Paper Review

"E-Commerce Customer Churn Prediction Scheme Based on Customer Behavior Using Machine Learning"

Course Title: Natural Language Processing

Course Code: CSE431

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Submitted To

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1. Summary

1.1 Motivation/Purpose/Aims/Hypothesis:

The goal of this study is to apply machine learning to reduce customer attrition in e-commerce. In order to improve customer retention tactics, it seeks to create predictive models that can precisely forecast client attrition.

1.2 Contribution:

The study makes a major contribution to our knowledge of the behavior of online shoppers. It provides useful insights for e-commerce enterprises by demonstrating how well machine learning algorithms forecast client attrition.

1.3 Methodology:

Starting with a Kaggle dataset that includes a broad spectrum of e-commerce client behaviors, the study takes a holistic approach. To guarantee the quality and relevancy of the data, thorough preprocessing was done. Using three different machine learning algorithms—Decision Trees, Random Forest, and SVM—made the process stand out. The accuracy of each algorithm's customer churn prediction was determined by extensive testing. To find the optimal method for different data situations, comparative analysis was also used in the study. This approach made it clear how effective each algorithm is while also stressing how crucial it is to select the appropriate tool for a given set of data types for predicting churn.

1.4 Conclusion:

According to the findings of the study, machine learning, namely the Random Forest algorithm, is extremely successful in forecasting e-commerce consumer attrition. It emphasizes the capabilities of these technologies in terms of improving client retention.

2. Limitations:

2.1 First Limitation/Critique:

The conclusions of the study might not be as broadly applicable as they could be because of their dependence on a single Kaggle dataset. The particulars of the statistics might not be an accurate representation of the overall state of e-commerce.

2.2 Second Limitation/Critique:

The study may have missed other important elements that are critical for a comprehensive understanding of churn, such as individual behavioral analysis and customer segmentation, by concentrating exclusively on algorithmic correctness.

3. Synthesis:

The results of the study have important ramifications for upcoming uses. Through improved comprehension of customer attrition, e-commerce platforms can formulate more focused retention tactics. These findings can be expanded upon in future study by utilizing larger datasets and investigating novel machine learning strategies to produce more intricate and thorough predictive models. This might result in better business plans and more individualized consumer experiences in the e-commerce industry.