

Portofolio

Introduction:

As a Data Science Apprentice at Verizon, I have gained expertise in leveraging AI technology to drive impactful outcomes. With a strong background in Python, R, SQL, statistics, and machine learning, I have contributed to various projects in the telecommunications industry. My key responsibilities include data analysis and project management, focusing on churn data, coverage data analysis, and network performance and ticket resolution.

Project 1: Churn Data Analysis

Introduction: In this project, my role was to analyze churn data and identify key factors influencing customer attrition. The objective was to gain insights into customer behavior and develop strategies to reduce churn rates. The project involved collaborating with cross-functional teams and stakeholders to gather data requirements and define the project scope.

Competencies Demonstrated:

- Knows the principles of the data life cycle and the steps involved in carrying out routine data analysis tasks.
- Understands how to analyze data sets, taking into account different data structures and database designs.
- Able to collate and interpret qualitative and quantitative data and convert it into infographics, reports, tables, dashboards, and graphs.
- Demonstrates resilience by viewing obstacles as challenges and learning from failure.
- Demonstrates an ability to adapt to changing contexts within the scope of a project and the data analyst role.

Action:

Planning: I planned the project by creating a project brief that outlined the objectives, deliverables, and timeline. I utilized various tools and techniques such as Python, SQL, and statistical analysis methods. The choice of these tools was based on their effectiveness in handling large datasets and performing advanced analytics.

Data Preparation: To gather and combine the datasets, I accessed relevant data sources within Verizon's systems and utilized external data as necessary. The purpose of the data collected was to identify patterns and trends related to customer churn. I conducted data cleaning processes to remove inconsistencies and handle missing values. Data quality checks were performed to ensure accuracy and completeness.

Analysis & Modeling: I completed the analysis by applying statistical techniques, such as logistic regression and decision tree analysis, to identify the significant predictors of churn. I also created visualizations, including dashboards and graphs, to effectively communicate the findings. The choice of charts and graphs was based on their ability to convey the insights clearly.

Result: Through this project, I achieved a deeper understanding of the factors contributing to customer churn and developed data-driven strategies to mitigate it. The insights obtained from the analysis were shared with stakeholders through presentations and reports. The implementation of these strategies led to a reduction in churn rates and improved customer retention, resulting in a positive impact on the business.

Knowledge: The successful completion of this project demonstrates my knowledge and application of various competencies, including understanding the data life cycle, analyzing datasets, applying statistical methodologies, and effectively communicating insights to stakeholders. I acquired this knowledge through formal training, self-study, and practical experience in data analysis and data science principles.

Project 2: Coverage Network Data Analysis

In this project, I played a key role in analyzing coverage data to assess network performance and identify areas for improvement. My responsibilities included gathering and analyzing data related to signal strength, network availability, and customer complaints. The scope of the project involved evaluating the coverage quality across different geographical regions and determining the impact on customer experience.

Competencies Demonstrated:

- Knows the fundamentals of data structures, database system design, implementation, and maintenance.
- Understands how to assess the impact of user experience and domain context on data analysis activities.
- Able to apply statistical methodologies to data analysis tasks.
- Demonstrates an ability to collaborate and communicate with a range of internal and external stakeholders using appropriate styles and behaviors.
- Demonstrates an ability to adapt to changing contexts within the scope of a project, the direction of the organization, or the Data Analyst role.

Action:

Planning: To plan the project, I worked closely with the network operations team to understand the objectives and define the metrics for coverage analysis. I utilized tools such as GIS (Geographic Information System) software and SQL to gather relevant data and perform spatial

analysis. Research on industry best practices and benchmarking studies helped inform the analysis approach.

Data Preparation: I gathered coverage data from various sources, including network performance logs and customer feedback. The collected data was cleaned, validated, and transformed into a suitable format for analysis. Data quality checks were conducted to ensure accuracy and reliability.

Analysis & Modeling: I conducted spatial analysis using GIS software to visualize coverage gaps, identify areas with poor signal strength, and assess network availability. Statistical analysis techniques, such as regression analysis, were applied to understand the factors influencing coverage performance. I produced visualizations and reports that included maps, charts, and graphs to communicate the findings effectively.

Result: Through this project, I gained insights into coverage patterns and performance across different regions. By identifying areas with coverage issues, I was able to recommend targeted infrastructure improvements, antenna adjustments, and network optimization strategies. The implementation of these recommendations resulted in improved coverage quality, enhanced customer satisfaction, and increased network reliability.

Knowledge: This project demonstrated my knowledge and application of various competencies, including data structures, statistical methodologies, spatial analysis, and effective communication with stakeholders. I acquired this knowledge through a combination of formal training, hands-on experience, and continuous learning in data analysis and network performance evaluation.

Project 3: Network Performance and Tickets Resolution

In this project, I was responsible for analyzing network performance data and resolving customer tickets related to network issues. The objective was to identify performance bottlenecks, optimize network resources, and improve the overall quality of service. The project involved collaborating with network engineers, customer support teams, and other stakeholders to address network performance challenges.

Competencies Demonstrated:

- Knows the principles of descriptive, predictive, and prescriptive analytics.
- Able to undertake customer requirements analysis and implement findings in data analytics planning and outputs.
- Understands how to use a range of analytical techniques, such as data mining and time series forecasting, to identify trends and patterns in data.
- Demonstrates initiative and resourcefulness in problem-solving.
- Works independently and collaboratively.

Action:

Planning: To plan the project, I conducted meetings with network engineers and customer support teams to understand their requirements and challenges. Based on the input, I developed an analytics plan that included data collection, performance metrics analysis, and ticket resolution strategies. The choice of tools, such as Python, SQL, and data visualization libraries, was made to facilitate efficient data analysis and reporting.

Data Preparation: I collected network performance data from various sources, including network monitoring tools and ticketing systems. The data was cleaned, transformed, and integrated into a centralized database for analysis. Quality checks were performed to ensure data accuracy and consistency.

Analysis & Modeling: I conducted in-depth analysis of network performance data using statistical techniques, time series forecasting, and data mining approaches. This involved identifying performance bottlenecks, analyzing trends, and detecting anomalies that could impact network quality. I developed predictive models to forecast network performance and proactively address potential issues. Additionally, I analyzed customer tickets to identify recurring patterns and develop strategies for efficient ticket resolution.

Result: Through this project, I was able to identify critical network performance issues and implement targeted solutions. By resolving customer tickets promptly and addressing network bottlenecks, I contributed to improved customer satisfaction and minimized service disruptions. The implementation of data-driven strategies resulted in optimized network resources, reduced ticket resolution time, and enhanced overall network performance.

Knowledge: This project showcased my proficiency in various competencies, including descriptive, predictive, and prescriptive analytics, customer requirements analysis, analytical techniques such as data mining and time series forecasting, and maintaining a productive and secure working environment. I acquired this knowledge through formal training, hands-on experience, and continuous professional development in data analysis and network performance management.

Overall, these three projects highlight my expertise in leveraging data analysis techniques and tools to drive strategic decision-making, optimize network resources, and improve operational efficiency in the telecommunications industry. Through collaborative efforts and effective communication with stakeholders, I successfully delivered actionable insights and contributed to positive business outcomes.