Rafael A. Espinoza
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EXECUTIVE SUMMARY

Data Analyst with hands-on experience in data analysis, visualization, and machine learning. Skilled in Python, SQL, and Tableau, with a track record of extracting insights from complex datasets and building predictive models. First-generation college graduate and native Spanish speaker, adept at leveraging data to drive decision-making and optimize performance.

EDUCATION

Boston College *August 2020 - May 2024*

- *Bachelor of Science in Computer Science, Minor in Mathematics*
- Relevant Courses: Algorithms, Computer Vision, Object-Oriented Programming, Large-Data Processing

PROJECT EXPERIENCE

Smart Cabbie: Chicago Taxi Analysis

- Queried and extracted Chicago taxi trip data using SQL in Google BigQuery, then performed ETL processes with Python (Pandas) to clean, transform, and segment data for analysis.
- Designed interactive Tableau dashboards to visualize key metrics, including revenue trends, demand patterns, geospatial efficiency, and tipping behavior, enabling data-driven strategic planning.
- Engineered new KPIs, such as revenue per mile and tip percentage, to assess trip profitability, and provided strategic recommendations, including optimizing fleet placement and adapting operations to seasonal trends.

Distributed Graph Matching App

- Developed a Scala-based application using Apache Spark for distributed computing to efficiently solve graph matching problems in large, unweighted social graphs, focusing on optimal matchings.Optimized multiple algorithms (Path Growing, Blossom, Greedy) with streaming capabilities, enhancing matching accuracy to 94% for the largest dataset and improving efficiency.
- Enhanced the Path Growing Algorithm by shifting to streaming data processing, reducing memory usage and accelerating the processing of 117 million edges to just 84.24 seconds, achieving a 30% performance improvement.

Spootify

- Engineered a Python application leveraging the Spotify API to retrieve and preprocess song data (e.g., tempo, energy, valence) using Pandas, transforming raw data into a format suitable for analysis and feature extraction.
- Utilized sklearn's RandomForestClassifier to build and train a predictive model on labeled data, achieving 82% accuracy in mood prediction, and provided insights into user mood based on recently played songs.
- Developed detailed data visualizations with Matlab, exploring the relationship between song features and mood to offer a deeper understanding of the user's music preferences and sentiment trends.

PROFESSIONAL EXPERIENCE

Advanced Paperworks Inc *Design Engineer Intern* *June 2021 – August 2021*

- Collaborated with engineers to update and improve production designs using AutoCAD, reducing quality control errors by 20%.
- Utilized Microsoft Access to manage linked forms for inventory, quality control, and part management, streamlining operational efficiency.

Boston College Law School *Audio Visual Technician* *August 2022 – May 2024*

- Configure and disassemble audio and visual equipment for law school functions accommodating audiences of up to 100 attendees. Proficiently diagnose and rectify technical problems with computer, projector, and speaker systems.
- Communicate and delegate hardware and maintenance requests across 3 different departments.

ACTIVITIES

Computer Science Society *Marketing Team Member and Sponsorship Coordinator* *Fall 2021 – May 2024*

- Developed and implemented social media advertising strategy for school events, resulting in an increased attendance from the student body.
- Secured five sponsorships for club events, including an annual hackathon, by building relationships with Boston College alumni and corporate sponsors.

TECHNICAL SKILLS

Coding Languages - Python, SQL, Java, HTML, and CSS
Technologies - Tableau, Excel, Apache Spark, Matlab, PyTorch, NumPy, Pandas, JSON, AutoCAD, Google Cloud, BigQuery
Certifications - Career Essentials in Data Analysis (Microsoft, Oct 2024), Advanced SQL for Data Scientists (LinkedIn, Oct 2024), Python Data Structures and Algorithms (LinkedIn, Feb 2023), Tableau Essential Training (LinkedIn, Oct 2024)