitative assessment using VHR imagery. *Revista de Teledetección*, [S.I.]. (46): 165-170.

Patiño, Jorge E. (2016). Delimitación de humedales a partir de criterios geomorfológicos, Capítulo VI. Tras las huellas del agua. In: Cortés-Duque, J. y L. M. Estupiñán-Suárez. (Eds.). (2016). *Las huellas del agua. Propuesta metodológica para identificar y comprender el límite de los humedales de Colombia*. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. Fondo Adaptación. Bogotá D. C., Colombia. 340 pp.

Estupiñán Suárez, Lina M., Arias García, Juan Carlos, Acevedo Amaya, Oscar Javier, **Patiño, Jorge E.**, Prieto Cruz, Adriana, Restrepo Zambrano, Diego F., Rojas, Sergio, Rudas Lleras, Agustín (2016). Revisión de Información disponible, Capítulo IV. In: Cortés-Duque, J. y L. M. Estupiñán-Suárez. (Eds.). (2016). *Las huellas del agua. Propuesta metodológica para identificar y comprender el límite de los humedales de Colombia*. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. Fondo Adaptación. Bogotá D. C., Colombia. 340 pp.

Patino, Jorge E., Estupiñán-Suárez, Lina (2016). La extensión de las transformaciones. In: Jaramillo, Ú., Cortés-Duque, J., & Flórez, C. (Eds.). (2016). *Colombia Anfibia. Un país de humedales. Volumen II*. Bogota D.C., Colombia: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. 116 pp.

Ricaurte, Luisa Fernanda , **Patiño, Jorge E.**, Arias-G, Juan Carlos, Acevedo, Óscar, Restrepo, Diego, Jaramillo Villa, Úrsula, Flórez-Ayala, Carlos, Estupiñán-Suárez, Lina, Aponte, César, Rojas, Sergio, Vélez, Jaime Ignacio, Duque, Santiago, Núñez-Avellaneda, Marcela, Lasso, Carlos, Correa, Iván Darío, Rodríguez Rodríguez, Alexandra, Duque Nivia, Andrés Alberto, Restrepo, Santiago, Cleef, Antoine, Manrique, Oscar, Moreno, Evelyn Paola, Vilardy Quiroga, Sandra Patricia, Finlayson, Max, Junk, Wolfgang (2015). Tipos de humedales de Colombia - Sistema de clasificación de humedales. In: Jaramillo, Ú., Cortés-Duque, J., & Flórez, C. (Eds.). (2015). *Colombia Anfibia. Un país de humedales. Volumen 1*. Bogota D.C., Colombia: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. 140 pp.

Castiblanco Sierra, Miguel Ángel, Pérez Cubides, Francisco Javier, Estupiñán-Suárez, Lina, Rojas, Sergio, **Patino, Jorge E.** (2015). Las geoformas de un complejo cenagoso. In: Jaramillo, Ú., Cortés-Duque, J., & Flórez, C. (Eds.). (2015). *Colombia Anfibia. Un país de humedales. Volumen 1*. Bogota D.C., Colombia: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. 140 pp.

Patino, Jorge E., Rojas, Sergio, Estupiñán-Suárez, Lina, Flórez-Ayala, Carlos (2015). Las planicies inundables - Las geoformas de la Sierra y la Ciénaga. In: Jaramillo, Ú., Cortés-Duque, J., & Flórez, C. (Eds.). (2015). *Colombia Anfibia. Un país de humedales. Volumen 1*. Bogota D.C., Colombia: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. 140 pp.

Duque, J. C., **Patino, J. E.**, Ruiz, L. A., & Pardo-Pascual, J. E. (2015). Measuring intra-urban poverty using land cover and texture metrics derived from remote sensing data. *Landscape and Urban Planning*, (135): 11–21.

Patino, J. E., Duque, J. C., Pardo-Pascual, J. E, Ruiz, L. A. (2014). “Using remote sensing to assess the relationship between crime and the urban layout”. *Applied Geography*, (55): 48-60.

Duque, J. C., **Patino, J. E.**, Ruiz, L. A., Pardo-Pascual, J. E. (2013). “Quantifying slumness with remote sensing data”. Documento de trabajo CIEF, Universidad EAFIT, No. 13-23.

Duque, J. C., Gutiérrez, D., Betancourt A., **Patino, J. E.** (2013). “Análisis de la distribución espacial de la demanda de agua potable como efecto de políticas de ahorro en su consumo en el Área Metropolitana del Valle de Aburrá”. Documento de trabajo CIEF, Universidad EAFIT, No. 13-22.

Patino, J. E. and Duque, J.C. (2013). "A review of regional science applications of satellite remote sensing in urban settings". Computers, Environment and Urban Systems, (37): 1-17. ([http:// www.sciencedirect.com/science/article/pii/S0198971512000567](http://www.sciencedirect.com/science/article/pii/S0198971512000567)).

Patiño, J. E. (2012) "The potential of satellite remote sensing as a tool for urban and environmental planning in the Aburrá Valley". In: Hermelin, M., Echeverri, A., and Giraldo, J. (ed) (2012). Medellín environment, urbanismo, society. Chapter 1 Environment, article No. 5. EAFIT University (e-book ISBN: 9789587201147).

Patiño, J.E. (2010). "Potencial de las imágenes satelitales como herramienta para la planificación urbana y ambiental en el valle de Aburrá". In: Hermelin, M., Echeverri, A. y Giraldo, J. (ed.) (2010). Medellín, Medio Ambiente, Urbanismo, Sociedad. Medellín: Fondo Editorial Universidad EAFIT. pp 112 – 127.

Acosta, S. and **Patiño, J. E.** (2009). "Alguien nos observa". El Eafitense. No. 99: pp. 88 – 91. ISSN 0124-3624.

Bedoya V., J, Botero, N. L., Manotas, E. C., Giraldo, A., Gallego, L. M. and **Patiño, J. E.** (2005). "Community Noise and CO Levels in Downtown Medellín". Conference proceedings 98th Annual Meeting and Exhibition of the Air and Waste Management Association AWMA. Minneapolis: 21-24 Junio, 2005. Abstract # 05-A-530-AWMA; AB-5a. Current Noise Issues, 2005. ISBN 0-923204-88-1.

Patiño, J. E., Montoya, J. J., Hermelin, M. and Botero, V. (2004). "Zonificación geomorfológica de microcuencas: una herramienta útil para análisis hidrológico". Boletín de Ciencias de La Tierra. No. 16: pp. 23 – 36. ISSN 0120-3630.

Botero F., V., Smith, R. and **Patiño, J. E.** (2004). "Zonificación del uso de microcuencas urbanas como base para el ordenamiento territorial". Conference proceedings XXI Congreso Latinoamericano de Hidráulica, Sao Pedro, 2004.

Botero, V., Smith, R. and **Patiño, J.** (2004). "Zonificación de Microcuencas Urbanas". Conference proceedings IV Foro Centroamericano y del Caribe de Cuencas Hidrográficas. La Habana, 2004.

Botero, V., Smith, R. and **Patiño, J. E.** (2004). "Metodología para la Zonificación del uso de microcuencas urbanas". Conference proceedings II Simposio Internacional sobre Gestión Integral del Agua y el Medio Ambiente. Barquisimeto, 2004.

Botero, V., Smith, R. and **Patiño, J. E.** (2004). "Metodología para la Zonificación del uso de microcuencas urbanas". Conference proceedings XVI Seminario Nacional de Hidráulica e Hidrología. Armenia, 2004.

Vélez, J. I., Rave, C., Caballero, H., Botero, V., **Patiño, J.**, and Escobar, D. (2003). "Evaluación de Riesgos en Cuencas Urbanas". Avances En Recursos Hidráulicos. No. 10: pp. 17-32, 2003. ISSN 0121-5701.

Smith, R., Botero, V. and **Patiño, J.** (2003). "Zonificación de microcuencas urbanas para efectos de ordenamiento territorial". Avances En Recursos Hidráulicos. No. 10: pp. 33 – 46. ISSN 0121-5701.

Botero, V., Caballero, H., Montes, L. F and **Patiño, J. E.** (2003) "La zonificación morfodinámica como insumo en la evaluación de la amenaza por movimientos en masa: una propuesta metodológica". Resúmenes IX Congreso Colombiano de Geología. Medellín, Colombia. July 30 - August 1 2003.

Vélez, J. I., Rave, C., Caballero, H., Botero, V., **Patiño, J.**, Escobar, D. and Smith, R. (2003) "Evaluación de Riesgos en Cuencas Urbanas". Conference proceedings III Congreso Latinoamericano de Manejo de Cuencas Hidrográficas. Arequipa, Perú. June 9 – 13 2003.



TEACHING EXPERIENCE

present 2017	<ul style="list-style-type: none">● Quantitative analysis, applied urban analysis Master in Urban and Environmental Processes, EAFIT University.	📍 Medellín, Colombia
present 2017	<ul style="list-style-type: none">● Introduction to GIS and spatial data manipulation Master in Urban and Environmental Processes, EAFIT University.	📍 Medellín, Colombia
2018	<ul style="list-style-type: none">● Geocodification with open software tools. Tailored course at the Logistics Department of Cemex Colombia.	📍 Bogotá, Colombia
2018	<ul style="list-style-type: none">● Techniques for georeferenced data analysis Master of Economics, EAFIT University.	📍 Medellín, Colombia
2017	<ul style="list-style-type: none">● Quantitative spatial data analysis. Tailored course for the Strategic Security Direction at Empresas Públicas de Medellín.	📍 Medellín, Colombia
2017	<ul style="list-style-type: none">● Geographic Information Systems Master in Applied Mathematics, EAFIT University.	📍 Medellín, Colombia
2017	<ul style="list-style-type: none">● Remotely sensed image processing Master in Applied Mathematics, EAFIT University.	📍 Medellín, Colombia
2016	<ul style="list-style-type: none">● Techniques for georeferenced data analysis - Introduction to GIS and spatial data processing Master of Economics, EAFIT University.	📍 Medellín, Colombia
2014	<ul style="list-style-type: none">● Spatial econometrics and impact analysis - Introduction to digital cartography and GIS Master of Economics, EAFIT University.	📍 Medellín, Colombia
2008	<ul style="list-style-type: none">● Diploma course: Geographic Information Systems CEC, EAFIT University	📍 Medellín, Colombia
2007	<ul style="list-style-type: none">● Diploma course: Remotely sensed image processing CEC, EAFIT University	📍 Medellín, Colombia
2005	<ul style="list-style-type: none">● GIS for urban planning Undergraduate course, Urban and Regional Planning School, Universidad Nacional de Colombia.	📍 Medellín, Colombia
2005	<ul style="list-style-type: none">● Photo-geology Undergraduate course, Faculty of Mines, Universidad Nacional de Colombia.	📍 Medellín, Colombia
2004	<ul style="list-style-type: none">● Introduction to GIS Diploma course, Geosciences School, Universidad Nacional de Colombia.	📍 Medellín, Colombia
2004	<ul style="list-style-type: none">● Hidromorphometric and geostatistic applications with ArcInfo 8.2 Diploma course, Department of Hydraulic Engineering and Environment, Universitat Politècnica de València.	📍 Valencia, Spain
2001	<ul style="list-style-type: none">● Introduction to GIS for Environmental Management Diploma course, CEC, EAFIT University	📍 Cali, Colombia



PROFESSIONAL EXPERIENCE

present
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2022

Independent contractor

OECD - Sahel and West Africa Club Secretariat. Project: *Sustainability and resiliency of African cities urbanisation*.
📍 Bogotá, Colombia

2022
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2018

Project leader

RiSE Group, EAFIT University, Project: *Urban Form and its impact on sustainable development*. (part of PEAK Urban project: Building capacity for the future city in developing countries, funded by the Global Challenges Research Fund from United Kingdom).

📍 Medellín, Colombia

- Coordination with international researchers from the PEAK Urban network.
- Speaking with local authorities and stakeholders.
- Geospatial data and remote sensing image processing and analysis.
- Statistical analysis, report and papers writing.

2022
|
2021

Project leader

Servicios Geológicos Integrales (SGI), Project: *Mapping of Corredor-Montecristo-Yarirí swamp complex and Main Ecological Structure of the Puerto Wilches municipality (Santander)*. (Client: Ecopetrol).

📍 Bogotá, Colombia

- Technical coordination.
- Quality control of reports and cartography.
- Report writing and products presentation design.
- Presentation of project results to authorities and stakeholders.

2021

Geomorphologic component leader

Servicios Geológicos Integrales (SGI), Project: *Definition of a methodology for wetland mapping at 1:25.000 scale*. (Clients: Ecopetrol and Ministerio de Medio Ambiente).

📍 Bogotá, Colombia

- Coordination of the geomorphology team.
- Quality control of remote sensing image processing and geospatial analysis.
- Support to information integration from different teams.
- Report writing and presentations design.

2020

Senior geospatial consultant

Innovación, EAFIT University, Project: *Spatial analysis for innovative strategy design for promoting the tourism industry safe and sustainable growing in Antioquia*. (Client: Gobernación de Antioquia).

📍 Medellín, Colombia

- Tourism hotspots identification.
- Maps and satellite-views design.
- Results analysis.
- Report writing and presentations design.

2020

Senior geospatial consultant, data leader

Innovación, EAFIT University, Project: *Study for Empresas Públicas de Medellín E.S.P. (Medellin utilities company): Spatio-temporal forecast of water-supply and sewerage*.

📍 Medellín, Colombia

- Open data sources identification.
- Quality control for remote sensing imagery and geospatial data processing.
- Report writing and presentations design.

2017

Project manager

Innovación, EAFIT University, Project: *Geocoding and analysis of community and alternative media in Bogotá*.

📍 Bogotá, Colombia

- Project manager.
- Exploratory spatial data analysis and map production.
- Report writing and presentation.

2017	Geospatial team leader Innovación, EAFIT University, Project: <i>Study for Envigado municipality about economic vocation, tourism, decent work, and economic development policies.</i>	 Envigado, Colombia
	<ul style="list-style-type: none"> • Geospatial data integration for socioeconomic characterization. • Land cover classification from aerial images. • Business hotspots identification and accessibility analysis. 	
2017 2016	Geospatial consultant Innovación, EAFIT University, Project: <i>Ubitag model data geocoding.</i>	 Medellín, Colombia
	<ul style="list-style-type: none"> • Data geocoding and spatial database design. • Webmap design and deployment with ArcGIS Online. 	
2016	Geospatial team leader Innovación, EAFIT University, Project: <i>Monitoring and assessment system for the education parks and citadales network of the Department of Antioquia.</i>	 Medellín, Colombia
	<ul style="list-style-type: none"> • Service area analysis and map production. • Project management assistant. 	
2015	Data leader Innovación, EAFIT University, Project: <i>Network of peace, development and reconciliation regional observatories, pilot chapters: Guaviare and Caquetá (Colombia).</i>	 Bogotá, Colombia
	<ul style="list-style-type: none"> • Coordination of access to information at the local level. • Report design and production for pilot regions. 	
2015	Geospatial analyst Innovación, EAFIT University, Project: <i>Spatial study of economic, commercial and industrial strengths of Laureles-Estadio Commune, Medellín.</i>	 Medellín, Colombia
	<ul style="list-style-type: none"> • Business hotspots identification and accessibility analysis. • Map production. • Geospatial data integration and analysis. 	
2015	Environmental consultant Instituto de Investigaciones Biológicas Alexander Von Humboldt, Project: <i>Adaptation Fund, Wetlands component.</i>	 Bogotá, Colombia
	<ul style="list-style-type: none"> • National wetland transformation analysis using geospatial data. • Identification of wetlands functional boundary from geomorphologic data. • Support to the design of the Colombian wetland classification system on geomorphology. 	
2014	Geospatial consultant RiSE Group, EAFIT University, Project: <i>UN-Habitat's City Prosperity Index (CPI) Methodology.</i>	 Medellín, Colombia
	<ul style="list-style-type: none"> • Selection and definition of indicators with a spatial dimension. • Spatial data processing for pilot CPI in Medellín. • Report writing. 	
2013	Geospatial analyst Innovación, EAFIT University, Project: <i>Spatial study of economic, commercial and industrial strengths of Commune 14, Medellín.</i>	 Medellín, Colombia
	<ul style="list-style-type: none"> • Business hotspots identification and accessibility analysis. • Map production. • Geospatial data integration and analysis. 	

2013 2012	Geospatial team leader CICE, EAFIT University, Project: <i>Definition of strategic planning criteria for territorial development in the Urabá region, Antioquia Department, Colombia.</i> <ul style="list-style-type: none"> • Data integration, geoprocessing and spatial data analysis. • Map production and report writing. 	 Medellín, Colombia
2011 2010	GIS team leader CICE, EAFIT University, Project: <i>BIO 2030, Master plan Medellín - Aburrá Valley.</i> <ul style="list-style-type: none"> • Data integration from different sources. • Geoprocessing and spatial analysis. • Geodatabase design and implementation. • Map production. • Support to urban planning recommendations. 	 Medellín, Colombia
2008	GIS team leader Idea-UN, National University of Colombia, Project: <i>Carrying capacity estimator for the Envigado municipality Zone 10: Santa Catalina and Escobero.</i> <ul style="list-style-type: none"> • Geoprocessing and data integration from different sources. • Support to the project management. • Support with spatial data for mathematical modeling. • Report writing and presentation. 	 Envigado, Colombia
2007 2006	GIS team leader Geosciences School, National University of Colombia, Project: <i>Aburrá river watershed management plan.</i> <ul style="list-style-type: none"> • Data integration from different sources. • Geoprocessing and spatial analysis. • Geodatabase design and implementation. • Map production. • Support to land use recommendations with geospatial analysis. 	 Medellín, Colombia
2006	GIS team leader Architecture Faculty, National University of Colombia, Project: <i>Revision of the Itagüí municipality's land management plan.</i> <ul style="list-style-type: none"> • Data integration from different sources. • Geoprocessing and spatial analysis. • Geodatabase design and implementation. • Map production. 	 Medellín, Colombia
2006 2005	GIS team leader Geosciences School, National University of Colombia, Projects: <i>Studies for the regulation of use of the Doña María creek waters, and Updating of Medellín city's Center-Eastern Zone stream network.</i> <ul style="list-style-type: none"> • Field data digitalization. • Map production. • Geodatabase design and implementation. 	 Medellín, Colombia
2005	Geologist and GIS leader Proingecon Ltda, Project: <i>Geodatabase for the mining cadastre of Medellín City.</i> <ul style="list-style-type: none"> • Field data digitalization. • Map production and report writing. • Geodatabase design and implementation. 	 Medellín, Colombia
2004	GIS analyst Faculty of Mines, National University of Colombia, Projects: <i>CO concentration on air and noise intensity in downtown Medellín, Assessment of groundwater potential of Santa Fe de Antioquia, Sopetrán, San Jerónimo, Olaya and Liborina municipalities, and Identification, classification, and characterization of hydrogeologic features of wetlands and assessment of recharge zones and their relation to geology and the stream network of Envigado municipality.</i> <ul style="list-style-type: none"> • Field data digitalization. • Map production. • Geoprocessing and spatial data integration and analysis. 	 Medellín, Colombia

2003	<ul style="list-style-type: none"> ● Field coordinator Department of Cartographic Engineering, Geodesy and Photogrammetry, Polytechnique University of Valencia, Project: <i>Analysis of the Valencian mountains visitor profile.</i> 	<ul style="list-style-type: none"> 📍 Valencia, Spain
2003	<ul style="list-style-type: none"> ● GIS and Remote Sensing analyst Faculty of Mines, National University of Colombia, Projects: <i>Fluvial, coastal and deltaic dynamics of Canal del Dique's delta; and Design of the methodology for the formulation of the integral land management plans of micro-watersheds and its application to the Iguaná creek lower watershed.</i> 	<ul style="list-style-type: none"> 📍 Medellín, Colombia
	<ul style="list-style-type: none"> • Field data digitalization. • Geoprocessing and spatial data integration and analysis. • Updating land cover maps from remote sensing imagery. • Map production. 	
2002	<ul style="list-style-type: none"> ● GIS analyst Integral S.A., Project: <i>Caroní river (Venezuela) master plan.</i> 	<ul style="list-style-type: none"> 📍 Medellín, Colombia
	<ul style="list-style-type: none"> • Geoprocessing and spatial data integration. • Map production. 	
1999 1998	<ul style="list-style-type: none"> ● Geologist Idea-UN, National University of Colombia, Project: <i>Assessment of geologic, geomorphologic and hydrologic hazards, and geotechnical characterization of 33 urban areas in the Huila Department, Colombia.</i> 	<ul style="list-style-type: none"> 📍 Huila, Colombia
	<ul style="list-style-type: none"> • Field work and discussion with local authorities. • Report writing. • Data integration and analysis. 	
1999 1998	<ul style="list-style-type: none"> ● GIS analyst CIDI, UPB, Project: <i>Systematization and digitalization of high risk prone areas census of Medellín city - SIMPAD UPB agreement.</i> 	<ul style="list-style-type: none"> 📍 Medellín, Colombia
	<ul style="list-style-type: none"> • Field data digitalization. • Geodatabase implementation. 	
1997	<ul style="list-style-type: none"> ● Junior geologist Idea-UN, National University of Colombia, Project: <i>Pre-assessment of the Ciénaga Grande de Magangué and the Ceibal-Pascuala wetland complex environmental management plans.</i> 	<ul style="list-style-type: none"> 📍 Magangué, Colombia
	<ul style="list-style-type: none"> • Wetland and stream connections mapping from field work and aerial photointerpretation. • Geomorphologic mapping and fluvial dynamics analysis. 	



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