

ABSTRACT

Telecom churn prediction is the process of using data analytics and machine learning techniques to identify customers who are likely to cancel their service with a telecom company. The objective is to proactively target these at-risk customers with retention campaigns or other interventions before they leave. The input data for churn prediction can include demographic information, call history, billing information, customer usage patterns, and interactions with customer service. The output is a churn prediction score for each customer, indicating the likelihood that they will cancel their service. By reducing churn, telecom companies can improve customer loyalty, reduce customer acquisition costs, and increase revenue.

REFERENCES

[1]<https://www.kaggle.com/datasets/blastchar/telco-customer-churn>

[2]https://en.wikipedia.org/wiki/Customer_attrition

KEY CITATIONS

[1] Hung, Shin-Yuan, David C. Yen, and Hsiu-Yu Wang. "Applying data mining to telecom churn management." *Expert Systems with Applications* 31.3 (2006): 515-524.
Dahiya, Kiran, and Surbhi Bhatia. "Customer churn analysis in telecom industry." *2015 4th International Conference on Reliability, Infocom Technologies and Optimization (ICRITO)(Trends and Future Directions)*. IEEE, 2015.

[2] Ahmad, Abdelrahim Kasem, Assef Jafar, and Kadan Aljoumaa. "Customer churn prediction in telecom using machine learning in big data platform." *Journal of Big Data* 6.1 (2019): 1-24.

Data Science Workflow Canvas

* Those sections below are ordered intentionally to make you state your goals first, followed by steps to achieve those goals. You're welcome to adjust the steps' orders.

Title:		
① Problem Statement What problem are you trying to solve? What larger issues do the problem address?	② Outcomes/Predictions What prediction(s) are you trying to make? Identify applicable predictor (X) and/or target (y) variables.	③ Data Acquisition Where are you sourcing your data from? Is there enough data? Can you work with it?
To predict the customer churn.	How much customers are gonna churn is my prediction.	Data was sourced from kaggle. The dataset contains 7043 rows and 21 columns. Yes it is enough. Yes i can work on it.
④ Data Preparation What do you need to do to your data in order to riun your model and achieve your outcomes?	⑤ Modeling What models are appropriate to use given your outcomes?	⑥ Model Evaluation How can you evaluate your model's performance?
Steps are : Step 1 : Problem Definition Step 2 : Data Collection Step 3 : Exploratory Data Analysis(EDA) Step 4 : Feature Engineering Step 5 : Train/Test Split Step 6 : Model Evaluation Metrics Definition Step 7 : Model Selection , Training , Prediction And Assessment	Models used are : <ol style="list-style-type: none"> 1. KNN 2. Logistic Regression 3. Random Forest 4. SVM 	Using various Machine Learning(ML) algorithms to build prediction models , evaluate the accuracy and performance of these models.