

Samuel Ramirez

Portfolio

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<https://github.com/samuelramirez21/Projects>



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Check out my LinkedIn profile: <https://www.linkedin.com/in/samuel-ramirez-aa674a269/>



My Profile

ABOUT ME

My name is Samuel Ramirez and I am a problem solver who is hardworking, detail-oriented, and has a passion for the fields of Actuarial Science and Data Analytics.

Some key traits of mine include efficiency, determination, reliability, and resourcefulness. Throughout my academic and professional journey, I have worked on a wide variety of projects in various fields such as Actuarial Science, Data Science, Finance, Statistics, Economics, and Mathematics. Displayed in this portfolio are a select few of these projects of which I have worked meticulously on.

Chain-Ladder vs. Bornhuetter-Ferguson: Worker's Comp

<https://github.com/samuelramirez21/Projects/blob/main/Chain-Ladder%20vs.%20Bornhuetter-Ferguson%20-%20Workers'%20Compensation.pdf>

Analyzed the reliability of Chain-Ladder versus Bornhuetter-Ferguson reserving methods for the workers' compensation line of business using cumulative paid and incurred loss data from U.S. property and casualty insurers. Developed multiple loss development factor models, reconciled both types of loss data, and computed Mean Absolute Errors (MAE) at the company and aggregate levels. Findings indicated that Bornhuetter-Ferguson generally performed better, though Chain-Ladder remained competitive.

Music Rank Project

<https://github.com/samuelramirez21/Projects/blob/main/Music%20Rank%20Project.pdf>

Analyzed song popularity drivers across Spotify, Apple, Deezer, and Shazam. Employed advanced modeling techniques (Boosting, Lasso, PCA) to assess and quantify factors influencing rankings, yet found minimal explainability (~4%). Energy, acousticness, and speechiness emerged as key predictors, but many influential variables remained unknown. Demonstrated high dimensionality and unpredictability, highlighting that popular success is largely unexplained and elusive.

SKILLS

Excel: 9.1 out of 10

SQL: 9.7 out of 10

Python: 9.5 out of 10

R: 8.6 out of 10

Tableau: 9.0 out of 10

PowerBI: 8.8 out of 10

Spark: 9.1 out of 10

Hadoop: 9.3 out of 10

HDFS: 9.4 out of 10

Hive: 9.3 out of 10

Linux: 9.2 out of 10

PowerShell: 9.2 out of 10

AWS: 8.6 out of 10

Java: 8.2 out of 10

Scala: 8.7 out of 10

MS Word: 9.9 out of 10

PowerPoint: 9.8 out of 10

Stock Trading Strategy

<https://github.com/samuelramirez21/Projects/blob/main/Stock%20Trading%20Strategy.ipynb>

For this project I chose 10 stocks from three different sectors: Consumer Services, Financial, and Energy Minerals. I used historical data from 2020 to decide which short and long moving strategy I wanted to use for each sector. Once I chose a strategy, I then tested it out on the stocks for the years 2021 and 2022 using an initial capital of \$100,000. Overall I gained a total profit of \$22,469.

Analyzing Gender Disparity

<https://github.com/samuelramirez21/Projects/blob/main/Analyzing%20Gender%20Disparity.ipynb>

For this project I analyzed gender age, job, and country disparities in the STEM field. I found that there were far more males compared to females in these jobs. I also found that males earned significantly more on average than females as well. As a result of this analysis, I concluded that efforts should be made to invite other gender groups to come into these types of fields and the salary for these gender groups should be increased. Efforts should also be made to increase salaries in countries with a low median salary such as in Nigeria or Egypt.

Data Mining Competition

<https://github.com/samuelramirez21/Projects/blob/main/Data%20Mining%20Competition.ipynb>

I participated and won first place in a Kaggle competition to see who could build a model that could achieve the highest accuracy on the test data. I used an MLP Classifier and achieved a score of .98563.

Generating Word Embeddings

<https://github.com/samuelramirez21/Projects/blob/main/Word%20Embeddings.ipynb>

For this project I used 132,935 abstracts from biomedical publications in order to generate eight embeddings. Using these generated embeddings, I created four meaningful examples of extrinsic testing. For example, I entered the pair of words 'negative' and 'proton'. I then entered the word 'electron' and I used the embeddings to generate a list of words that would be best suited for this scenario. The word that was generated with the highest accuracy was 'positive'.

Data Mining in Videogame Sales Dataset

<https://github.com/samuelramirez21/Projects/blob/main/Data%20Mining%20in%20Videogame%20Sales.ipynb>

In this project I analyzed a Videogame Sales dataset with data mining techniques such as decision tree classifiers and k-means clustering. I used Python to pre-process and analyze the data. Through my analysis I made several discoveries. For example, I found that Nintendo had a trend of having poor third party support, but this changed with the Wii and DS. I also learned that Sony has high third party support and focuses more on putting out as much games as possible on their system.

Titanic Dashboard

<https://github.com/samuelramirez21/Projects/blob/main/Titanic%20Dashboard.pdf>

I created six data visualizations using Excel related to passenger statistics on the Titanic and combined them to create a Dashboard. This was created using a multitude of essential Excel features such as charts, graphs, pivot tables, sorting, filtering, IF formulas, VLOOKUP, etc.

Pokémon Dashboard

<https://github.com/samuelramirez21/Projects/blob/main/Pokemon%20Dashboard.pdf>

For this project I utilized Tableau to create a Pokémon Dashboard containing six data visualizations pertaining to interesting Pokémon battle statistics. These visualizations determined which Pokémon types were the best offensively and defensively as well as which types were the quickest and had the overall highest statistics. Key findings of this dashboard were the ground type had the highest offensive statistics, the steel type had the best defensive statistics, the flying type had the highest speed statistics, and the dragon type had the highest overall battle statistics.

PERSONAL

During my undergraduate years in the University at Buffalo I was an active member of InterVarsity Christian Fellowship where I enjoyed engaging with the student population and gauging interest in chapter membership while also attending winter and summer conferences. I was also an active member of the Pokémon Club where I was nominated and voted in as secretary for the 2017-2018 academic year and attended weekly meetings where we would participate in Pokémon tournaments. One of my hobbies include attending the gym with a focus on sustaining both my physical and mental health. I also enjoy going to the theater with my friends and keeping up with the Marvel Cinematic Universe. I am also a fan of Game of Thrones and have thoroughly enjoyed its latest installment: House of Dragons.