ConnecTTel Customer Churn Prediction Project

This project seeks to address the issue of customer churn encountered by ConnectTel Telecom Limited, a prominent telecommunications company. The goal is to improve customer retention through the utilization of advanced analytics and machine learning methods, allowing for precise churn prediction and the subsequent implementation of focused retention tactics. The project is driven by the objective of sustaining a competitive advantage in the dynamic telecommunications industry.

Steps Taken for Churn Analysis:

Data Collection: I started by collecting important customer details, their service subscriptions, and their past engagement with the company.

Exploratory Data Analysis (EDA):

I investigated the data to understand how key features are distributed, find patterns, and discover potential insights, by conducting univariate, bivariate and multivariate analysis.

Machine Learning Model Development:

I made and trained a machine learning model to predict churn, using algorithms like Logistic Regression, Random Forest, and Decision Tree.

Model Evaluation and Optimization:

I thereafter checked how well the model performed using metrics such as accuracy, precision, recall, and F1-score.

Retention Strategies:

Using the predictive analytics about who might churn, measures are highlighted to be taken into action specific plans to keep customers from churning.

Challenges Encountered during the Analysis

Data Quality and Missing Values: I had to first clean and preprocess data that was missing or inconsistent. And some outliers were discovered in the data.

Model Adoption: Ensure that the best machine learning models are adopted because some of these ML models' performances are somehow close in some respect. Logistic Regression was later adopted after careful consideration.

Summary: ConnectTel Limited should consider its business goals and the potential impacts of false negatives and false positives to determine the most important metrics. If the cost of missing a customer who will churn is high, emphasizing recall might be more important. If precision is a priority to avoid unnecessary retention efforts, then minimizing false positives is crucial.