Telecom Customer Churn

Abstract:

Churn prediction consists of detecting which customers are likely to cancel a subscription to a service based on how they use the service. Individualized customer retention is difficult because businesses usually have a lot of customers and cannot afford to spend much time on one. The costs would be too high and would outweigh the extra revenue. However, if you could predict in advance which customers are at risk of leaving, you could reduce customer retention efforts by directing them solely toward such customers. Being able to predict churn based on customer data has proven extremely valuable to big telecom companies

Problem Statement:

Find out the most striking behaviour of customers through EDA and later on use some of the predictive analytics techniques to determine the customers who are most likely to churn.

Dataset Information:

Customers who left within the last month – the column is called Churn Services that each customer has signed up for – phone, multiple lines, internet, online security, online backup, device protection, tech support, and streaming TV and movies Customer account information – how long they've been a customer, contract, payment method, paperless billing, monthly charges, and total charges Demographic info about customers – gender, age range, and if they have partners and dependents

Variable Description:

Column	Description
customerID	customer ID
gender	Whether the customer is a male or a female
SeniorCitizen	Whether the customer is a senior citizen or not
Partner	Whether the customer has a partner or not
Dependents	Whether the customer has dependents or not

tenure	Number of months the customer has stayed with the company
PhoneService	Whether the customer has a phone service or not
MultipleLines	Whether the customer has multiple lines or not
InternetService	Customer's internet service provider
OnlineSecurity	Whether the customer has online security or not
OnlineBackup	Whether the customer has online backup or not
DeviceProtection	Whether the customer has device protection or not
TechSupport	Whether the customer has tech support or not
StreamingTV	Whether the customer has streaming TV or not
StreamingMovies	Whether the customer has streaming movies or not
PaymentMethod	The customer's payment method
Contract	The contract term of the customer
PaperlessBilling	Whether the customer has paperless billing or not
MonthlyCharges	The amount charged to the customer monthly
TotalCharges	The total amount charged to the customer
Churn	Whether the customer churned or not

Scope:

- Exploring insights about customer behaviour
- Data Pre-processing
- Training multiple classification algorithms to predict customer churn
- Evaluating the model with various metrics like Accuracy, AUC ROC, Precision, etc. and improve the score using statistical analysis over time

Learning Outcome:

The students will get a better understanding of how the variables are linked to each other and build a predcitive models. They will also learn about various performance

measures of classification models and should be able to improve these scores by taking the necessary step.