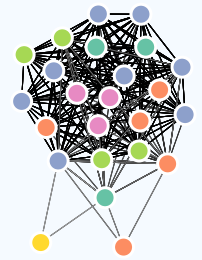


MARIANA ARBOLEDA

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

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

CONTACT



marianaarboledaforez@gmail.com

marbof

github.com/marianaarboleda

marianaarboleda.github.io

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

[/marianaarboledaf/](https://www.linkedin.com/in/marianaarboledaf/)

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

LANGUAGE SKILLS



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

The source code is available on
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 Cañahuate

📍 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.



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>²

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>³

2021

Introduction

In Influencing Customer Demand: An Operations Management Approach

CRC Press

- Castro-Zuluaga, C., & Arboleda-Florez, M.
- Introduction to the book 'Influencing Customer Demand: An Operations Management Approach'
- DOI: <https://www.routledge.com/Influencing-Customer-Demand-An-Operations-Management-Approach/Hemmati-Sajadieh/p/book/9780367619985>⁴

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_12⁵

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 <div> <div></div> <div>Barranquilla, Colombia</div> </div> Panelist
2022	Public Policy Dialogue CFK. Computational Thinking: The Future is Now British Council Colombia <div> <div></div> <div>Bogotá, Colombia</div> </div> Panelist
2021	Computational Thinking in School Universidad EAFIT <div> <div></div> <div>Medellín, Colombia</div> </div> Workshop Facilitator
2019	Student Research Groups Fair Universidad EAFIT <div> <div></div> <div>Medellín, Colombia</div> </div> Volunteer Judge



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