

Paper Summary 7

Paper number	7
Read by	Atman Hapani
Title of paper and author details	Enhancing customer retention in telecom industry with machine learning driven churn prediction Authors – Alisha Sikri ,Roshan Jameel, Sheikh Mohammad Idrees ,Harleen Kaur
Publication year, publication body	2024 The paper was published by Scientific Reports.
Domain of paper [sentiment analysis/ ontology construction...etc]	Customer Churn Prediction using Machine Learning.
Dataset used/ Data sources [if any]	The dataset for churn prediction was sourced from Kaggle.
Implementation tools/ technologies used [if any]	Perceptron Multi-Layer Perceptron Naive Bayes Logistic Regression K-Nearest Neighbor Decision Tree. Ensemble techniques: Gradient Boosting, Extreme Gradient Boosting (XGBoost).

Results given and evaluation parameters used	XGBoost with a 75:25 ratio achieved the best results in terms of accuracy.
Highlights/summary of paper in your words	<p>Introduction of the Ratio-based data balancing technique to address the issue of data skewness, which improves the accuracy of churn prediction models.</p> <p>The study compared several machine learning algorithms on both imbalanced and balanced datasets, showcasing that the proposed data balancing technique outperforms the commonly used Data Resampling method.</p> <p>The analysis covered metrics such as Accuracy, Precision, Recall, and F-Score, with ensemble methods (especially XGBoost) showing the best performance.</p>
Future enhancements suggested	<p>Further exploration of data balancing techniques and their impact on different machine learning models.</p> <p>Investigating the applicability of the proposed methods in other domains with imbalanced datasets.</p>