LITERATURE SURVEY

Web Phishing Detection

Author name: Mahmoud Khonji , Youssef Iraqi and Andrew Jone

Year of publishing: 2013

Description:

Phishing attacks target vulnerabilities that exist in systems due to the human factor. Many cyber attacks are spread via mechanisms that exploit weaknesses found in endusers , which makes users the weakest element in the security chain. The phishing problem is broad and no single silver-bullet solution exists to mitigate all the vulnerabilities effectively, thus multiple techniques are often implemented to mitigate specific attacks. This paper aims at surveying many of the recently proposed phishing mitigation techniques. A high-level overview of various categories of phishing mitigation techniques is also presented, such as: detection, offensive defense, correction, and prevention, which we belief is critical to present where the phishing detection techniques fit in the overall mitigation process.

Author name: Ankit Kumar Jain and B. B. Gupta

Year of publishing: 2017

Description:

Phishing is one of the major problems faced by cyber-world and leads to financial losses for both industries and individuals. Detection of phishing attack with high accuracy has always been a challenging issue. At present, visual similarities based techniques are very useful for detecting phishing websites efficiently. Phishing website looks very similar in appearance to its corresponding legitimate website to deceive users into believing that they are browsing the correct website. Visual similarity based phishing detection techniques utilise the feature set like text content, text format, HTML tags, Cascading Style Sheet (CSS), image, and so forth, to make the decision. These approaches compare the suspicious website with the corresponding legitimate website by using various features and if the similarity is greater than the predefined threshold value then it is declared phishing. This paper presents a comprehensive current solution space, analysis of phishing attacks, their exploitation, some of the recent visual similarity based approaches for phishing detection, and its comparative study. Our survey provides a better understanding of the problem, and scope of future research to deal with phishing attacks efficiently using visual similarity based approaches.

Author name: M. Vijayalakshmi, S. Mercy Shalinie, Ming Hour Yang,
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Year of publishing: 2020

Description:

Internet dragged more than half of the world's population into the cyber world. Unfortunately, with the increase in internet transactions, cybercrimes also increase rapidly. With the anonymous structure of the internet, attackers attempt to deceive the end-users through different forms namely phishing, malware, SQL injection, man-in-the-middle, domain name system tunnelling, ransomware, web trojan, and so on. Amongst them, phishing is the most deceiving attack, which exploits the vulnerabilities in the end-users. Phishing is often done through emails and malicious websites to lure the user by posing themselves as a trusted entity. Security experts have been proposing many anti-phishing techniques. Till today there is no single solution that is capable of mitigating all the vulnerabilities. A systematic review of current trends in web phishing detection techniques is carried out and a taxonomy of automated web phishing detection is presented. The objective of this study is to acknowledge the status of current research in automated web phishing detection and evaluate their performance. This study also discusses the research avenues for future investigation.

Author name: Ashit Kumar Dutta.

Year of publishing: 2021

Description:

In recent years, advancements in Internet and cloud technologies have led to a significant increase in electronic trading in which consumers make online purchases and transactions. This growth leads to unauthorized access to users' sensitive information and damages the resources of an enterprise. Phishing is one of the familiar attacks that trick users to access malicious content and gain their information. In terms of website interface and uniform resource locator (URL), most phishing webpages look identical to the actual webpages. Various strategies for detecting phishing websites, such as blacklist, heuristic, Etc., have been suggested. However, due to inefficient security technologies, there is an exponential increase in the number of victims. The anonymous and uncontrollable framework of the Internet is more vulnerable to phishing attacks. Existing research works show that the performance of the phishing detection system is limited. There is a demand for an intelligent technique to protect users from the cyber-attacks. In this study, the author proposed a URL detection technique based on machine learning approaches. A recurrent neural network method is employed to detect phishing URL. Researcher evaluated the proposed method with 7900 malicious and 5800 legitimate sites, respectively. The experiments' outcome shows that the proposed method's performance is better than the recent approaches in malicious URL detection.

Author Name: Pratik Patil and Prof. P.R. Devale

Year of publishing: 2016

Description:

It is a crime to practice phishing by employing technical tricks and social engineering to exploit the innocence of unaware users. This methodology usually covers up a trustworthy entity so as to influence a consumer to execute an action if asked by the imitated entity. Most of the times, phishing attacks are being noticed by the practiced users but security is a main motive for the basic users as they are not aware of such circumstances. However, some methodologies are limited to look after the phishing attacks only and the delay in detection is mandatory. In this paper we emphasize the various techniques used for the detection of phishing attacks. We have also discovered various techniques for detection and prevention of phishing. Apart from that, we have introduced a new model for detection and prevention of phishing attacks.

Author Name: Ayesha Arshad and Muhammad Azeem

Year of publishing: 2021

Description:

Phishing is the number one threat in the world of internet. Phishing attacks are from decades and with each passing year it is becoming a major problem for internet users as attackers are coming with unique and creative ideas to breach the security. In this paper, different types of phishing and anti-phishing techniques are presented. For this purpose, the Systematic Literature Review(SLR) approach is followed to critically define the proposed research questions. At first 80 articles were extracted from different repositories. These articles were then filtered out using Tollgate Approach to find out different types of phishing and anti-phishing techniques. Research study evaluated that spear phishing, Email Spoofing, Email Manipulation and phone phishing are the most commonly used phishing techniques. On the other hand, according to the SLR, machine learning approaches have the highest accuracy of preventing and detecting phishing attacks among all other anti-phishing approaches.