Review on Psychology behind Fraud in Credit Card: Using Machine Learning

Shrutika Sonavane[1], Disha Gavali[2], Pooja Ambuskar[3], Devika Torkade[4]

[1,2,3,4]Department of Computer Engineering /Savitri Bai Phule Pune University/India

ABSTRACT

Cheating somebody to get the money is known as fraud. With the growth of this digital world fraud is also in trend. Credit card fraud is one of that. Online fraud is occur using credit card or a debit card. The goal of this paper to provide complete review of different techniques to avoid credit card fraud.

Keywords: Use of Machine Learning, Cyber Security, Security Attack, Types of Frauds.

INTRODUCTION

Now a days Ecommerce and Digital payments has completely changed the way we pay for goods and services. Coins and Currency are no longer the only mode of financial transactions have become the new way people makes pay-ment of their liabilities, the purpose of shopping, banking, insurance premium etc. Credit card is the one of the financial mode of transactions which allows people to extend their expenditure while their pocket have succumbed. Like that way the fraudlents are increasing in many area networks, " Fraud " leads to substantial financial loss such as Government Sector, As well as in Private Sector.

What Is Credit Card
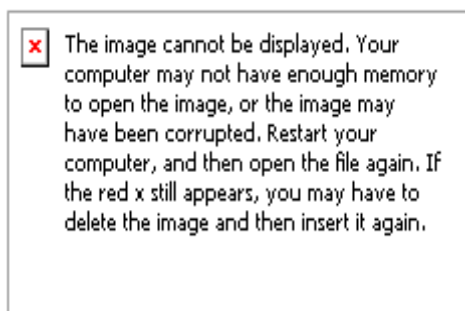
A credit card is a small plastic card with an identification feature, like a signature or photo, that enables the person named on it to charge products or services to an account and sends regular bills to the cardholder. The funds borrow from the card issuer. You can spend the money within your credit limit. Your purchases are funded by the card issuer, which you then reimburse by the due date.

Here user can make monthly payments. The Emi facility offered on transaction above rs. 2500/- to 3000/- It depends upon the transactions of user. If some bills does not paid by user on that due date the bankers will take a higher interest rate from users.

On credit card there are multiple option which is given by developer such as magnetic chip which is used to read the data of card user, CVC code stands for Card Verification Code it is an extra code which is printed on your debit or credit card. With most cards (Visa, MasterCard, bank cards, etc.)for the final three digits of the number printed on the signature strip on the reverse of your card. On bottom of left corner of card name of card holder and the validation date is given till that expiration date card is validate,A magnetic stripe card is a type of pass that permits the user to complete electronic transactions or access a locked physical space. The "stripe" contains embedded information that identifies its user. A card number is use to identify both the credit card issuer and the account holder. Credit and debit cards with holograms make it possible to process payments in a more secure way. You

should make sure that this hologram is there whenever someone pays you with a card. This shows that the card is legitimate and that it is valid. If the card doesn't have a hologram, there might be a problem with it or the user might have fabricated the card. It is crucial that you always look for this hologram while accepting payments in a physical location because of this. And Signature is used to indicate that the card is active or not.

History Of Credit Card: The "Central Card" was first introduced in 1985 by the Central Bank of India, Vysya Bank, and United Bank of India. The "Bank of Baroda Card" was introduced at the same time by Allahabad Bank and Bank of Baroda. By 1989, Anz Grindlays Bank had launched the "Visa Classic Card." Since then, India's credit card population has quickly increased with an estimated growth of 25 to 30 each year. In January 2017, there were between 28 and 8 million credit cards, according to estimates from the RBI. There are currently 661.8 million disbenefit cards in India.

Types of Credit Cards
America Express: This credit card network offers the world's largest integrated payments platform. American Express also doubles as a card issuer.

Discover: The Discover Global Network operates within 200 countries and territories with a reach of more than 280 million cardholders. Discover is also a credit card issuer. The Discover Global Network operates within 200 countries and territories with a reach of more than 280 million cardholders. Discover is also a credit card issuer.

Mastercard: This card network operates in more than 210 countries and territories worldwide, making Master card credit cards some of the most widely accepted and used.
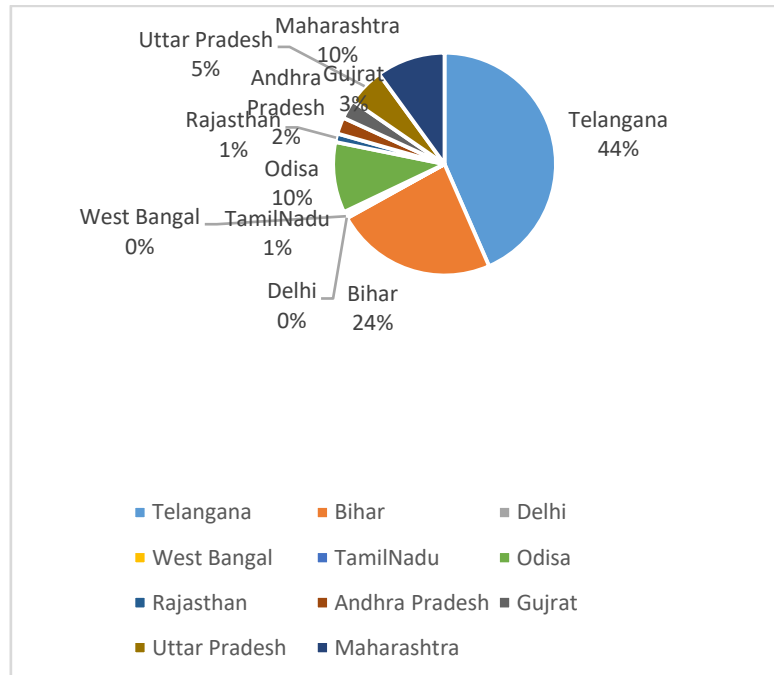
Visa: Visa credit cards are accepted in more than 200 countries and territories around the world, with more than 3.9 billion Visa cards currently in use worldwide.

What is Fraud: Fraud is any malicious activity that aims to cause financial loss to the other party[2]. "Fraud" refers to deceptive behaviour committed by someone with the intent of gaining an illegal advantage or harming the rights of the victim. Fraud is defined as the deliberate misrepresentation of fabricated and manipulated facts that appear true in order to obtain sensitive information that is kept confidential. Fraud caused by the credit cards have consumers and bank billions of dollars globally[2].

Types Of Frauds: Identity Theft is the theft which is a serious crime. It occurs when someone uses your particular information similar as, your name, social security watchwords, credit card figures, disbenefit card figures without yourauthorizationto commit the fraud. Phishing is the form of fraud in which an attackers as a estimable reality or a person in the dispatch or other communication channel. Attackers use the phishing emails to distribute vicious links or attachments thatcan perform variety of functions. Phisher can use the public sources of information to gather background information about victims particular and work history interest and conditioning. generally through social networks sources are typically used to uncover the information similar asnames, jobs, titles and dispatch addresses of the implicit victims. It's the type of online swindles. When someone tries to gain the access of your computer or any electronic bias also it's called as " Intrusion Discovery System ". Intrusion discovery systems(IDS) are part of a system's posterior protection line. IDS is an observing system that detects suspicious conditioning and produces cautions when they're detected and enforced in confluence with security enterprises and procedures similar as authentication, security system and encryption approaches to strengthen security against cyber-attacks. Credit Card Fraud is one of that: Tanushree Ba-suroy published credit card and disbenefit card incident reported in India2021, by leading state on October 14, 2022 The state of Telangana in Indiahad the loftiest number of credit and disbenefit card frauds in 2021, with approximately 703 cases reported to authorities. That time, the countries recorded over1.6 thousand cases of credit and disbenefit card fraud. Report of Fraud cases in India 2021 is given below.

Report of fraud cases in India	
Characteristics	*Number of incidents*
Telangana	703
Bihar	380
Delhi	02
West Bangal	06
TamilNadu	08

Odisa	166
Rajasthan	20
Andhra Pradesh	39
Gujrat	45
Uttar Pradesh	87
Maharashtra	162

What types of frauds people do against the government programs
Deception – making others believe something that is not true.

Recklessness – acting without care, responsibility or regard to the consequences of their actions (this includes a disregard to the harm caused to others)

Concealment – preventing actions from being seen or known about

Fabrication – inventing or producing something that is false

Impersonation – pretending they are another person or entity.

Coercion – influencing, manipulating or bribing another person to act in a desired way.

Exploitation – using something for a wrongful purpose.
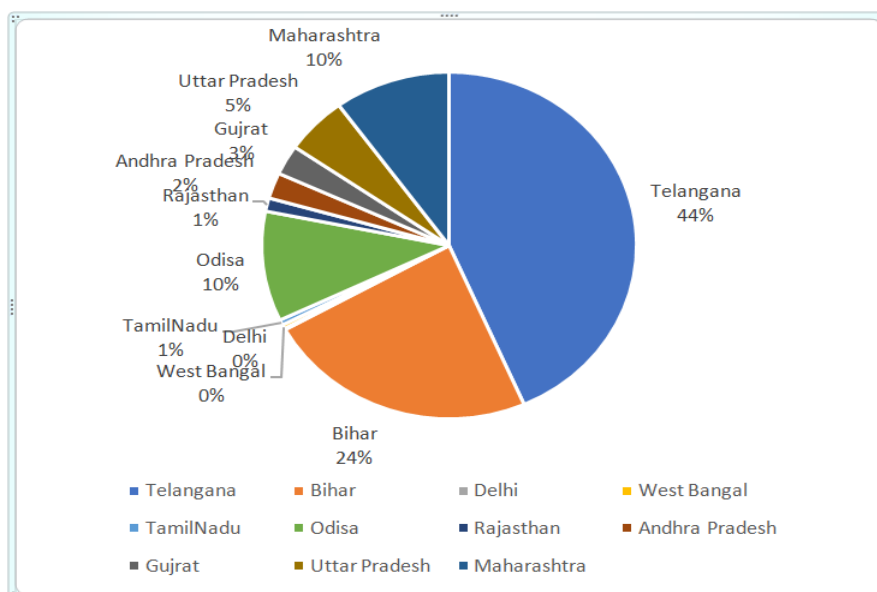
METHODOLOGY

Machine Learning:
Machine learning is the name given to a set of techniques that allow implementing adaptive algorithms to make predictions and to auto-organize input data according to their common features. (Bonaccorso, 2017). Machine Learning is categorized in two types:

The approach that this paper proposes, uses the latest machine learning algorithms to detect anomalous activities, called outliers. The basic rough architecture diagram can be represented with the following figure:
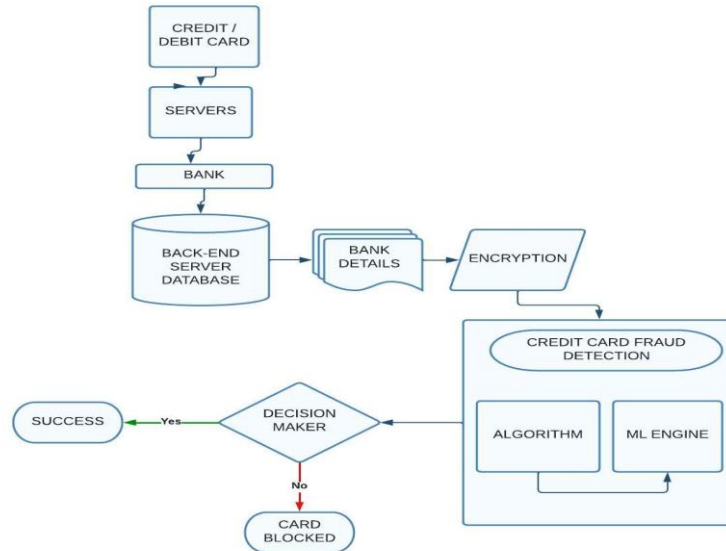
First we collect our dataset from Kaggle. A kaggle is a website which is used for data analysis that offers datasets. There are 31 columns in this dataset, of which 28 are v1 – v28 is used to secure sensitive data. Time, quantum, and Class are represented by the other columns. Time displays the ceased time between the first sale and the coming. The quantum of plutocrat changed is called the quantum. Class 0 denotes a licit sale, while Class 1 denotes a fraudulent bone to visually understand the dataset and look for inconsistencies in it, we compass colorfulgraphs.

Report of fraud cases in India	
Characteristics	*Number of incidents*
Telangana	703
Bihar	380
Delhi	02
West Bangal	06
TamilNadu	08
Odisa	166
Rajasthan	20
Andhra Pradesh	39
Gujrat	45
Uttar Pradesh	87
Maharashtra	162

REFERENCES

[1]. Survey Of Fraud Detection Technique, Published By Yufeng Kou, Changtien Lu, Siriratsirwongwattana &Yo-Ping Huang.

[2]. A Comparative Analysis Of Various Credit Card Fraud Detection TECHNIQUES BY Yashvi Jain, Namrata Tiwari, Shripriya Dubey and Sarika Jain.. International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-7 Issue-5S2, January 2019

[3]. Detection of Real-Time Malicious Intrusions and Attacks in IoT Empowered Cybersecurity Infrastructures Irfan Ali Kandhro 1, Sultan M. Alanazi 2, Fayyaz Ali3, Asadullah Kehar4, Kanwal Fatima1 , Mueen Uddin 5, And Shankar Karuppayah 6. 11 January 2023, date of publication 20 January 2023, date of current version 31 January 2023. Digital Object Identifier 10.1109/ACCESS.2023.323866

[4]. A Quick Review of Machine Learning Algorithms Susmita Ray Department of Computer Science & Technology Manav Rachna University Faridabad, India.2019 International Conference on Machine Learning, Big Data, Cloud and Parallel Computing (Com-IT-Con), India, 14th -16th Feb 2019

[5]. Card Fraud Reduction Technology In Biometric Fingerprint Security Using Data Mining Algorithms P. Gayathiri, M. Punithavalli. International Journal Of Engineering And Advanced Technology (Ijeat) Issn: 2249-8958 (Online), Volume-8 Issue-6, August, 2019