عنوان مقاله:

An MLP-based Deep Learning Approach for Detecting DDoS Attacks

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خلاصه مقاله:

Distributed Denial of Service (DDoS) attacks are among the primary concerns in internet security today. Machine learning can be exploited to detect such attacks. In this paper, a multi-layer perceptron model is proposed and implemented using deep machine learning to distinguish between malicious and normal traffic based on their behavioral patterns. The proposed model is trained and tested using the CICDDoS۲۰۱۹ dataset. To remove irrelevant and redundant data from the dataset and increase learning accuracy, feature selection is used to select and extract the most effective features that allow us to detect these attacks. Moreover, we use the grid search algorithm to acquire optimum values of the model's hyperparameters among the parameters' space. In addition, the sensitivity of accuracy of the model to variations of an input parameter is analyzed. Finally, the effectiveness of the presented model is validated in comparison with some state-of-the-art works.

کلمات کلیدی:

distributed denial of service, network security, machine learning, Multi-layer perceptron, CICDDoS۲۰۱۹

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