Phishing Website Detection: Security Through Machine Learning

Prof. Aparna Mote[1], Om Bastapure[2], Adinath Admane[3], Abhishek Andhale[4], Aaditya Assalkar[5]

Head of Department, Department of Computer Engineering[1]

Students, Department of Computer Engineering[2,3,4,5]

Zeal College of Engineering and Research, Pune, India

Abstract*: Phishing attacks remain a prevalent threat to online security, exploiting unsuspecting users through deceptive tactics. In response, this paper proposes a novel approach utilizing machine learning algorithms, specifically Support Vector Machine (SVM) and Random Forest, for the detection of phishing websites. Leveraging a diverse set of features including website content, domain registration information, and user interactions, the proposed system aims to effectively distinguish between legitimate and malicious websites in real-time. Through extensive experimentation on a comprehensive dataset of known phishing sites, the efficacy of SVM and Random Forest in detecting phishing attempts is evaluated and compared. Results demonstrate the promising performance of both algorithms, with SVM showcasing high accuracy and Random Forest exhibiting robustness to noisy data. The integration of these machine learning techniques into security frameworks offers a proactive defence against phishing attacks, thereby enhancing online security, and preserving user trust in digital transactions.*

Keywords: Phishing, Cybersecurity, Malicious Website Detection, Supervised Learning, Classification Algorithms

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