**LITERATURE SURVEY**

**TITLE:** Data Mining Techniques for Fraud Detection in Banking Sector,”

**ABSTRACT:** Banking sector is having a great significance or value in our everyday life. Each and every person makes the use of banking sector in two ways, (i) physical and (ii) online. Physical fraud can take place like stealing the credit cards, sharing bank account details with corrupt bank employees, etc. Online fraud takes place by sharing the card details on the Internet or over the phone with a wrong person. It may also include spamming and phishing. While carrying out the transactions and all the relations with the bank policies, customers and the banks may face many problems due to fraudsters and criminals, and the chances of getting trapped are very higher. These kinds of frauds can be credit card fraud, insurance fraud, accounting fraud, etc. which may lead to the financial loss to the bank or the customers. Thus, detection of these kinds of frauds are very important. Fraud detection in banking sector is based on the data mining techniques and their collective analysis from the past experiences and the probability of how the fraudsters can steal from customers and banks. Therefore this paper addresses the analysis of data mining techniques of how to detect frauds and overcoming it in banking sector.

**TITLE:** Analysis on credit card fraud identification techniques based on KNN and outlier detection,

**ABSTRACT:** Popular payment mode accepted both offline and online is credit card that provides cashless transaction. It is easy, convenient and trendy to make payments and other transactions. Credit card fraud is also growing along with the development in technology. It can also be said that economic fraud is drastically increasing in the global communication improvement. It is being recorded every year that the loss due to these fraudulent acts is billions of dollars. These activities are carried out so elegantly so it is similar to genuine transactions. Hence simple pattern related techniques and other less complex methods are really not going to work. Having an efficient method of fraud detection has become a need for all banks in order to minimize chaos and bring order in place. There are several techniques like Machine learning, Genetic Programming, fuzzy logic, sequence alignment, etc are used for detecting credit card fraudulent transactions. Along with these techniques, KNN algorithm and outlier detection methods are implemented to optimize the best solution for the fraud detection problem. These approaches are proved to minimize the false alarm rates and increase the fraud detection rate. Any of these methods can be implemented on bank credit card fraud detection system, to detect and prevent the fraudulent transaction.

**TITLE:** Credit Card Fraud Detection Based on Whale Algorithm Optimized BP Neural Network,”

**ABSTRACT:** This paper proposes a credit card fraud detection technology based on whale algorithm optimized BP neural network aiming at solving the problems of slow convergence rate, easy to fall into local optimum, network defects and poor system stability derived from BP neural network. Using whale swarm optimization algorithm to optimize the weight of BP network, we first use WOA algorithm to get an optimal initial value, and then use BP network algorithm to correct the error value, so as to obtain the optimal value.

**TITLE:** ”Using Genetic Algorithm to Improve Classification of Imbalanced Datasets for Credit Card Fraud Detection,”

**ABSTRACT:** With the growing usage of credit card transactions, financial fraud crimes have also been drastically increased leading to the loss of huge amounts in the finance industry. Having an efficient fraud detection method has become a necessity for all banks in order to minimize such losses. In fact, credit card fraud detection system involves a major challenge: the credit card fraud data sets are highly imbalanced since the number of fraudulent transactions is much smaller than the legitimate ones. Thus, many of traditional classifiers often fail to detect minority class objects for these skewed data sets. This paper aims first: to enhance classified performance of the minority of credit card fraud instances in the imbalanced data set, for that we propose a sampling method based on the K-means clustering and the genetic algorithm. We used K-means algorithm to cluster and group the minority kind of sample, and in each cluster we use the genetic algorithm to gain the new samples and construct an accurate fraud detection classifier.

**TITLE:** “FraudMiner: A Novel Credit Card Fraud Detection Model Based on Frequent Itemset Mining,”

**ABSTRACT:** This paper proposes an intelligent credit card fraud detection model for detecting fraud from highly imbalanced and anonymous credit card transaction datasets. The class imbalance problem is handled by finding legal as well as fraud transaction patterns for each customer by using frequent itemset mining. A matching algorithm is also proposed to find to which pattern (legal or fraud) the incoming transaction of a particular customer is closer and a decision is made accordingly. In order to handle the anonymous nature of the data, no preference is given to any of the attributes and each attribute is considered equally for finding the patterns. The performance evaluation of the proposed model is done on UCSD Data Mining Contest 2009 Dataset (anonymous and imbalanced) and it is found that the proposed model has very high fraud detection rate, balanced classification rate, Matthews correlation coefficient, and very less false alarm rate than other state-of-the-art classifiers.