Project Proposal

Team:

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Title:
Churned Prediction System for Telecommunications Industry

Introduction:
As the competition has become more intense, it has become more crucial to retain the existing customers then onboarding the new ones. As the demand of customer increases, so to meet the requirements the service provider make innovative strategies to lower the customer churn. Through Machine Learning Algorithmic Models, it can analyze and visualize datasets to find the patterns which can be helpful, machine learning models can predict which customers is about to leave. By applying the training and validation process, aim to build a model which can help the telecom's o reduce the churn.

Objective:
Is to develop a churn prediction system using the machine learning algorithms. The System accurately identify customers who are at risk of leaving it, and by implementing the strategies so it enhances the customer retention and overall satisfaction.

Aim:
The scope of this project is to develop and design a prediction system by implicating the machine learning algorithms. The system will be capable to analyze the data which will highlight the customers who are likely to showcase the patterns of leaving. The

insights which will be gained from the prediction will be able to construct the retention strategies for customers improving the engagement.

Methodologies:

- Data Processing
  - Cleaning
  - Normalizing
  - Structuring the Data
- Feature Selection
  - Relevant features for predicting churn by utilizing the techniques.
- Dimensionality
  - Applying Methods to outnumber the features without even losing relevant information, such as PCA (Principal Component Analysis) can be used.
- Model Developing
  - Training of model based on the algorithms such as Logistic Regression, Gradient Boosting Algorithm, Neural Nets and Random Forest.
  - Tuning the parameters will be done to optimize the algorithms performance and refine the predictive capabilities of churn model.
- Evaluation
  - Various Evaluation Metrics will be employed to evaluate the model performance.
- Validation
  - Model's reliability will be tested using the cross validation (k-fold), and to prevent it from overfitting.
- Monitoring
  - Monitoring the model, so that it continues to predict and assess the model's performance.

Reference:

- Sharmila K. Wagh, Aishwarya A. Andhale, Kishor S. Wagh , Jayshree R. Pansare, Sarita P. Ambadekar, S.H. Gawande, Customer churn prediction in telecom sector using machine learning techniques. https://www.sciencedirect.com/science/article/pii/S2666720723001443?via%3Dihub

- Abhishek Gaur, Ratnesh Dubey, Predicting Customer Churn Prediction in Telecom Sector Using Various Machine Learning Techniques. https://ieeexplore.ieee.org/document/8933783