

# Fraud Detection in E-commerce

## Abstract

With the exponential growth of E-commerce and the increasing prevalence of online transactions, the concern over fraudulent activities has become a paramount issue for both businesses and consumers. Establishing robust fraud detection systems is crucial to ensure the security of financial transactions and protect users from unauthorized and malicious activities in the realm of E-commerce.

This abstract presents a comprehensive overview of the fundamental components and methodologies employed in the domain of Fraud Detection in E-commerce. The research emphasizes the utilization of advanced machine learning algorithms, data analytics, and anomaly detection techniques to identify irregular patterns and deviations from normal purchasing behavior.

The integration of real-time monitoring and predictive modeling enhances the system's capability to promptly identify and counteract fraudulent activities. Moreover, the study delves into the significance of feature engineering, model training, and evaluation processes, aiming to elevate the accuracy and efficiency of Fraud Detection in E-commerce systems. It explores the challenges posed by imbalanced datasets and elucidates strategies, including resampling techniques and ensemble learning, adopted to address these issues effectively.

The proposed Fraud Detection system tailored for E-commerce exhibits promising outcomes in terms of accuracy, sensitivity, and specificity. This provides E-commerce platforms with a robust tool to mitigate the risks associated with fraudulent transactions. Recognizing the dynamic nature of fraud patterns, the abstract underscores the need for continuous research and development efforts to adapt and enhance detection capabilities. This ongoing commitment contributes to fostering a safer and more secure environment within the E-commerce payment ecosystem.

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