Cyber Security

ABSTRACT

Credit card fraud detection plays a pivotal role in cybersecurity by safeguarding financial institutions, businesses, and consumers from the growing threat of fraudulent activities in the digital age. As online transactions continue to surge, cybercriminals have become increasingly sophisticated in their methods. Detecting credit card fraud is crucial for several reasons. Firstly, it protects consumers from financial losses and identity theft, enhancing their trust in digital payment systems. Secondly, it shields financial institutions from immense financial liabilities while preserving their reputation. Thirdly, it acts as a deterrent, discouraging cybercriminals and contributing to a safer online ecosystem. Additionally, credit card fraud detection algorithms often incorporate advanced machine learning and data analytics techniques, setting a precedent for the broader field of cybersecurity in developing robust, adaptive defenses against evolving threats. Ultimately, the importance of credit card fraud detection extends beyond monetary considerations, serving as a cornerstone of digital trust and security.

Theme Chosen: Machine learning-based Credit Card fraud detection system.

Idea: Triangular Fraud Detection using Decision Trees.

Triangulation fraud is a type of online scam where fraudsters use an intermediary to receive and forward stolen goods or merchandise purchased with stolen credit card information.
Triangulation fraud, on the other hand, is a recognized type of online fraud that exploits vulnerabilities in e-commerce and highlights the importance of fraud prevention and detection measures in the retail sector.The objective is to detect triangular fraud so that credit card firms' consumers are not charged for products they did not purchase.

Cyber Security

High–level Architecture:

- The model employed must be simple and fast enough to detect the abnormality and label the transaction as fraudulent as soon as possible.The dimensionality of the data might be decreased to safeguard the user's privacy.Thus,we will be using a decision tree to build our model.
- Based on fraud detection, the decision tree will have at most two stages. First is to build a decision tree using the training data provided, and then to use decision rules to classify incoming transactions.
- Decision trees typically employ iteration to solve sub-problems by breaking a complicated problem into several simple ones

Implementation plan:

Triangluar Fraud Detection System: Proposed Workflow