

# MARIANA ARBOLEDA

I love learning and hope to inspire the same in my students



## EDUCATION

current  
|  
2022

### PhD., Education

Universidad del Norte

📍 Barranquilla, Colombia

- Data Science Education
- Advisor: Camilo Vieira, PhD

June  
2025  
|  
Aug 2024

### Visiting Scholar

University of Virginia

📍 Charlottesville, USA

- Fulbright scholar
- Advisor: Jennifer Chiu, PhD

2022  
|  
2019

### MS Engineering

Universidad EAFIT

📍 Medellin, Colombia

- Applying Machine Learning Models in sales forecasting
- GPA: 4.78/5.0

2016  
|  
2012

### BS Production Engineering

Universidad EAFIT

📍 Medellin, Colombia

- GPA: 4.64/5.0



## PROJECT AND CONSULTING EXPERIENCE

present  
|  
2022

### Research assistant

Barranquilla, Colombia

📍 Universidad del Norte

- 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.

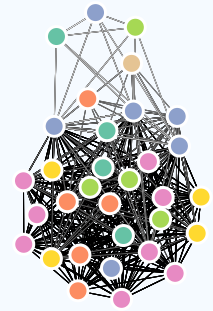
2024

### Pedagogical coordinator and instructional developer

Barranquilla, Colombia

📍 Universidad del Norte

- Coordinated a team of 5 experts to design 30 lesson plans and evaluations for the K-11 Colombian curriculum,
- Designed lesson plans introducing computational science, and data science, and artificial intelligence concepts



View this CV online with links at  
[\\_https://marianaarboleda.github.io/cv/\\_](https://marianaarboleda.github.io/cv/)

## CONTACT



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🐦 [marbof](#)

📄 [github.com/marianaarboleda](https://github.com/marianaarboleda)

@ [marianaarboleda.github.io](https://marianaarboleda.github.io)

in <https://www.linkedin.com/in/marianaarboledaf/>

## LANGUAGE SKILLS



Made with the R package [pagedown](#).

The source code is available on  
[github.com/marianaarboleda/cv](https://github.com/marianaarboleda/cv).

Last updated on 2025-01-19.

2023  
|  
2020

### Leading Data Analyst

Barranquilla, Colombia

📍 Universidad del Norte

- Developed an innovative online visualization platform enabling seamless customization and download of charts, facilitating efficient data-driven analyses for the team.
- Led a team of data analysts to collect, clean, and analyze program data, ensuring data accuracy and integrity for evidence-based decision-making.
- Collaborated closely with other leaders and stakeholders, leveraging data insights to identify areas for improvement.
- Pioneered the implementation of an automated evaluation process for a computational thinking maturity model.

2022

### Curriculum developer assistant

Barranquilla, Colombia

📍 Asociación Colombiana de Facultades de Ingeniería

- Cooperated with senior curriculum developers to enhance the K-12 mathematics curriculum by integrating computational thinking concepts.
- Conducted extensive research to identify opportunities for including computational thinking in the curriculum and aligning it with learning objectives.
- Suggested, revised, and improved a year-by-year learning progression, ensuring a seamless course-by-course progression, which is now published and accessible at Guidelines for the Integration of Computational Thinking in Mathematics.

2020

### Assistant consultant

Medellín, Colombia

📍 Universidad EAFIT

- Worked closely with the client to ensure effective translation of their needs into the tool's features and functionalities
- Created an intuitive user interface using Python's tkinter package for an electrical connections forecasting tool, enhancing user accessibility and usability.
- Built a robust data processing pipeline, streamlining the input data for accurate forecasting and ensuring the tool's reliability.
- 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.



## INDUSTRY EXPERIENCE

2019  
|  
2017

### Young Professional (Career Development Program)

Ternium Siderúrgica de Caldas

📍 Manizales, Colombia

- Managed an innovative project to monitor on-site construction and maintenance activities using drones
- Designed training courses tailored for new employees enhancing their onboarding experience
- Led regular meetings focused on industrial safety and continuous improvement, fostering a culture of ongoing learning

NA



## TEACHING EXPERIENCE

Dec 2023  
|  
Jan 2023

### Mathematics Tutoring

Universidad del Norte - I.E El Cañahuat

📍 Barranquilla, Colombia

- Providing tailored mathematics tutoring sessions to high school students, with a strong emphasis on statistics, probability, and data visualization
- Instilling an appreciation for Mathematics and its practical applications, with a focus on real-world examples and relevance
- Utilizing various teaching resources to enhance comprehension of statistical concepts and data representation while recognizing the environmental limitations

Dec 2023  
|  
Jul 2022

### Computational Thinking for Everyone

Universidad del Norte

📍 Barranquilla, Colombia

- Teaching Computational Thinking, Data Science, and Machine Learning fundamentals for multidisciplinary students
- Implementing a design-based research approach to refine the program using evidence from the initial offerings

Nov 2021  
|  
Apr 2021

### Computational Thinking for High School Level Students - Remote Learning

Universidad EAFIT

📍 Medellin, Colombia

- Engaged students in beginner-friendly activities fostering the development of computational thinking skills
- Encouraged collaborative learning through online platforms, creating an interactive and inclusive virtual classroom

Dec 2016  
|  
Jan 2014

### English as Second Language for Children and Adolescents

Universidad EAFIT

📍 Medellin, Colombia

- Participated in ongoing pedagogical training programs, continuously enhancing teaching techniques
- Designed and implemented engaging, age-appropriate curriculum
- Demonstrated a passion for education and language acquisition

I am passionate about education.



## AWARDS, FELLOWSHIPS, & GRANTS

2025  
|  
2024

### Fulbright scholarship - Estudiante doctoral colombiano

Fulbright Colombia

📍 Colombia

N/A

2022  
|  
2019

### Full-Funded Research Project in Engineering

Universidad EAFIT

📍 Colombia

- Master's program research

2016   2012	<b>Bachilleres por Colombia Scholarship</b> Ecopetrol <div>             • Full scholarship for the entire undergraduate program           </div> Colombia
2015	<b>Roberto Rocca Education Program Scholarship</b> Ternium, Techint Ingeniería y Construcción and TenarisTamsa <div>             N/A           </div> Colombia
2014	<b>Jóvenes ingenieros del DAAD 2014-2015. Precandidate</b> Universidad EAFIT <div>             • Language scholarship based on academic merit           </div> Colombia
2014	<b>Honorary scholarship for academic performance</b> Universidad EAFIT <div>             N/A           </div> Colombia



## SELECTED PUBLICATIONS, POSTERS, AND TALKS

2023	<b>Opening the Machine Learning Black Box for Multidisciplinary Students: Scaffolding from GUI to Coding</b> 2023 IEEE Frontiers in Education Conference (FIE) <div>             • Arboleda, M., Vieira, C., &amp; Chiu, J. L.              • Opening the Machine Learning Black Box for Multidisciplinary Students: Scaffolding from GUI to Coding              • DOI: <a href="https://doi.org/10.1109/FIE58773.2023.10343043">https://doi.org/10.1109/FIE58773.2023.10343043</a><sup>2</sup> </div> College Station, TX, USA
	<b>Interpreting Direct Sales' Demand Forecasts Using SHAP Values</b> Production <div>             2023              • Arboleda-Florez, M., &amp; Castro-Zuluaga, C.              • Interpreting direct sales' demand forecasts using SHAP values              • DOI: <a href="https://doi.org/10.1590/0103-6513.20220035">https://doi.org/10.1590/0103-6513.20220035</a><sup>3</sup> </div>
2021	<b>Introduction</b> In Influencing Customer Demand: An Operations Management Approach <div>             • Castro-Zuluaga, C., &amp; Arboleda-Florez, M.              • Introduction to the book 'Influencing Customer Demand: An Operations Management Approach'              • DOI: <a href="https://www.routledge.com/Influencing-Customer-Demand-An-Operations-Management-Approach/Hemmati-Sajadieh/p/book/9780367619985">https://www.routledge.com/Influencing-Customer-Demand-An-Operations-Management-Approach/Hemmati-Sajadieh/p/book/9780367619985</a><sup>4</sup> </div> CRC Press

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)

Oct 2024

**Integrating Data Science in the classroom: Research experiences**

Cátedra Europa 2024U - niversidad del Norte

📍 Barranquilla, Colombia

Panelist

June 2024

**AI: Enemy or Ally?**

Deeper Learning LATAM 2024

📍 Medellín, Colombia

Workshop Facilitator

2023

**Master class: Applied Computational Thinking in Education**

Institucion Universitaria Americana

📍 Barranquilla, Colombia

Panelist

2023

**Navigating the World of Data. VII Technology Forum: "Innovation for Life. New Educational Technologies for the Integration of Society"**

Colegio Biffi la Salle

📍 Barranquilla, Colombia

Panelist

2023

**Data for Change: How Can Young People Contribute to the SDGs Using Data Science. "Innovation and Sustainability Forum: A Youthful Perspective on the SDGs"**

Barranquilla Territorio STEM

📍 Barranquilla, Colombia

Panelist

2022

**Public Policy Dialogue CFK. Computational Thinking: The Future is Now**

British Council Colombia

📍 Bogotá, Colombia

Panelist

2021

**Computational Thinking in School**

Universidad EAFIT

📍 Medellín, Colombia

Workshop Facilitator

2019

## Student Research Groups Fair

Universidad EAFIT

Volunteer Judge

📍 Medellín, Colombia



1: NA

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

3: <https://doi.org/10.1590/0103-6513.20220035>

4: <https://www.routledge.com/Influencing-Customer-Demand-An-Operations-Management-Approach/Hemmati-Sajadieh/p/book/9780367619985>

5: [https://doi.org/10.1007/978-3-030-49370-7\\_12](https://doi.org/10.1007/978-3-030-49370-7_12)