

1135-VN-940

**Kevin L. Li\*** (likevin6688@gmail.com), 124 Mitchell Road, Somers, NY 10589, and **Xiaodi Wang** (xiaodiwang1@yahoo.com), 310 Lexington Blvd, Bethel, CT 06801. *Intrusion Detection Algorithm Based On Discrete Wavelet Transform and Support Vector Machines.*

Network security intrusion and attacks are becoming increasingly adaptive. Therefore, an accurate detection system is necessary to protect public or private information. Existing Intrusion Detection Systems (IDSs) are only reliable to detect already known intrusions, as it is a self learning mechanism. Using discrete wavelet transform, we can capture both the frequency of attacks and the location on the server that has been attacked which allows us to categorize the intrusions. By using Support Vector Machines (SVMs) and feature analysis on the NSL-KDD Dataset, the efficiency of the generalization of the SVM can design better classifiers for more efficient IDSs and protect network information. By using a wavelet kernel function, the mechanism has a much more versatile learning curve to increase the chance of decreasing the false negative rate and increase the true positive rate. This method is compared to other models and improvements such as the Radial Basis Function (RBF) with SVMs to analyze the effectiveness of the methodology. (Received September 17, 2017)