Customer Churn Prediction and Retention Strategy

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Project Plan

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Introduction

- The telecommunications industry continuously seeks innovation and customer satisfaction, making loyalty crucial.
- Customer churn occurs when customers switch providers due to dissatisfaction, competition, or a desire for change (Gupta et al., 2019).
- Churn impacts revenue, market reputation, and customer relationships, making its prediction a strategic priority.
- Machine learning offers new solutions for predicting churn by analyzing large datasets and uncovering patterns (Keramati et al., 2016; Lee & Choi, 2020).
- This project explores the effectiveness of logistic regression, random forest, and gradient boosting in predicting churn and developing retention strategies.

Telecommunications and AI

Problem Statement

- Customer churn poses a significant challenge in competitive markets, particularly in telecommunications.
- Retaining existing customers is more cost-effective than acquiring new ones (Ngai et al., 2009).
- Businesses are shifting strategies towards retention due to high acquisition costs and the profitability of long-term customers (Van Den Poel & Larivière, 2004).
- This project addresses churn using machine learning, which can analyze customer data to predict churn accurately and enable targeted retention strategies (Moro et al., 2014; Barakat et al., 2020).

Research Aims and Objectives

- Conduct a literature review on machine learning methods for churn prediction to identify gaps in research.
- Generate practical insights and recommendations based on machine learning capabilities to aid in client retention strategies.
- Assess the performance of various machine learning models through empirical testing and literature analysis to identify areas for improvement.

Research Questions

- How do the performance characteristics of Logistic Regression, Random Forest, and Gradient Boosting differ in predicting customer churn?
- Can hyperparameter tuning enhance the accuracy of gradient boosting and random forest algorithms, and how do their performances compare?

Significance of the Study

- This study provides crucial insights for telecommunications companies facing churn, helping them craft efficient retention strategies.
- It contributes to academic literature by offering a comparative analysis of machine learning algorithms for churn prediction.
- Identifying research gaps can guide future studies in this critical area.
- Findings may directly influence a company's profitability and growth in a competitive landscape.

Data Collection

- Sources of Data
- Type of Data Collected
- Data Preprocessing Steps

Methodology

- Machine Learning Techniques Used
- Model Selection Process
- Evaluation Metrics

Results

- Key Findings from the Analysis
- Churn Prediction Accuracy
- Visualization of Results

Retention Strategies

- Targeted Marketing Campaigns
- Customer Engagement Initiatives
- Incentives for Retention

Conclusion

- Summary of Findings
- Importance of Retention Strategies
- Future Work and Recommendations

Questions

Thank you for your attention!
Any questions?