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(57) Abstract :
Phishing URLs trick individuals into revealing sensitive information, such as login i credentials or credit card numbers, by disguising themselves as trustworthy entities, often through deceptive websites. These fraudulent websites are becoming increasingly sophisticated, rapidly evolving, and are often short-lived, thus making existing blacklist based detection methods inefficient. Moreover, as the blacklist needs to be constantly updated to perform training on fresh data, the use of existing machine learning algorithms has resulted in unreliable detection. Amidst the escalating threat of phishing attacks and their associated risks, we propose an innovative Sequential Phishing Detection System (SPDS) that harnesses the power of Bayesian Network-based analysis and Machine Learning to enhance the cyber security. This sequential procedure of condition-based testing greatly amplifies the system's ability to detect potential threats effectively and efficiently. Crucially, the system integrates an_XG Boost model for machine learning evaluation, utilizing a custom pre-labelled dataset of —600:000-URL sycvenly-divided between phishing and legitimate instances. This-dataset has been curated meticulously to train and fine-tune our machine-learning model, thereby ensuring robust and reliable predictions. We have found that this SPDS framework outperforms the existing XGBoost model with an accuracy of 97-94% and reduces the number of false negative predictions by 93.23%.

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