

## Customer Churn Prediction pada Streaming Musics Platform menggunakan Ensemble Learning

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### Abstract

Churn prediction is crucial for subscription-based services like KKBOX, a leading streaming music platform in Asia. Despite its popularity, KKBOX faces significant challenges with customer churn, where customers cancel their subscriptions, directly impacting the company's revenue and growth. This research explores the development of a churn prediction model using ensemble machine learning.

Churn prediction helps identify customers who are likely to cancel their subscriptions, allowing the company to implement retention strategies. The importance of this topic lies in its financial implications and long-term growth for the business. Effective churn prediction can significantly enhance customer retention, as retaining just 5% of existing customers can increase profits by 25% to 95%.

This research uses a dataset from KKBOX and implements various machine learning models, including logistic regression, SVM, XGBoost, and LightGBM, to predict churn. The solution involves data exploration, data preparation, and feature engineering to improve model accuracy.

In this experiment, LightGBM outperforms other models, achieving the lowest log loss score. These models provide a robust framework for churn prediction and can enhance customer retention strategies for subscription-based services like KKBOX. Future experiments could explore additional features and hyperparameter tuning to further improve model performance.

**Keywords:** Churn Prediction, XGBoost, LightGBM, Ensemble learning, SVM, Logistic Regression

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