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Performance Evaluation of Machine Learning Algorithms for Hypertext Transfer Protocol Distributed Denial of Service Intrusion Detection

by

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Abstract

As this paper has expounded, the techniques against DDoS attacks borrow greatly from the already tested traditional techniques. However, no technique has proven to be perfect towards the full detection and prevention of DDoS attacks. Intrusion detection system (IDS) using machine learning approach is one of the implemented solutions against harmful attacks. However, achieving high detection accuracy with minimum false positive rate remains issue that still need to be addressed. Consequently, this study carried out an experimental evaluation on various machine learning algorithms such as Random forest J48, Naïve Bayes, IBK and Multilayer perception on HTTP DDoS attack dataset. The dataset has a total number of 17512 instances which constituted normal (10256) and HTTP DDoS (7256) attack with 21 features. The implemented Performance evaluation revealed that Random Forest algorithm performed best with an accuracy of 99.94% and minimum false positive rate of 0.001%.

<https://ieeexplore.ieee.org/document/9043262>