

Sebastian Ramirez Escobar

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SUMMARY

Recursive and passionate Data Scientist with foundations in machine learning, advanced analytics, and non-parametric statistics, applying innovative models and data-driven insights to solve complex problems. Committed to continuous learning and problem-solving, leveraging my skills in Python, deep learning, and predictive modeling to drive innovative decision-making and contribute to cutting-edge data science solutions that fuel organizational growth and innovation.

SKILLS

Programming Languages: Python, PySpark, SQL.

ML Frameworks: MLFlow, MLOps, TensorFlow, Keras, XGBoost, Catboost, AdaBoost, RandomForest, Isolation Forest, StatsModels, ARIMA, SARIMAX, Logistic Regression, SparkNLP, RFECV, K-Means++.

Cloud Services: AWS (Clusters, EC2, S3, EMRStudio, Sagemaker, IAM), Microsoft Azure: (Azure for ML, Fabric), Google AppScript.

App Frameworks, Automations and Model Deployment: FastAPI, Flask, GradIO, Streamlit, Selenium, n8n, RAGFlow.

Databases: MySQL, PostgreSQL, MongoDB, Vector DB (RAG), PineCone.

Data Manipulation and Analysis: NumPy, Pandas, Polars.

Versioning: Git (GitHub).

Tools: Excel (Macros), Microsoft 365, ArcGIS, GIS.

Visualization: matplotlib, seaborn, PowerBI with DAX, Looker Studio.

Soft Skills: Team player, problem-solving oriented, communication, leadership, attention to detail, resilience.

PROJECTS

Forex Trend Prediction with Machine Learning

Jan 2024 – Oct 2024

Master's Thesis Project

Python, XGBoost, CatBoost, CRISP-ML, QuantStats, Optuna, RFECV

- Developed predictive models for EUR/USD trends using ensemble algorithms (XGBoost. 0.72 F1-Score, CatBoost 0.67 F1-Score) with Optuna hyperparameter optimization
- Engineered 58+ financial features including volatility (ATR, VIX), momentum (RSI, MACD), and price transformations, achieving 3.6x feature-to-return correlation improvement
- Implemented 3-class labeling system (Up/Down/Hold) using entropy thresholds, reducing false signals by 32% through conservative trading strategy
- Integrated macroeconomic indicators (COT Report, S&P500) with technical analysis using walk-forward validation on 17-year EUR/USD data (2007-2024)
- Achieved Sharpe Ratio 1.46 (probabilistic) vs 1.01 (direct) with maximum drawdown reduction from -7.46% to -2.38% through quantile threshold strategies

Telegram Chatbot

July 2024 – Aug 2024

"LLM" Chatbot Project

Python, Flask, OpenAI, Wordpress API, MongoDB, Render

- Developed a sophisticated chat-based customer service application using Python and Flask, ensuring seamless user interaction and efficient handling of requests.
- Integrated multiple APIs including OpenAI GPT models and WooCommerce, enabling enhanced product recommendation capabilities and real-time product data retrieval.
- Utilized MongoDB for storing and managing conversation history, ensuring data persistence and efficient retrieval of user interactions.
- Implemented threading and timer mechanisms to monitor user activity and reset sessions, enhancing the overall user experience by ensuring timely assistance.
- Leveraged environment variables through dotenv for secure API key management and streamlined deployment processes, ensuring a secure and maintainable codebase.

Efficient Management of Passenger Flow in the Medellín Metro

Aug 2023 – Dec 2023

Machine Learning, A Predictive "ARIMA" Approach:

Python, Flask, Hugging Face, statsmodels

- Applied "ARIMA" models to forecast hourly and daily user flow, improving predictive accuracy.
- Implemented Statistical Analysis to identify key variables for feature engineering.
- Identified key traffic patterns and addressed data gaps, enhancing the reliability of forecasts.
- Developed dashboards in PowerBI for real-time visualization, enabling efficient resource planning and maintenance scheduling

EXPERIENCE

Data Entry Specialist - Systematizer

Aug 2024 – Dec 2024

FUNDARMAN

Medellín, Colombia

- Automated the data reporting process to ICBF developing a solution with Selenium.
- Enhanced data accuracy by verifying spelling with SpaCy NER Models.

Data Scientist

July 2023 – Dec 2023

ASMETCO

Medellín, Colombia

- Optimized workflows and decision-making through advanced data science solutions.
- Led real-time database integration and quality assurance using AppSheet and AppScript.
- Developed a live Looker Studio dashboard, providing actionable insights for ICBF.
- Enhanced data accuracy and operational efficiency with real-time reporting.

Web Developer

Jan 2023 – March 2023

Colegio Mayor de Antioquia

Medellín, Colombia

- Developed a web portal to promote the labor techniques project in Medellín's commune 1.
- Utilized Python, Flask, and MariaDB for backend development, ensuring security and performance.
- Integrated WordPress and Elementor for a user-friendly interface and content management.

Web Developer

Jan 2021 – March 2022

Licores Gallo SAS

Medellín, Colombia

- Created a portal for Importaciones Gallo SAS, supporting operations in Miami and Medellín.
- Used WordPress, Elementor, and WooCommerce for e-commerce integration.
- Enhanced the company's online presence and streamlined business processes.

EDUCATION

Universidad Eafit

Medellin, Colombia

MSc. in Data Science and Analytics - GPA: 4.63

July 2023 – April 2025

Microsoft - IDATA - Universidad Eafit - Sapiencia

Medellin, Colombia

Data Scientist - Foundations (230 hours)

July 2022 – Dec 2022

Universidad Cooperativa de Colombia

Medellin, Colombia

B.S. in Civil Engineering

Aug 2014 – March 2020

CERTIFICATIONS

- EFSET English C1 - Certificate
- Introduction to Backend Development META - Certificate
- Microsoft Azure Machine Learning for Data Scientists