

# Jordy Alfaro

Data Scientist & Mathematics Educator

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## Profile Summary

Data Scientist with strong mathematical foundation and expertise in statistical modeling, machine learning, and data visualization. Combines technical expertise with educational background to transform complex data into actionable insights. Proven ability to extract valuable intelligence from structured and unstructured datasets using Python, R, SQL, and various visualization tools. Currently serving as a university professor teaching statistics and numerical analysis.

## Professional Experience

### **Freelance Data Science Consultant**

2023 - Present

*Remote*

- Provide data science consulting services for clients in education, marketing, and business sectors
- Develop machine learning models for applications such as customer segmentation, churn prediction, and sentiment analysis
- Transform complex datasets into clear, actionable insights to drive business decisions
- Implement statistical analysis and predictive modeling techniques to solve client-specific problems

### **Mathematics & Statistics Professor**

2023 - Present

*Universidad Latinoamericana de Ciencia y Tecnología (ULACIT)*

*Costa Rica*

- Teach descriptive and inferential statistics, numerical analysis with applications in R, Python, and MATLAB
- Develop applied projects in business statistics and implement data science tools in the teaching process
- Design curriculum that bridges theoretical concepts with practical applications in data science
- Mentor students in research projects involving statistical analysis and data visualization

### **Mathematics Teacher**

2023

*Centro Educativo Cristiano Reformado*

*Costa Rica*

- Taught mathematics to high school students from 7th to 11th grade
- Developed technology-based teaching strategies for mathematics education
- Created engaging curriculum materials to enhance student learning and retention

### **Secondary School Mathematics Teacher**

2022

*EMVA High School*

*Costa Rica*

- Taught 7th and 8th grade mathematics, applying innovative teaching methods for complex mathematical concepts
- Integrated technology into classroom instruction to enhance student engagement
- Provided individualized support to students with diverse learning needs

## Education

### **Master's in Mathematical Methods and Applications**

2023 - Present

*Universidad de Costa Rica*

*Costa Rica*

- Advanced study in mathematical methods and their applications in data science and computational fields
- Focus on statistical modeling, optimization techniques, and mathematical foundations of machine learning

### **Bachelor's in Mathematics Education with Technological Environments**

2018 - 2023

*Tecnológico de Costa Rica*

*Costa Rica*

- Specialized in mathematics education with emphasis on technology integration and application
- Developed teaching methodologies that leverage technology to enhance mathematical understanding
- Graduated with honors, completing research on application of data science in educational contexts

# Data Science Projects

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## Bank Customer Segmentation

*K-means, GMM, PCA, R*

2025

*Statistical Modeling*

- Conducted advanced clustering analysis that identified 6 distinct customer segments with subscription rates varying from 2.2% to 48.6%
- Applied Principal Component Analysis, K-means clustering, and Gaussian Mixture Models for optimal segmentation
- Developed targeted marketing strategies based on segment characteristics, improving campaign efficiency by 30-40%
- Technologies: R, tidyverse, cluster, factoextra, ggplot2, corrplot

## Financial Sentiment Analysis

*NLP, Classification, Python*

2025

*Machine Learning*

- Analyzed financial texts using Natural Language Processing to classify sentiment as positive, negative, or neutral
- Achieved 69.3% accuracy with Logistic Regression for improved investment decision-making
- Implemented feature engineering techniques including TF-IDF vectorization and n-gram analysis
- Technologies: Python, scikit-learn, NLTK, pandas, matplotlib

## Bank Customer Churn Prediction

*XGBoost, Random Forest, Python*

2024

*Predictive Analytics*

- Developed predictive models (AUC: 0.866) using XGBoost, Random Forest, and Gradient Boosting Machine
- Identified key factors contributing to customer attrition and developed segment-specific retention strategies
- Projected 25-30% reduction in churn rate through implementation of targeted interventions
- Technologies: Python, scikit-learn, XGBoost, pandas, seaborn

## Credit Risk Classification

*Random Forest, Neural Networks, Python*

2024

*Risk Analysis*

- Developed machine learning models to predict loan defaults with 93.3% accuracy
- Employed Random Forest, Neural Networks, and Naive Bayes algorithms with feature importance analysis
- Identified optimal approval threshold for \$1.5M projected profitability improvement
- Technologies: Python, TensorFlow, scikit-learn, pandas, matplotlib

## Technical Skills

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**Programming Languages:** Python (pandas, NumPy, scikit-learn, TensorFlow, matplotlib, seaborn), R (tidyverse, dplyr, ggplot2, factoextra), SQL, MATLAB

**Machine Learning:** Supervised learning (classification, regression), Unsupervised learning (clustering, dimensionality reduction), Feature engineering, Model evaluation, Deep learning basics

**Data Analysis:** Statistical analysis, Hypothesis testing, Exploratory data analysis, A/B testing, Time series analysis, Predictive modeling

**Visualization:** Power BI, Tableau, matplotlib, seaborn, ggplot2, Interactive dashboards

**Databases:** PostgreSQL, MySQL, Database design, Query optimization

**Big Data:** Google Colab, Hadoop fundamentals, Apache Spark basics

**Development:** Git, GitHub, Markdown, Jupyter Notebooks, RMarkdown, Version control

**Languages:** Spanish (Native), English (B2 Conversational)

# Professional Development

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## Big Data

*Universidad Fidélitas*

- Studying big data technologies and applications, focusing on processing and analyzing large-scale datasets

2024 - In Progress

*Costa Rica*

## Artificial Intelligence & Data Analysis for Business

*ULACIT*

- Advanced training in AI applications for business intelligence and decision-making processes

2025 - In Progress

*Costa Rica*

## Professional Certification in Digital Marketing & Social Media

*Universidad Politécnica de Valencia*

- Developed skills in digital marketing strategies and social media analytics

2023

*Spain*