PROJECT PROPOSAL

SyriaTel Customer Churn

Problem statement:

The problem we aim to address in this project is predicting customer churn in a telecom dataset. By analyzing customer data such as usage patterns, demographics, and customer service interactions, we aim to develop a predictive model that can accurately identify customers who are likely to churn. This model will enable telecom companies to proactively intervene and implement retention strategies to reduce churn rates.

Objectives:

1. Explore and preprocess the dataset: Perform data cleaning, handle missing values, encode categorical variables, and perform feature engineering if necessary.

2. Conduct exploratory data analysis (EDA) to gain insights into the factors influencing churn.

3. Develop predictive models: Experiment with various machine learning algorithms such as logistic regression, random forests, and gradient boosting to predict churn.

4. Evaluate model performance using appropriate evaluation metrics such as accuracy, precision, recall, and F1-score.

5. Fine-tune the best performing model(s) to improve predictive performance.

6. Deploy the final model and create a user-friendly interface for telecom companies to input customer data and obtain churn predictions.

Methodology

1. Data Preparation: Clean the dataset,encode categorical variables, and perform feature scaling if necessary.

2. Exploratory Data Analysis (EDA): Explore the relationships between different features and the target variable (churn). Identify key factors influencing churn.

3. Model Development: Train and evaluate multiple machine learning models using cross-validation. Tune hyperparameters using techniques such as grid search.

4. Model Evaluation: Assess the performance of each model using evaluation metrics such as accuracy, precision, recall.

5. Model Refinement

Conclusion

By predicting customer churn in the telecom industry, we aim to provide valuable insights and tools for telecom companies to proactively manage customer retention strategies.