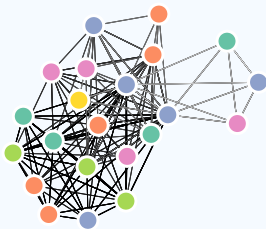


# MARIANA ARBOLEDA

As an educator and researcher, I integrate data science, computational thinking, and equitable education to create meaningful learning experiences. I have led initiatives to help teachers incorporate data literacy and developed data-driven processes to evaluate multiple educational projects. My classroom experience enriches my data analysis work just as much as my involvement in projects enhances the relevance and impact of my teaching.



## EDUCATION

current   2022	<b>PhD., Education</b> Universidad del Norte	📍 Barranquilla, Colombia
	<ul style="list-style-type: none"><li>• Data Science Education</li><li>• Advisor: Camilo Vieira, PhD</li></ul>	
June 2025   Aug 2024	<b>Visiting Scholar</b> University of Virginia	📍 Charlottesville, USA
	<ul style="list-style-type: none"><li>• Fulbright scholar</li><li>• Advisor: Jennifer Chiu, PhD</li></ul>	
2022   2019	<b>MS Engineering</b> Universidad EAFIT	📍 Medellín, Colombia
	<ul style="list-style-type: none"><li>• Applying Machine Learning Models in sales forecasting</li><li>• GPA: 4.78/5.0</li></ul>	
2016   2012	<b>BS Production Engineering</b> Universidad EAFIT	📍 Medellín, Colombia
	<ul style="list-style-type: none"><li>• GPA: 4.64/5.0</li></ul>	

## SELECTED PROJECTS

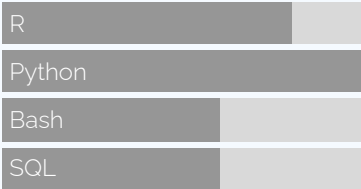
Present   2024	<b>Instructional developer</b> Charlottesville, VA, USA	📍 University of Virginia
	<ul style="list-style-type: none"><li>• Designed lesson plans fostering data science with global perspectives.</li><li>• Created instructional videos to guide educators in integrating data literacy into their practice.</li><li>• Developed assessment tools to measure the effectiveness of instructional materials and track educators' progress.</li></ul>	
2024	<b>Pedagogical coordinator and instructional developer</b> Barranquilla, Colombia	📍 Universidad del Norte
	<ul style="list-style-type: none"><li>• Coordinated a team of 5 experts to design 30 lesson plans and evaluations for the K-11 Colombian curriculum</li><li>• Designed lesson plans introducing computational science, and data science, and artificial intelligence concepts through unplugged and technology-based activities</li></ul>	
2024   2022	<b>Research assistant</b> Barranquilla, Colombia	📍 Universidad del Norte
	<ul style="list-style-type: none"><li>• Validating psychometric instruments for measuring Teacher well-being and socio-emotional learning of students from two different countries, and leading the report of quantitative results.</li></ul>	

View this resume online with links at [resume](#)  
For a longer form version, see my [CV](#).

## CONTACT

✉ [marianaarboleda@uninorte.edu.co](mailto:marianaarboleda@uninorte.edu.co)  
🐙 [github.com/marianaarboleda](https://github.com/marianaarboleda)  
🔗 [marianaarboleda.github.io](https://marianaarboleda.github.io)  
in <https://www.linkedin.com/in/marianaarboledaf/>

## LANGUAGE SKILLS



2023   2020	<b>Leading Data Analyst</b> Barranquilla, Colombia <span>📍 Universidad del Norte</span>
	<ul style="list-style-type: none"> <li>• Developed an innovative online visualization platform enabling seamless customization and download of charts, facilitating efficient data-driven analyses for the team.</li> <li>• Led a team of data analysts to collect, clean, and analyze program data, ensuring data accuracy and integrity for evidence-based decision-making.</li> <li>• Collaborated closely with other leaders and stakeholders, leveraging data insights to identify areas for improvement.</li> <li>• Pioneered the implementation of an automated evaluation process for a computational thinking maturity model.</li> </ul>
2020	<b>Assistant consultant</b> Medellín, Colombia <span>📍 Universidad EAFIT</span>
	<ul style="list-style-type: none"> <li>• Worked closely with the client to ensure effective translation of their needs into the tool's features and functionalities</li> <li>• Created an intuitive user interface using Python's tkinter package for an electrical connections forecasting tool, enhancing user accessibility and usability.</li> <li>• Built a robust data processing pipeline, streamlining the input data for accurate forecasting and ensuring the tool's reliability.</li> <li>• Trained the client's in-house team on how to operate the application and interpret the forecasting results, facilitating seamless knowledge transfer and long-term usability.</li> </ul>



## SELECTED TEACHING EXPERIENCE

Dec 2023   Jan 2023	<b>Mathematics Tutoring</b>	Universidad del Norte - I.E El Cañahuate	<span>📍 Barranquilla, Colombia</span>
	<ul style="list-style-type: none"> <li>• Providing tailored mathematics tutoring sessions to high school students, with a strong emphasis on statistics, probability, and data visualization</li> <li>• Instilling an appreciation for Mathematics and its practical applications, with a focus on real-world examples and relevance</li> <li>• Utilizing various teaching resources to enhance comprehension of statistical concepts and data representation while recognizing the environmental limitations</li> </ul>		
Dec 2023   Jul 2022	<b>Computational Thinking for Everyone</b>	Universidad del Norte	<span>📍 Barranquilla, Colombia</span>
	<ul style="list-style-type: none"> <li>• Teaching Computational Thinking, Data Science, and Machine Learning fundamentals for multidisciplinary students</li> <li>• Implementing a design-based research approach to refine the program using evidence from the initial offerings</li> </ul>		
Nov 2021   Apr 2021	<b>Computational Thinking for High School Level Students - Remote Learning</b>	Universidad EAFIT	<span>📍 Medellín, Colombia</span>
	<ul style="list-style-type: none"> <li>• Engaged students in beginner-friendly activities fostering the development of computational thinking skills</li> <li>• Encouraged collaborative learning through online platforms, creating an interactive and inclusive virtual classroom</li> </ul>		
Dec 2016   Jan 2014	<b>English as Second Language for Children and Adolescents</b>	Universidad EAFIT	<span>📍 Medellín, Colombia</span>
	<ul style="list-style-type: none"> <li>• Participated in ongoing pedagogical training programs, continuously enhancing teaching techniques</li> <li>• Designed and implemented engaging, age-appropriate curriculum</li> </ul>		



## SELECTED PUBLICATIONS, POSTERS, AND TALKS

2023

### Opening the Machine Learning Black Box for Multidisciplinary Students: Scaffolding from GUI to Coding

2023 IEEE Frontiers in Education Conference (FIE)

College Station, TX, USA

- Arboleda, M., Vieira, C., & Chiu, J. L.
- Opening the Machine Learning Black Box for Multidisciplinary Students: Scaffolding from GUI to Coding
- DOI: <https://doi.org/10.1109/FIE58773.2023.10343043><sup>1</sup>

### Interpreting Direct Sales' Demand Forecasts Using SHAP Values

Production



2023

- Arboleda-Florez, M., & Castro-Zuluaga, C.
- Interpreting direct sales' demand forecasts using SHAP values
- DOI: <https://doi.org/10.1590/0103-6513.20220035><sup>2</sup>

2021

### Sales Forecasting Difficulties' Analysis on Colombian Direct Sales Companies

In Proceedings of the International Congress of Industrial Engineering (ICIE2019)

Springer International Publishing

- Castro-Zuluaga, C. A., & Arboleda, M.
- Sales Forecasting Difficulties' Analysis on Colombian Direct Sales Companies
- DOI: [https://doi.org/10.1007/978-3-030-49370-7\\_12](https://doi.org/10.1007/978-3-030-49370-7_12)<sup>3</sup>



## SELECTED AWARDS, FELLOWSHIPS, & GRANTS

2025  
|  
2024

### Fulbright scholarship - Estudiante doctoral colombiano

Fulbright Colombia

Colombia

- Awarded for academic excellence and leadership potential, as part of a highly competitive selection process supporting Colombian doctoral students in international research and study.

2022  
|  
2019

### Full-Funded Research Project in Engineering

Universidad EAFIT

Colombia

- Awarded to fully support my master's degree in engineering, recognizing the quality and impact of my research proposal.

2016  
|  
2012

### Bachilleres por Colombia Scholarship

Ecopetrol

Colombia

- Full scholarship for the entire undergraduate program

2015

### Roberto Rocca Education Program Scholarship

Ternium, Techint Ingeniería y Construcción and TenarisTamsa

Colombia

- Awarded based on academic performance and a rigorous selection process

2014

### Honorary scholarship for academic performance

Universidad EAFIT

Colombia

- Awarded for achieving the highest average score in my engineering program.



## LINKS

1: <https://doi.org/10.1109/FIE58773.2023.10343043>

2: <https://doi.org/10.1590/0103-6513.20220035>  
3: [https://doi.org/10.1007/978-3-030-49370-7\\_12](https://doi.org/10.1007/978-3-030-49370-7_12)