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AUTOMATIC USER MISBEHAVIOR DETECTION IN CREDIT CARD TRANSACTION

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ABSTRACT

In recent years the data mining technique is implemented but the Big Data concept is emerging. Data Mining can process only structured data only. So there is no proper function to extract useful information from instructed data and it is very less effective. The fundamental challenge for Big Data applications is to explore large amounts of data and extract useful information for future action. By this there is no security for the credit card usage. In this paper, we will discuss about the misbehavior of credit card using the big data. So now the user credit card details (mobile number etc.) and all the credit card transactions will be stored in the server and it will also analyze time to time. Now the credit card user sets a range of transaction like amount and frequency in particular amount and time. So when the user crosses the range of transaction then an OTP will be generated to the user mobile. By there will be more safety for users in case of misuse of credit card in case it is lost or stolen by someone and this process is also more effective.

***Keywords*—range of transaction, OTP, big data.**

I. INTRODUCTION

Big Data is broad term for data sets so large that or complex that traditional data processing applications are inadequate The challenges that big data includes are data analysis, storing of large data, searching of data, transferring of large data, querying and information privacy. This big data stores a lot of data which is why it is used a lot and accuracy in big data may leads to more confident decision making, and better decisions can result in greater cost reduction and reduced risk. Big data might be pet bytes and Exabyte's of data consisting of billions and trillions of records of millions people all from different sources. The big data is both structured and unstructured data that is so large it is difficult to process and however, could involve advanced workloads that push the boundaries of what are attainable exploitation ancient information storage and information management techniques and technologies. Hadoop is an open-source framework that allows to store and process big data in a distributed environment across clusters of computers using simple programming models. It is designed to scale up from single servers to thousands of machines, each offering local computation and storage.

II. Proposed System

In our work proposed Automatic User Misbehaviour Detection is used for the fraud detection in credit card usage. In comparison our current proposal provides security for the credit card users in case of any misuse of the credit card.

The main proposed work is that the credit card user stores all his credit card details i.e. mobile number, name, email id and all the required details in big data server. This information will be protected by big data server. The server itself sets a range of transaction depending upon the usage of card user and when the user does the transaction which exceeds the range of his transaction then immediately an OTP (one time password) will be generated to the registered mobile phone. If the user doesn't type the received OTP then the transaction will be terminated. So this way the user can protect from any false usage of his credit card.

The credit card user stores all his details and everything in the Hadoop HDFS file where in this the data storage is done and the data splits into the respective data nodes where the data is stored. Then the data will be stored in the database of the big data server. If the user requests for credit card transaction then the server does all the user detection process and sends the OTP.

The Hidden Markov Model (HMM) is the model which is used in this proposed system. The HMM is a statistical model is assumed to be Markov process with hidden states and the HMM is considered to be the simplest dynamic Bayesian network. This HMM is used for the false detection in credit card detection.

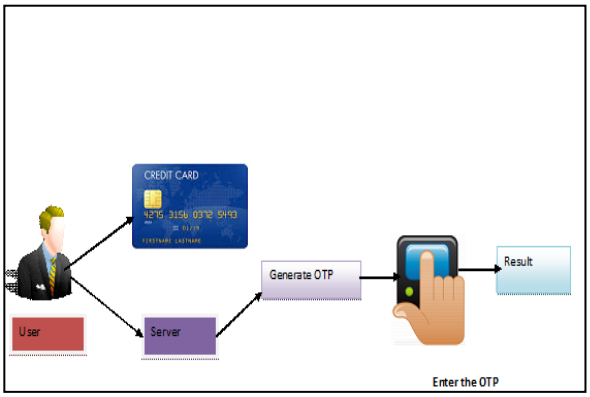

Fig.1: Proposed Architecture.

III. Previous Study

Change point detection in a sequence of bags of data. Kensuke and Hideitsu [1] projected about the significant events occurring in the real world which is often trigger changes in data that someone can get the data from sources related to event and changes in time-series data. Therefore, detecting changes in time series data has been very difficult in the previous areas [2,3]

so the *change point detection* is introduced in this paper. The change point detection can be used in [2,3]. The change point detection can be directly applied in the anomaly detection [2], intrusion detection [3], spacecraft anomaly detection [4]. Leonid and Ilia [2] projected an anomaly detection which is used for the data analysis which is very important. They said in the article that data object is "dissimilar" to the other observations in the data set and it is very important to detect them differently from the other data. Abhinav and Kavitha [3] projected an anomaly based intrusion detection where this system is to detect attacks against information systems and by this many techniques have been proposed to observe network securities. Ryohei and Takehisa [4] gave an approach to spacecraft anomaly detection using a kernel feature space. This paper proposes a novel which knowledge free anomaly detection which constructs a system behaviour model from the past normal data by checking incoming data with model. Bhattacharrya and Westland [5] projected to use data mining for credit card fraud detection but it was not that effective because data mining can process only structured data only.

IV. System Methodologies

A. User registration and data collection

In this stage, data set consists of large number of files 4,00,000 instance from bank credits system and It contains all the information about the clients in that particular bank, for example Card details, email id and personal details, Credit & Debit Statements etc.,

B. Credit card transaction

In this we can design and implement the credit card transaction for a particular amount and frequency. Credit card is a payment card issued to users as a method of payment.

C. Server

In this the server is a computer program running to serve the requests of other programs i.e. clients. The server will store all the users information in the database and it maintains transaction for every user.

D. User pattern recognization

In this we can keep an user frequency and system will monitor user behaviour based on previous monthly transactions and this will be given to big data server

E. Misbehaviour Monitoring

In this the server checks if the user is genuine or not and in case of any misuse of credit card is done like change in frequency then an OTP will be received and if the user is genuine he will grant the purchase and if not purchase will be terminated.

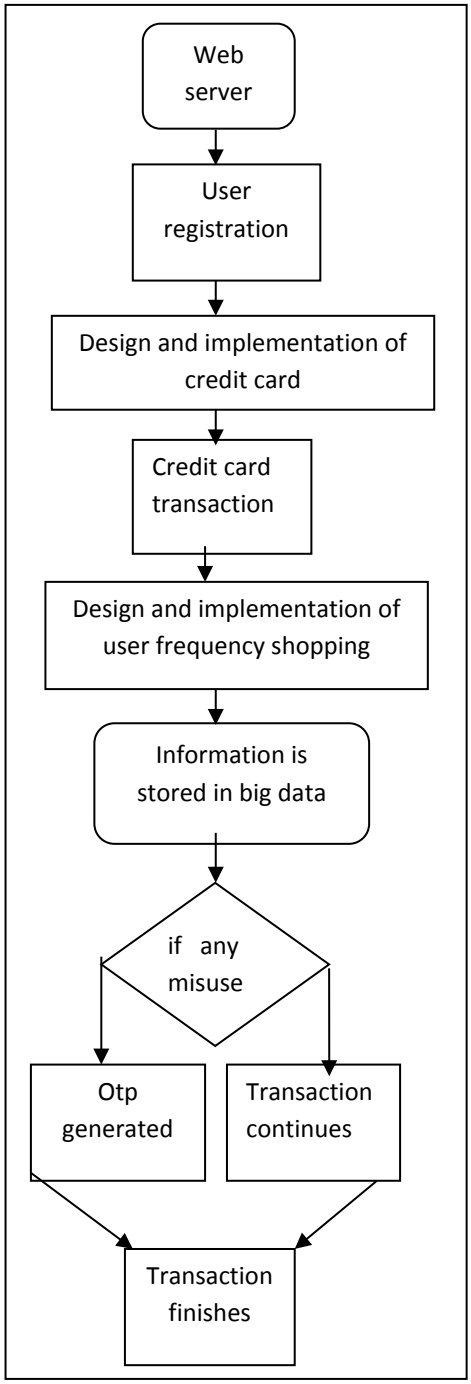

Fig.2**.** Data flow

Algorithm

1. Creating a random key integer assume it as K.

2. In this if the integer value idx is equal to 1 then key size will be generated.
Int idx=1;

3. To generate a random key K

K=key+randomInt;

4. Print the generated key (“”+key)

Return key;

Conclusion

The advantages by this user misbehaviour detection is that it uses big data which stores more data and it is very effective than any other process. The change point detection used the data mining process which does not have proper method to handle a large amount of data and there is no proper function to handle useful information from instructed data. It is also very less effective. In this proposed system we take all the user details and store it in one server. It will generate an OTP if there is any misuse of the credit card. It is very useful if there is any fraud detection in credit card. Now a days there are credit card black market i.e. credit card fraud systems so by this system we can stop all the frauds taken place. By implementing Hadoop in this we take big step for the whole process and it is used for the storing of large and large amounts of data. Big data provides high performance data processing by connecting to different computers which are connected to LAN or any other network. The HMM model is also used for detecting the fraud detection in credit card system.

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