Abstract

We propose a unique and hybrid approach containing data mining techniques, artificial intelligence and statistics in a single platform for fraud detection of online financial transaction, which combines evidences from current as well as past behavior. The proposed transaction risk generation model (TRSGM) consists of five major components, namely, DBSCAN algorithm,
Linear equation, Rules, Data Warehouse and Bayes theorem. DBSCAN algorithm is used to form the clusters of past transaction amounts of the customer, find out the deviation of new incoming transaction amount and finds cluster coverage. The patterns generated by Transaction Pattern Generation Tool (TPGT) are used in Linear equation along with its weightage to generate a risk score for new incoming transaction. The guidelines shown in various web sites, print and electronic media as indication of online fraudulent transaction for Credit Card Company is implemented as rules in TRSGM. In the first four components, we determine the suspicion level of each incoming transaction based on the extent of its deviation from good pattern. The transaction is classified as genuine, fraudulent or suspicious depending on this initial belief. Once a transaction is found to be suspicious, belief is further strengthened or weakened according to its similarity with fraudulent or normal transaction history using Bayes theorem.

Reference

- 2008 Internet Crime Report, Federal Bureau of Investigation (FBI), National White Collar Crime Center (NW3C) and Bureau of Justice Assistance (BJA)
- Online fraud is twelve times higher than offline fraud, 20,June,2007

**Index Terms**

Computer Science                Internet Security

**Key words**

Data Mining                        FDS                        Cyber
Crime
Credit Card
Bayes Theorem
A Data Mining with Hybrid Approach Based Transaction Risk Score Generation Model (TRSGM) for Fraud