DatriMatrix

MLZilla Case Problem

Case Study: Analyzing Customer Churn for a Telecom Client

Background: A leading telecom company is facing significant customer attrition over the past two years. Despite substantial investments in enhancing customer satisfaction and adopting cutting-edge technologies, the churn rate remains alarmingly high. This persistent challenge threatens the company's market share and revenue growth in an increasingly competitive landscape. The company seeks actionable insights into why its customers are leaving and how it can retain them effectively. The consulting firm has been tasked with conducting an in-depth analysis of the provided dataset to uncover the root causes of customer churn.

This analysis will involve differentiating between internal factors such as service quality and pricing strategies, and external factors like market trends and competitive pressures. Participants are expected to analyze customer demographics, service usage patterns, and billing information, and leverage machine learning models to predict churn probability and identify high-risk customer segments. By integrating data-driven insights with business frameworks, participants will provide targeted recommendations to address churn and improve retention.

Column Name	Description
customerID	Unique identifier for the customer.
gender	Gender of the customer (Male/Female).
SeniorCitizen	Indicates if the customer is a senior citizen (0 = No, 1 = Yes).
Partner	Indicates if the customer has a partner (Yes/No).
Dependents	Indicates if the customer has dependents (Yes/No).
tenure	Number of months the customer has been with the company.
PhoneService	Indicates if the customer has phone service (Yes/No).
MultipleLines	Indicates if the customer has multiple lines (Yes/No/No phone service).
InternetService	Type of internet service (DSL/Fiber optic/No).
OnlineSecurity	Indicates if the customer has online security (Yes/No/No internet service).

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OnlineBackup	Indicates if the customer has online backup (Yes/No/No internet service).
DeviceProtection	Indicates if the customer has device protection (Yes/No/No internet service).
TechSupport	Indicates if the customer has tech support (Yes/No/No internet service).
StreamingTV	Indicates if the customer has streaming TV service (Yes/No/No internet service).
StreamingMovies	Indicates if the customer has streaming movie service (Yes/No/No internet service).
Contract	Type of contract the customer is on (Month-to-month/One year/Two year).
PaperlessBilling	Indicates if the customer uses paperless billing (Yes/No).
PaymentMethod	Payment method used by the customer (e.g., Electronic check, Mailed check, Credit card, etc.).
MonthlyCharges	Monthly charges incurred by the customer.
TotalCharges	Total charges incurred by the customer.
Churn	Indicates if the customer has churned (Yes/No).
CustomerLifetimeValue	Estimated revenue the customer will bring over their lifetime.
CustomerSatisfactionScore	Customer satisfaction score (1-10) based on surveys.
NetPromoterScore	Customer loyalty score (-100 to 100).
AverageCallDuration	Average duration of calls (in minutes) per month.

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Column Name	Description
NumberOfComplaints	Total number of complaints registered by the customer.
PreferredContactMethod	Customer's preferred communication channel (Email/SMS/Phone).
LastInteractionDate	Date when the customer last contacted support.
PromotionalOffersUsed	Number of promotional offers availed by the customer.
BillingCycle	Day of the month the billing cycle begins.
NumberOfDependents	Number of dependents associated with the customer.