Online Payment Fraud Detection using Machine Learning

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Abstract: *With the exponential growth of digital transactions, financial fraud has become a critical challenge for businesses and consumers alike. This study proposes a machine learning-based fraud detection system designed to analyze transactional patterns and classify payments as fraudulent or legitimate in real-time. Leveraging a supervised learning approach, we trained a Random Forest classifier on a real-world dataset to uncover hidden anomalies and fraudulent behaviors. The model was deployed via a Streamlit-powered web application, making it interactive and user-friendly. Our system provides fast, accurate, and scalable fraud detection capabilities to minimize financial risks and improve transaction security..*

Keywords: Fraud detection, Online payments, Machine learning, Random Forest, Anomaly detection, Streamlit, Cybersecurity, Digital transactions, Financial fraud, Supervised learning