

Project Design Phase -I

Proposed Solution

Date: 24-06-2024

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Project Name: Online Payment Fraud Detection

Maximum Marks; 2

S.NO:	Parameter	Description
1	Problem Statement	David, an e-commerce business owner, faces rising instances of online payment fraud that threaten his company's revenue and reputation. A robust solution is needed to detect and prevent fraudulent transactions in real-time.
2	Idea / Solution description	Implement a fraud detection system leveraging machine learning techniques. The system will analyze transaction data in real-time to identify potential fraudulent activities. It integrates data collection, preprocessing, model training, real-time monitoring, and proactive fraud prevention measures.
3	Novelty / Uniqueness	<ul style="list-style-type: none"> • Machine Learning Integration: Utilizes advanced machine learning algorithms, specifically the <code>BalancedRandomForestClassifier</code>, to handle imbalanced fraud detection data effectively. • Continuous Improvement: The system is designed for continuous model updates based on new fraud patterns and feedback from fraud analysts, ensuring it adapts to evolving threats. • Real-Time Analysis Capability: Though currently hypothetical, the system is designed for real-time transaction monitoring and fraud detection, providing immediate alerts and actions.

4	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> • Enhanced Security: Protects customers from fraudulent transactions, increasing their trust in the e-commerce platform. • Reduced Financial Losses: Minimizes revenue loss due to fraud, contributing to the financial stability of the business. • Industry Standards: Sets a benchmark for cybersecurity practices in the e-commerce industry, encouraging widespread adoption of similar measures.
5	Business Model (Revenue Model)	<ul style="list-style-type: none"> • Subscription Fees: Charge e-commerce businesses a subscription fee for accessing the fraud detection system. • Transaction Fees: Implement a small fee per transaction monitored by the system. • Premium Features: Offer advanced analytics and fraud management tools as premium features for an additional cost.
6	Scalability of the Solution	<p>Technological Scalability: The system can scale horizontally to handle increasing transaction volumes by deploying it on cloud platforms with auto-scaling capabilities.</p> <p>Market Scalability: Applicable to various e-commerce platforms and adaptable to different industries facing similar fraud challenges, expanding the potential customer base.</p>