Patent Search

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Abstract:

In this invention, a novel system is developed based on supervised deep learning which is able to classify network traffic in smart cities whether it is benign or malicious. B model is found based on success rate of detection hence feature selection method is integrated with supervised learning algorithm in this invention. Based on research Ar Neural Network (ANN) is found to be outperform than support vector machine (SVM) as the proposed invention involves deep learning along with wrapper feature selectic order to classify network traffic. Intrusion detection is the first step in prevention security attack in smart cities. Network traffic is classified by this system using both SVM algorithm and ANN algorithm by utilizing NSL-KDD dataset. It is found that success rate of intrusion detection for the proposed Deep Learning based algorithm in smart ci comparatively efficient than SVM algorithm.

Complete Specification

Claims:1. Intrusion detection is demanded for network security in smart cities, achieved by deep learning algorithm in combination with feature selection method.
2. Model performs best when built using Artificial Neural Networks and wrapper feature selection for classifying network traffic.
3. 94.03% of success rate of detection is achieved by the proposed model.
4. Proposed detection system will be able detect both known attacks along with novel attacks possible in the applications of smart cities.
5. False positive rate is minimized than existing techniques.
6. Reliability of transmission is achieved by this system in wireless network in smart cities as only authenticated personnel are able to access the data.

, Description:• The proposed system is implemented and evaluated by utilizing widely used deep learning software suite available open source called Weka.
• Weka is able to implement several other algorithms along with deeplearning algorithms which also act as a search technique that can be implemented for performir feature selection.
• In the Artificial Neural Network model, experimentation is done with different number of hidden layers where the success rate of detection varies with respect to th number of hidden layers considered in the model.
• Selection of number of hidden layers is trial and error method where 3 hidden layers are found to be giving best detection rate with a learning rate of the system as 0.1.
• SVM algorithm is also used as classifier in the wrapper feature selection method along with ANN algorithm and found to be best.
• This model implemented using Weka is run on a computing platform with Intel core i5 CPU of 64 bit 2.6 GHz frequency with 8 GB RAM on the environment of Windo

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