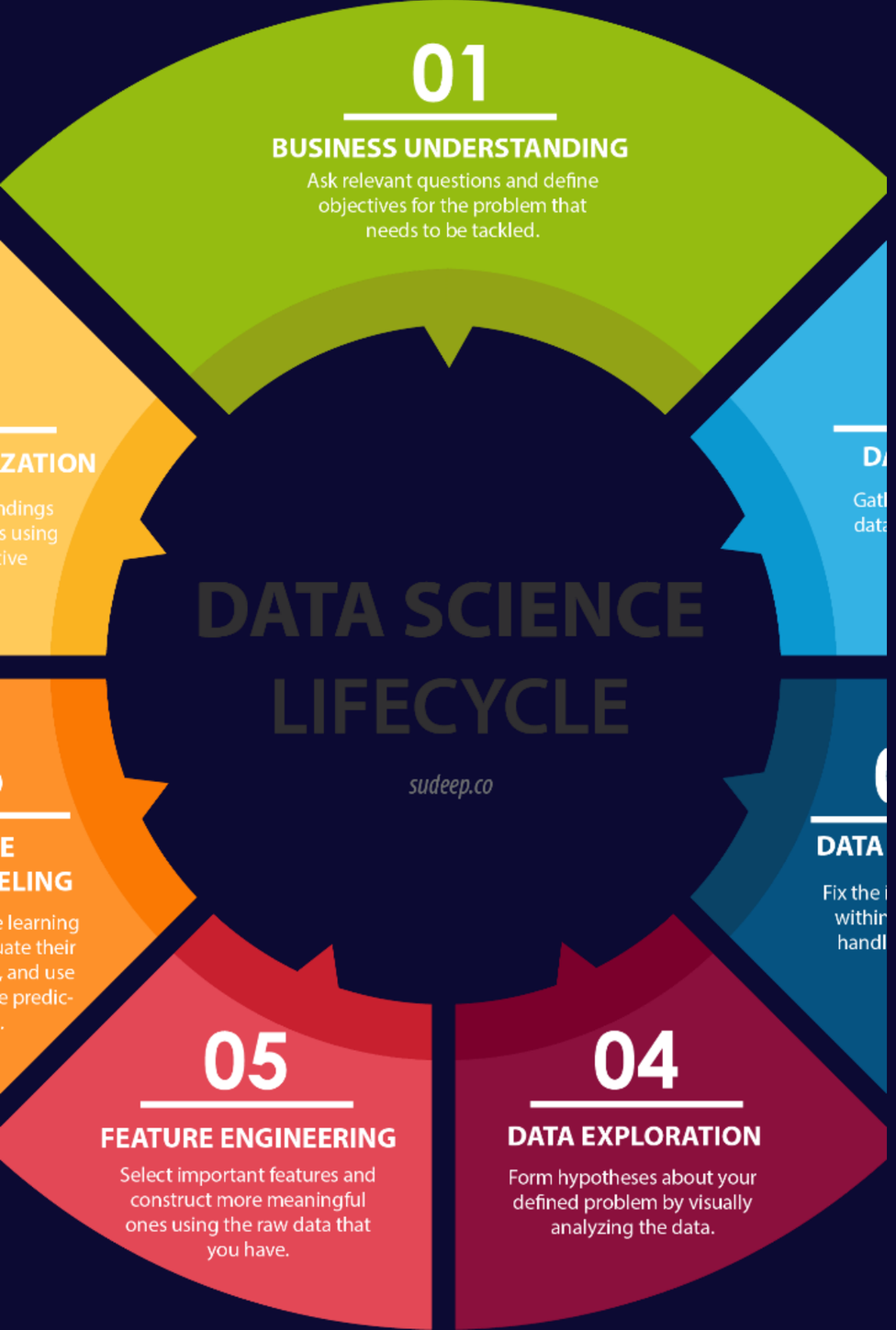


A Story of All My Data Science Journey

I have traveled a long way in my data science journey, and in this presentation, I take you through the different phases I went through, and what I learned in each of them.

by Mufarreh Alshehri

Executive Summary

1 Problem

What is the business problem you are trying to solve?

2 Solution

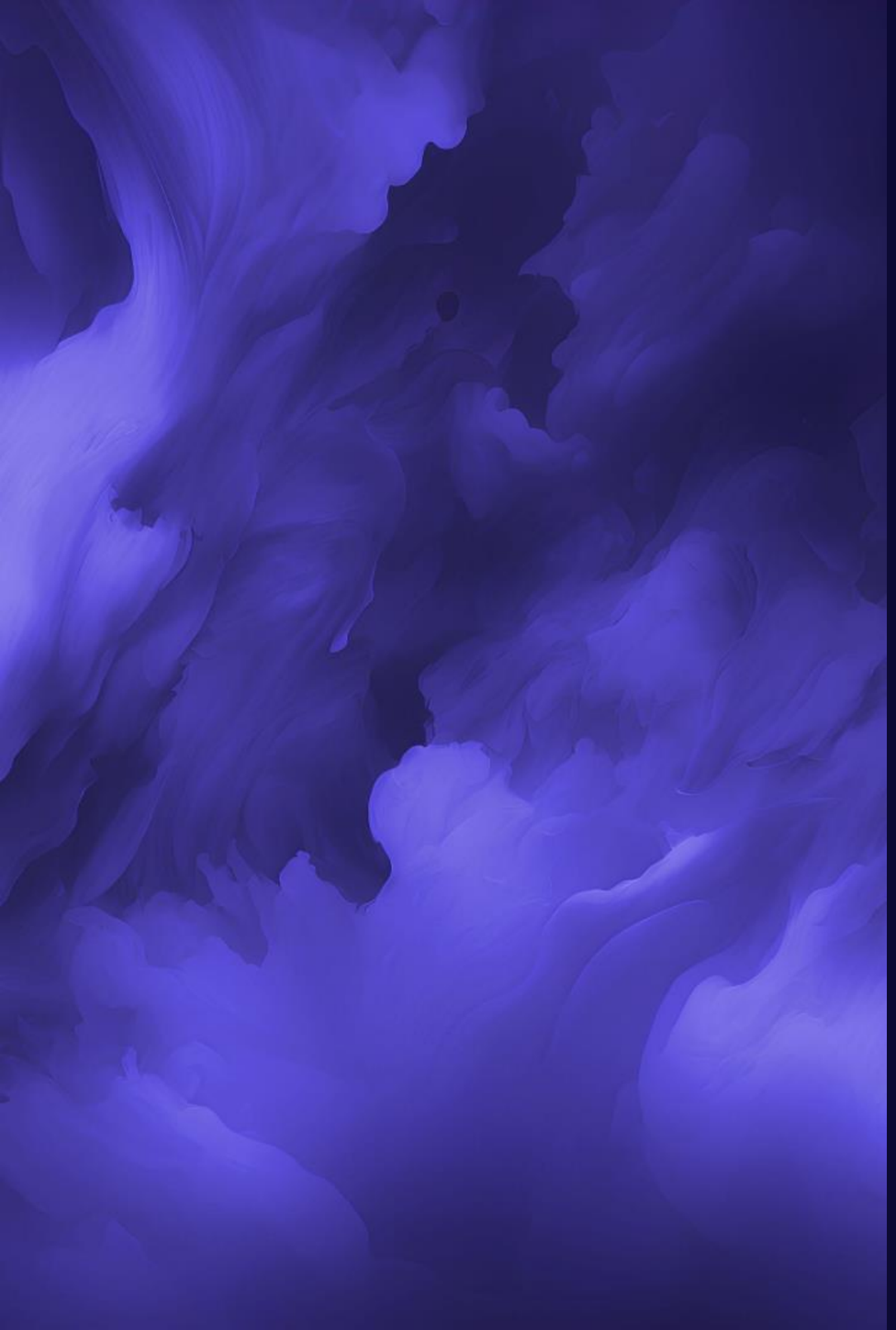
What data do you have, and how are you using it to solve the problem?

3 Results

What did you learn, and what are the implications for the business?

4 Recommendations

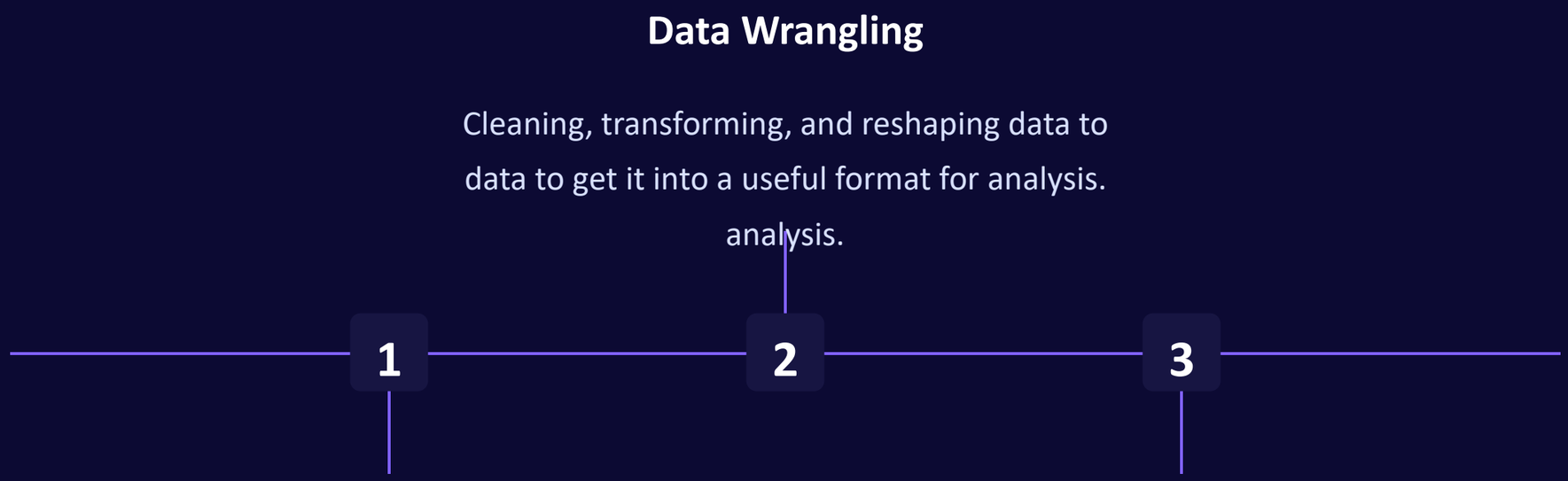
What are the next steps, and what are the implications of your work for work for the business?



Introduction

The data science journey starts with understanding the business problem that you are trying to solve. In this section, I will discuss the problem I was trying to solve, and how I went about solving it.

Data Collection and Data Wrangling Methodology



Data Wrangling

Cleaning, transforming, and reshaping data to data to get it into a useful format for analysis. analysis.

Data Collection

Gathering data from various sources, including including web scraping, APIs, and databases. databases.

Challenges

Dealing with missing, incomplete, and inconsistent data.

EDA and Interactive Visual Analytics Methodology

Exploratory Data Analysis

Understanding the patterns patterns and relationships relationships in the data, data, using statistical and and visualization techniques.

Interactive Visual Analytics

Building interactive visualizations to explore the data and communicate insights.

Tools

Python libraries like Matplotlib, Seaborn, Bokeh, Bokeh, and Plotly; and web web technologies like HTML, CSS, and JavaScript. JavaScript.

Predictive Analysis Methodology

1

Feature Engineering

Extracting meaningful features from the data, using domain knowledge and automated techniques.

2

Model Selection

Choosing the appropriate algorithm for the the problem, and and optimizing its its hyperparameters.

3

Evaluation

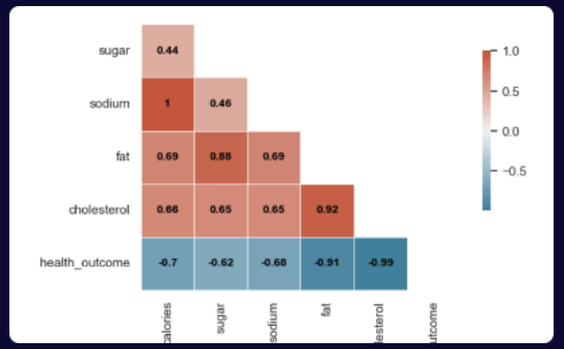
Using appropriate appropriate metrics to evaluate the performance of the model, and tuning it as necessary.

4

Deployment

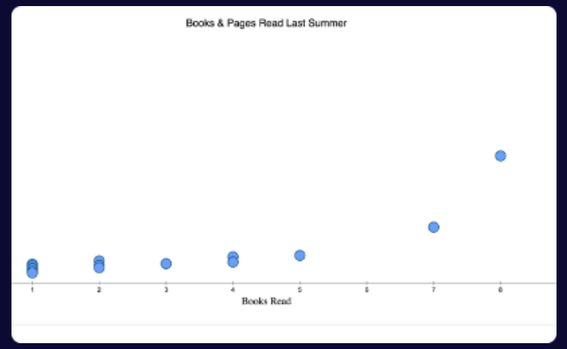
Putting the model model into production, and monitoring its performance over over time.

EDA with Visualization Results



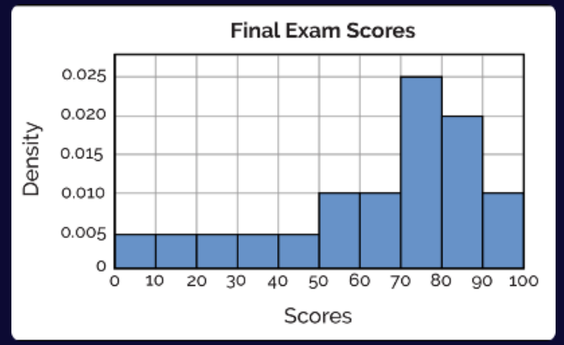
Heatmap

Visualization of correlations.



Scatterplot

Visualization of relationships.



Histogram

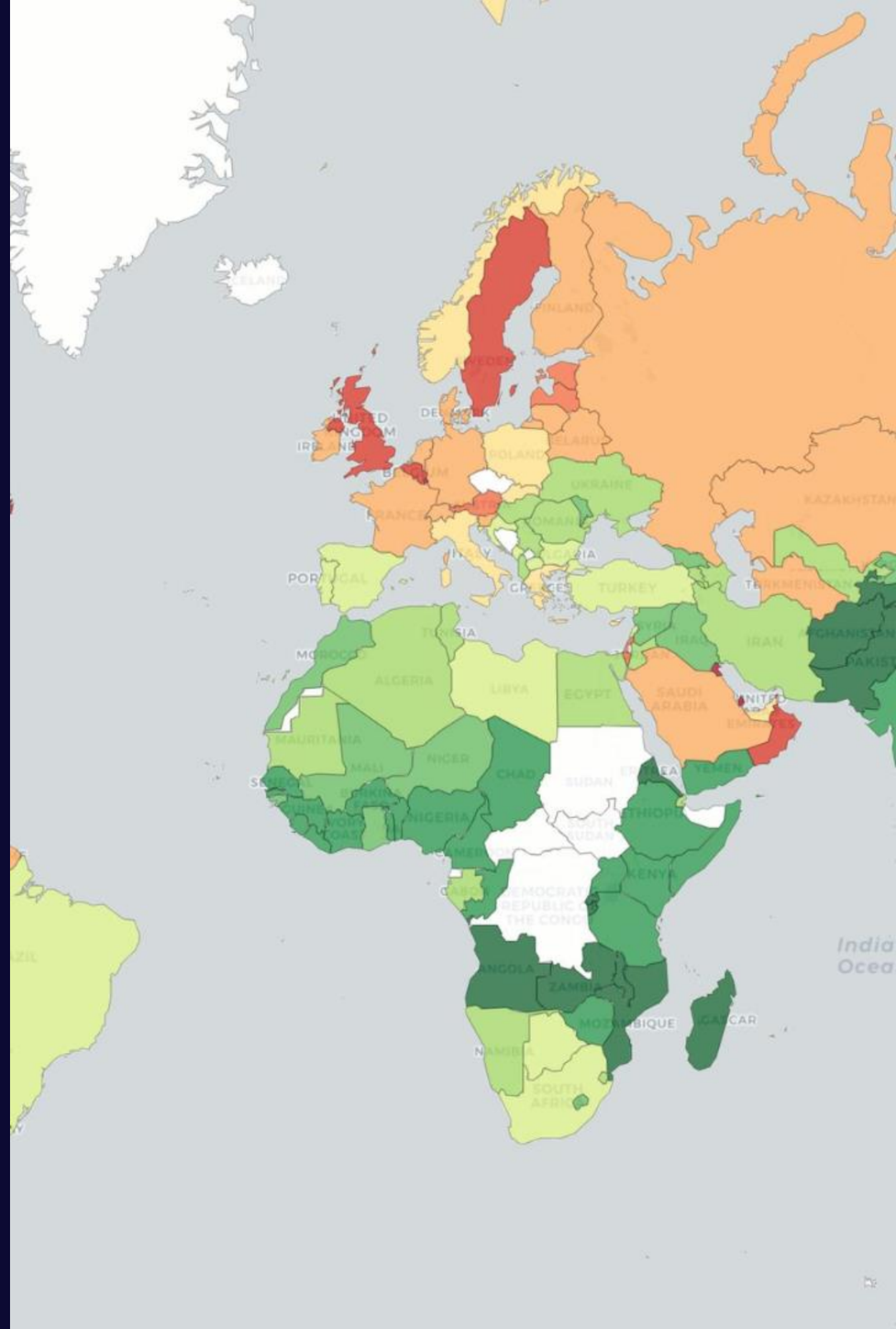
Visualization of distributions.

Exploratory Data Analysis with with SQL Results

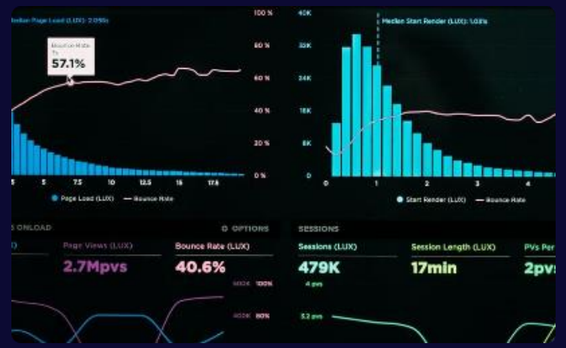
Our data analysis team uses SQL to extract valuable insights from complex complex datasets. By performing exploratory data analysis, we uncover patterns uncover patterns and trends that help us make informed decisions. From From identifying key performance indicators to optimizing business processes, processes, our data analysis services have helped many clients achieve their their goals.

Interactive Map with Folium Results

Visualization of geo-location data, with markers, pop-ups, and choropleth maps.

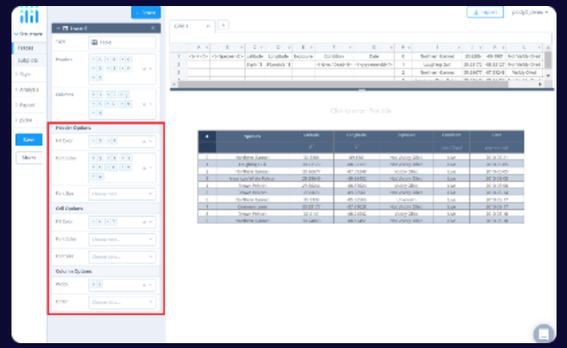


Plotly Dash Dashboard Results



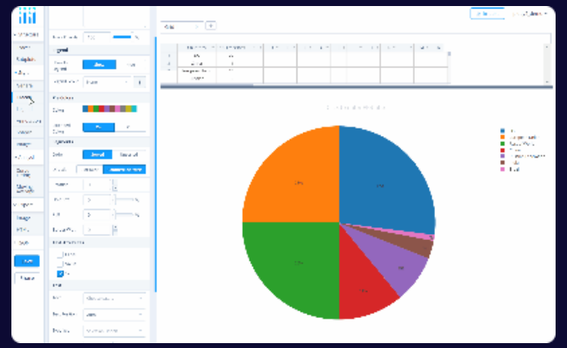
Graph

Visualization of sales data, with with filters, drill-downs, and comparisons.



Table

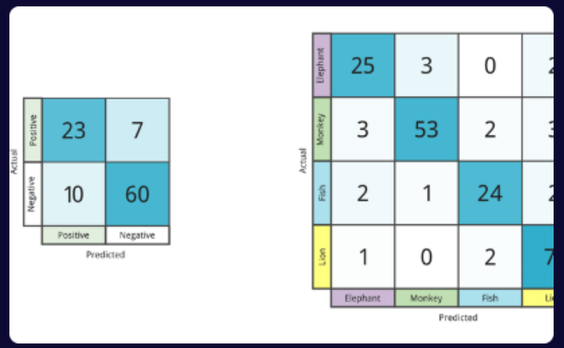
Tabular view of sales data, with with sorting, filtering, and paging.

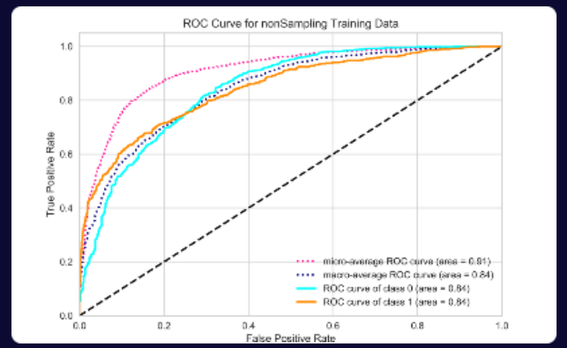


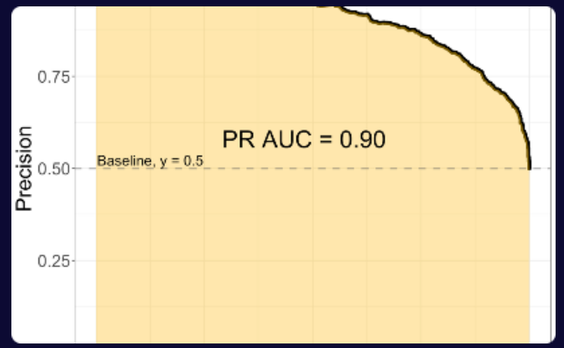
Pie Chart

Visualization of market share share data, with hover-over effects and legends.

Predictive Analysis (Classification) Results Results







Confusion Matrix

Evaluation of the performance performance of the classification model, using metrics like accuracy, precision, precision, and recall.

ROC Curve

Visualization of the trade-off off between true positives and and false positives, and the area under the curve.

Precision-Recall Curve Curve

Visualization of the trade-off off between precision and recall, and the area under the the curve.

Conclusion

In conclusion, I learned a lot from my data science journey, from the challenges of data collection and collection and wrangling, to the insights gained from exploratory data analysis and interactive visual visual analytics, to the predictive power of machine learning. The tools and techniques I used opened up opened up opportunities for me to better understand and make decisions about the data.