# A Survey on Detection and Defense from Phishing

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***ABSTRACT:*** *In this paper, the survey on the Phishing, and also concentrate on, how to detect and defense from it. The new world everything is received and achieved by technology. Without that can't do anything, now the technology arises so the risk arises too. On back days whatever have to buy and store the money in the account or transfer money from one account to another and so on. On past days do it by manual by hand to hand. But now do the same thing with online payment. By that risk increase day by day. In this paper get to understand the definition of phishing, its type, scenario, problem statement, objectives and work extend.*

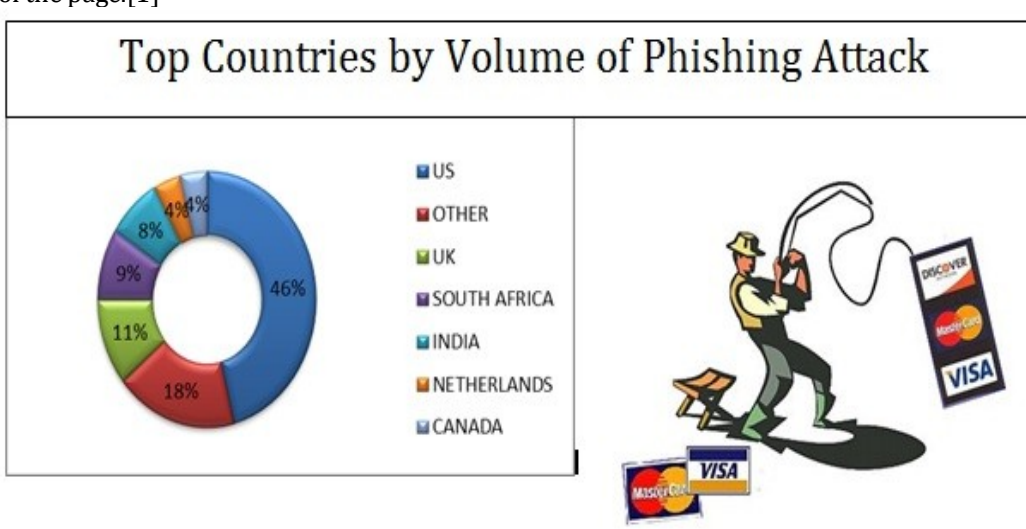
***Key Words:*** *Machine Learning,vector machine, decision tree, k-means, etc.*

## Introduction

In the world of technology, cybercrime is a common incident that will happen with anyone and anytime. The Cybercrime is what the crime that attacked computer and network. This document is a Phishing Detection and Defense. In the real world the stealing of property, data document, money, and confidential private material is steal by stealer which we know said it criminal. But imagine who try to these same things not the real world in the virtual world that we called is **PHISHER**. And the work the phisher did is called **PHISHING**.

The expression "ph" is coming from the phone phreaking. this technique was very general that bother the telephone system during the 1970s. Most of the phishing is imitative from the similarity of a person who does the fishing.

Now the question arises what happen if someone steals our personal information by that blackmail us. we lost our privacy by using social media and email. The phish pages are those pages look like real pages but they are not really fake. Whenever we use any social media page and e-banking page we have to check the URL of the page.[1]




One of the most money-making offense since the past is "identity theft", which mean to filch any person's identity. In conventional term, criminals perform these either by homicide the victim and pretended to be a person or stealer private information from f the garbage by entering information from remaining letters, financial record, electricity bill, and many other bills and things which are discarded without shredding the property. the phisher hijacks bank web pages and sends emails to the victim collect the victim bank account information. The phisher plays an important role in phishing. a complete phishing attack in values the role

of the phisher.

For example, a sociological message can attack the victim browser through malware. Wherever the victim logs in to perform his/her banking tasks. When ever we do the online transaction which would in turn transfer money to the attacker account.

**Spoofing (phishing) types**

Phishing has expandoutside limits through email to include SMS, Instant messaging games. Below are some class division ofSpoofing (phishing).[1,2]

A. Clone phishing

It is that phishing type attack in which the hacker tries to duplicate a web site. Victim usually visits that duplicate. These cloned website usually asks for a login, just like same as the real websites.

B. Spear Phishing

It make targets at the specific group. So instead of the casting of e-mail randomly phisher will target on the selected group of people. For eg. The people from the same Org. spear phishing

C. Phone Phishing

A message that would claim to be from a bank. That message would asking for the user to dial a phone no. to regarding this problem . With thehelp user's bank accounts the electronic message SMS phishing is phone phishing. The end users will get that message from them and telling that he /she has successfully entered. Some reason he/she wants to exit out.They should visit the website now the end users visit the website.For that we provide the confidential and sensitive information to the phishers/ hackers

D. Deceptive Phishing

Sending a email, in access , with “a call of action" that depends on the victim click on a link.The most common type of phishing scam is referred to the deceptive phishing. The attacker and the fraudster attack by a legitimate company and try to fraud fetch personal or login information. Those emails use as threats and scarefor users into doing the attacks.

E. Malware Based

By using theMalicious software in the victim computer machine. Various form of malware – based phishing :

- ✓ Key logger and Screen Logger
- ✓ Session hijacker
- ✓ Trojan horse
- ✓ Data theft

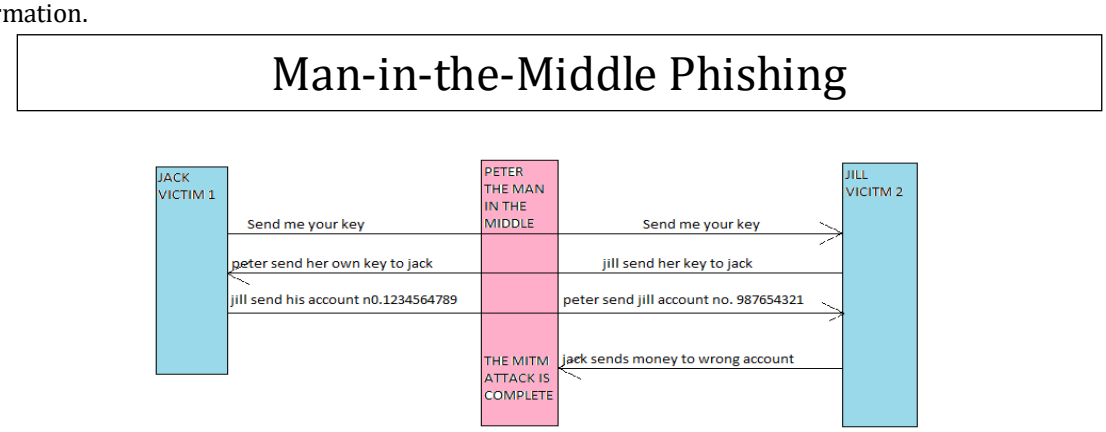
F. DNS Based

Spoofing interferes the domain name for a integrity of the lookup process. DNS- based Forms of spoofing are:

- ✓ Host file poisoning
- ✓ Polluting user’s DNS cache
- ✓ Proxy server compromise

G. Man-in-the-Middle Phishing

Phisher position himself between the user and the legitimate site.A man-in-the-middle-attack is referred to the attack in which the phisher is secret intercepts the digital text message given between the source and destination during message transmission. the attack will use the Trojan horses to intercept personal information.



**Comparative and analyzing study**

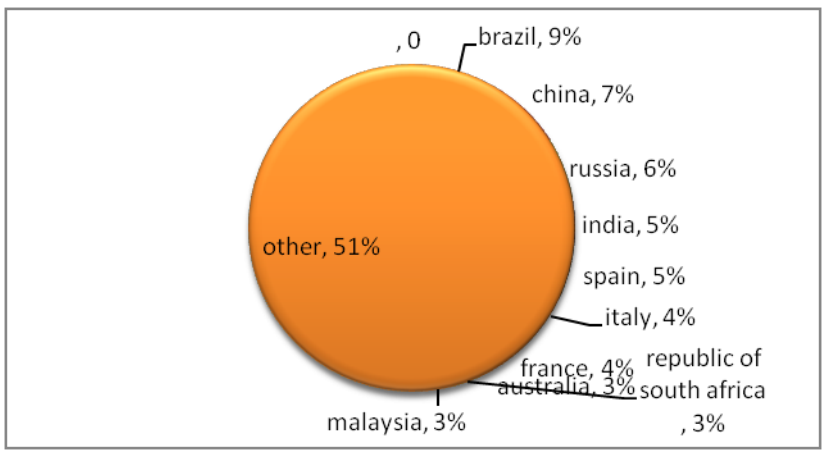
| Seno | Author | Paper Title | Description of the work | Result |
|---|---|---|---|---|
| 01 | Sheng, S. 2009 | An empirical analysis of phishing blacklists. | The phishing effectiveness blacklists was studied. this study 191 new phished used that lesser than 30 minutes old to run two tests on anti-phishing toolbars. | According to blacklists this paper is noted and established at different frequencies. The was estimation 50-80% of phishing URL's displayed which are in the blacklist 12 |
| 02 | Sadeh, (2007)[1] | Learning to detect phishing emails. | The research work is done on a randomforest algorithm. Spoofing Identification by learning featuresemail received. | PILFER It is noted that has sharp accuracy to illegitimate detect emails. IP based URLs were used in a features few in order to detect illegitimate emails. From the result it the rate of false positive |
| 03 | JyotiChhikara, RituDahiya, Neha Garg, Monika Rani (2016) | Phishing & Anti-Phishing Techniques: Case Study | Phishing is a fraud game that act by scammers uses to collect personal information from unsuspecting users. Web pages, where the users are asked to enter whole information may look real and genuine. | In combat phishing order to, business and consumers need to adopt best practices. security protection and protocols, current use as report suspicious activities on cyberspace. The final technical solution for phishing involves infrastructure changes on the Internet. |
| 04 | Ahmad Alamgir Khan (2017)[5] | Preventing Phishing Attacks using One Time Password and User Machine Identification | Phishing is a cyber-attack. Cyber-attack criminals use the criminology trickby that the victims to steal their personal. They use the trick to steal financial data and information. an organized criminal activity financial data by misdirecting them to the counterfeit website a way to lead victims to reveal their personalities. | With due care of using internet user can reap the benefits of internet technology. It is important to be aware of the dangers of such attacks and their devastating effects. |

**Phishing scenario**

The following steps were taken by a phisher to occur the typical phishing as begins:
The Phisher that access a fool version of the target website over a web server. Now they sends fake email to

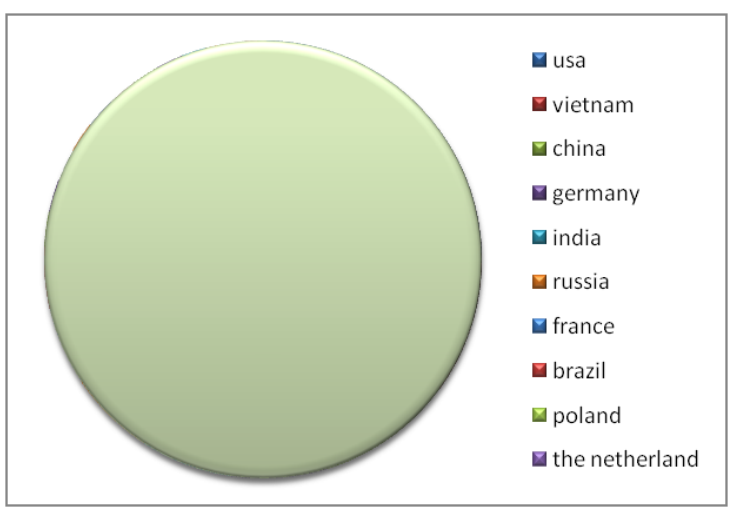
the target users. Email generally contains the message stating an emergency that which requires the immediate action on that fake mail. fake link in the mail directs user to server on which attacker has attacked the similar looking login page of the attacked target website. Victim supplies his/her confidential data on the fool website. Which stored by the phisher The user information is the favorite playing thing by the phisher to do the fraud Present and past pie chart of the cyber attack in INDIA & other COUNTRY.

Past pie chart




In this chart, INDIA has a country in which only 5% of cybercrimes were attacked. But after some year extend the percentage of crime is increased at5.16%. this would increase day by day.

Present a pie chart




There is a case would happen in 2017. 27,482 cases of cybercrime reported. One attack in India every 10 minutes. On July 22, New Delhi: In India at least one cyber attack was reported in every 10 minutes. In2017 the India computer emergency response team, a total of 27,482 cases of cybercrime have been reported across the world. These include phishing, site intrusion, virus, ransomware. 1.71 lakh cybercrime were reported in India. The past three and a half year.

**Phishing detection**

The detection of phishing in these days is not quite possible, modern-day phishing uses stealthy techniques to target to do online and trick them into their messages. The phishing attack always aims to collect personal and important data information steal including login credential, credit card number, security card number, bank account number for fraud Ent purposes. Now there were many methods to detected the phishing sites, in this paper, we only figure out the most recent phishing detection method.

*Search engine Based[1]*

Technique in that the extra feature are text, images, URLs. Then find these in same or multiple search engine. The guess of detecting the normal website will be in the top find result. Phish webpages, the normal website typically have an index and then remain active for short time.

*Machine learning based[1]*

This technique extracts group of feature of text, image or URL . Specific data information is get from real or not real websites. All these techniques of this division a set of the feature such as web pages content, URLs . the machine learning which is used for making a model. Class differ in term of the type and number of features which was extracted. the use of algorithm to identify the feature of sets and weight that assign ,machine learning feature ,optimization also. thebest use of the anti-spoofing technique.

*Blacklist and whitelist based*

The whitelist are normal website and the blacklist containing unnatural website ,it capture either by user feedback or via reporting by the third parties who move the phishing URLs detection.

**Phishing defense**

Phishing is said to be an online identity theft.The main aim of online fraud is fraudulently obtain personal information. A computer behind a firewall is your best prevention against Trojan and spyware.Y our operating system patched to avoid known software vulnerabilities from being exploited. sending spoofed emails, banks or legitimate companies that look trusted sources.

There are some more prevention from phish attack always update your browser to ensure that it is up-to-date. Delete the Spamemails from email. It expectation that eventually someone will read the spam.After that send their personal information spam emails. Review credit card and them to check for unauthorized charges.

**Work extend**

In this paper, we analyze the Phishing. By this survey, we get some information about phishing. we also know about the type of phishing and phishing scenario, how to detect and defense in phishing. After this survey, we have to extend our work, for detection of the phishing site by using a machine learning approach. In Machine Learning there is a lot of technique to detect phish page such as vector machine, decision tree, k-means, k-n algo, etc.

**Conclusion**

In this, we survey some technique for phishing detection, which has been performed. We also see present and past scenario of cybercrime phishing attack in India. The percentage will increase from day to day. The phishing attack is successful because so many undisciplined, authentic web users. Our future work is to research to detect the phishing page of fake searching websites and bank sites and make the best detection technique for the future.

**REFERENCES**

[1] Fette, I., Sadeh, N., Tomasic, A.: Learning to Detect Phishing Emails. Technical Report CMUISRI-06-112. (2006)
[2] Chapelle, O., Vapnik, V.: Model Selection for Support Vector Machines. (2009)
[3] Information Processing Systems 12 Cherkassy, V.: Model Complexity Control and Statistical Learning Theory. Journal of Natural Computing 1, 109–133 (2002)
[4] Lee, J.H., Lin, C.J.: Automatic Model Selection for Support Vector Machines. (2013)
[5] Chang, C.C., Lin, C.J.: LIBSVM: A Library for Support Vector Machines(2016)