

# Submission Summary

**Conference Name**

IEEE 8th International Conference on Electrical, Control and Computer Engineering (InECCE 2025)

**Paper ID**

23

**Paper Title**

OPTIMIZING TELECOM OPERATIONS WITH SEGMENTATION AND CHURN PREDICTION

**Abstract**

Client turnover is a major challenge for large companies, especially in the telecom sector, as it directly affects profitability. Telecom providers are increasingly focused on developing methods to predict customer churn to mitigate its negative effects. Understanding the factors that contribute to churn is essential for preventing it. This work's primary contribution is the development of a churn prediction model, which helps telecom providers identify customers at high risk of churning. We explore different data analysis scenarios and display the results using graphical representations. Our model, built using machine learning techniques, leverages large datasets and introduces a novel approach for feature design and selection. The datasets used for training, evaluation, and validation include historical customer data from previous months. We experimented with four machine learning algorithms: Logistic Regression, XGBoost, Gradient Boosted Machine (GBM) Trees, Random Forests, and Decision Trees. To enhance accuracy, we applied parameter tuning during training. The goal of this study is to optimize telecom operations through effective segmentation and churn prediction, ultimately improving operational efficiency and customer retention.

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### **Primary Subject Area**

Computational System Intelligence

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### **Submission Files**

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### **Supplementary Files**

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