Comparative Analysis of Neural Networks and Conventional Machine Learning Methods for Credit Card Fraud Detection

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Abstract -Fraudulent activities in credit card transactions have become increasingly common as the use of credit card payments has grown more frequent, driven by technological advancements and the rise in online transactions. This surge has led to significant financial losses, underscoring the need for effective methods to mitigate these losses. Fraudsters employ various tactics to steal users' credit card information, including fake SMS and calls, masquerading attacks, phishing attacks, and more. This paper proposes using multiple machine learning algorithms, such as support vector machines (SVM), k-nearest neighbors (KNN), and artificial neural networks (ANN), to predict fraudulent transactions. Additionally, we compare the effectiveness of these supervised machine-learning techniques and deep-learning methods in distinguishing between fraudulent and legitimate transactions.

Keywords - Credit Card Fraud Detection, Machine Learning, Algorithms