

Fraudulent Activities Detection in E-commerce Websites

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Abstract - In e-commerce money is transferred through websites in the form of transaction. As the number of users in e-commerce increases the number of transactions made by the users also increases as well. The chances of the online transaction being fraud also increases. Through using machine learning, detection of fraud in e-commerce can be developed. There are various number of machine learning algorithms such as Decision Trees, Random Forest. Analysis is done on these machine learning algorithms to find a suitable machine learning algorithm. The amount of money processed through transaction by users in e-commerce can be large or small. The chances for the user engaging in fraudulent activities are very high. The fraudulent activities that user can engage are such as Use of stolen credit cards, money laundering, etc. Due to wide spread of e-commerce in last years, there is a rapid increase in the online transactions by many numbers of users. There has also been a huge growth in the percentage of fraudulent transactions. Hence it necessary to develop and apply different techniques that can help in detecting fraud transactions.

Key Words: Fraud Detection, K-Nearest Neighbors, Decision Tree, Random Forest, Extreme Gradient Boosting.

1. INTRODUCTION

The electronic buying and sale of goods via the Internet utilising online services is known as e-commerce. Electronic funds transfers, Mobile commerce, Internet marketing, supply chain management, electronic data interchange (EDI), online transaction processing, automated data gathering systems, and inventory management systems are all examples of electronic commerce technologies. Technological improvements in the semiconductor industry help electronic commerce, which is the dominant industry of the electronics sector.

Even though other services, such as e-mail, are sometimes utilised, e-commerce frequently employs the internet for at least part of the transaction's life cycle. Purchases of products or services are a common e-commerce transaction. E-commerce is made up of three types: online selling, online auctions, and electronic markets. Electronic commerce makes e-commerce possible.

eCommerce fraud is when a criminal or fraudster uses stolen payment information to conduct online transactions without the account owner's knowledge on an eCommerce platform. Purchase fraud is another name for it. It may be accomplished through the use of a fraudulent identity, a stolen credit card, forged cards and information, and false personal and card information, among other methods.

It goes without saying that the growth of the eCommerce industry, as well as the proliferation of payment methods like cards and online payment solutions, is linked to an increase in fraud.

According to the poll, eCommerce fraud has expanded rapidly in recent years, exceeding eCommerce sales by a factor of two. The chargeback rate is increasing at a rate of more than 20% per year. Since FY17, the number of online shopping scams reported to the National Consumer Helpline has nearly doubled, from 977 to 5,620 cases in FY20, bringing the total number of cases to 13,993. There are several grounds for fraud in eCommerce stores, to say the least. As everything gets digital and AI is employed, fraudsters are becoming more intelligent, creating new tactics, and becoming more sophisticated with each passing year. With today's advanced technologies, stealing data and purchasing information is simple. The use of internet aliases makes identifying and apprehending the criminal harder. In comparison, acquiring evidence and prosecuting cases are subject to less time and resource constraints. You must use a high-quality fraud detection and management system and include creative approaches into your firm to combat fraud.

2. LITERATURE REVIEW

Fraud on credit cards is a type of fraud detection that has evolved quickly. The fraud approach is discussed in many studies. The auto-encoder and constrained Boltzmann machine is one of the deep learning studies [1].

Deep learning is being utilised to create a fraud detection model that works similarly to a human neural network, with data being created in various layers that are tied together for the process, starting with the encoder at layer 1 and ending with the hinge decoder at layer 4. The Deep Learning approach is compared to other algorithms such as the Hidden Markov Model by the researcher (HMM) [2].